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Differential Associations of Communication and Love in Heterosexual, Lesbian, and Bisexual Women's Perceptions and Experiences of Chronic Vulvar and Pelvic Pain

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The literature on genital and pelvic pain has largely focused on heterosexual women. An online study examined characteristics of vulvar pain in 839 lesbian, bisexual, and heterosexual women 18–45 years of age and investigated associations between relationship qualities such as love and communication with participants' perceptions of pain's influence on relationships. Characteristics of vulvar pain were similar across groups. Groups differed in how they perceived pain to impact their relationships, such that better communication for same-sex couples and more love for mixed-sex couples was associated with the perception of their pain as having less of an effect on their relationship functioning.

The prevalence of chronic vulvar and pelvic pain conditions in women is high. Estimates suggest that between 4 and 43.4% of women aged 18–50 report experiencing chronic pelvic pain (Latthe, Latthe, Say, Gülmezoglu, & Khan, 2006) and up to 19% report experiencing chronic vulvar pain (Harlow, Wise, & Stewart, 2001). The term *chronic pelvic pain* refers to nonmenstrual pelvic pain that lasts for a minimum of 6 months and causes functional disability and/or leads to medical or surgical treatment (Howard, 2003). Although chronic pelvic pain can be related to a variety of disorders of the reproductive tract, gastrointestinal system, or urological organs, the etiology of chronic

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pelvic pain is often not known. Likewise, chronic vulvar pain can be related to a specific disorder (e.g., chronic yeast infections, lichen sclerosus), but the diagnosis of *vulvodynia*, or idiopathic chronic vulvar pain, is most often made in the absence of physical findings (Haefner, 2007); vulvodynia is described as "vulvar discomfort, most often described as burning pain" by the International Society for the Study of Vulvovaginal Disease (Haefner, 2007, p. 49). Women with chronic pelvic or vulvar pain (hereafter often referred to as *genital pain*), whether it is manifested as pelvic or vulvar, experience challenges in many aspects of functioning, including quality of life (Simoens et al., 2012; Xie et al., 2012), comorbidities with other medical and pain conditions (Nguyen, Veasley, & Smolenski, 2013; Suskind et al., 2013), mood (Khandker et al., 2011; Smorgick, Marsh, As-Sanie, Smith, & Quint, 2013), and sexuality (Smith, Pukall, & Chamberlain, 2013; Tripoli et al., 2011).

As one of the main symptoms in both chronic pelvic pain and vulvar pain is dyspareunia (pain during sexual intercourse; Goldstein & Burrows, 2008; Mann, Shuster, & Moawad, 2013), there is an inherent assumption in the literature that the pain is being experienced predominantly in heterosexual contexts (e.g., penile-vaginal penetration). As such, the research to date on genital pain has almost exclusively been studied in heterosexual women. What is known about genital pain in queer women (i.e., women who identify as something other than heterosexual) is gleaned from ancillary outcomes of studies using the Female Sexual Function Index, a common tool used to measure sexual functioning in both heterosexual and queer samples of women. The index measures six domains of sexual functioning, one of which assesses pain during sexual activity (R. Rosen et al., 2000). The results from these studies indicate that queer women do experience pain with sexual activity (e.g., Alanko, Jern, & Gunst, 2012; Beaber & Werner, 2009; Boehmer, Ozonoff, Timm, Winter, & Potter, 2014; Breyer et al., 2010; Burri et al., 2012; Schick, Herbenick, Rosenberger, & Reece, 2011; Schick, Rosenberger, Herbenick, & Reece, 2012; Tracy & Junginger, 2007), and while queer women's pain scores on the Female Sexual Function Index are often lower than those reported by heterosexual women (Alanko et al., 2012; Breyer et al., 2010; Nichols, 2004; Schick et al., 2012), this is not always the case. One study reported no difference in pain scores between lesbian and heterosexual women (Beaber & Werner, 2009), and another study found women without any present or past heterosexual experiences actually reported more pain problems than women with heterosexual experiences, although this difference did not reach statistical significance (Burri et al., 2012). The only study focusing specifically on genital pain in queer women comes from a recently published abstract, which reported vulvovaginal pain in 32 sexual minority women. The authors found that these women experienced significant distress related to their pain, which affected their sexual functioning but not their relationship satisfaction (Armstrong & Reissing, 2012).

Despite society's growing acceptance of lesbian, gay, bisexual, transgender, and queer individuals, many still experience homonegativity and heterosexism as barriers to accessing health care (Brotman, Ryan, Jalbert, & Rowe, 2002; Clift & Kirby, 2012), and many women will often not disclose their sexual identity for fear of negative treatment (Ponce, Cochran, Pizer, & Mays, 2010; van Dam, Koh, & Dibble, 2001). With regards to sexual health matters, these barriers may be even greater as queer women report experiencing excessive emotional stress if they believe a disease or symptom is linked to their sexual practices (Harrison & Silenzio, 1996). Armstrong and Reissing (2012) found that 22% of their sample of queer women with vulvovaginal pain indicated that they had experienced discrimination from their health care providers.

Genital Pain's Association With Relationship Quality

Genital pain has a detrimental effect on women's self-reported sexual functioning (Desrochers, Bergeron, Landry, & Jodoin, 2008; Fry, Crisp, & Beard, 1991), including problems with sexual desire, arousal, orgasm, and sexual satisfaction (e.g., Brauer, Laan, & ter Kuile, 2006; Danielsson, Sjoberg, & Wikman, 2000; Gates & Galask, 2001; Meana, Binik, Khalife, & Cohen, 1997; Reissing, Binik, Khalife, Cohen, & Amsel, 2003; Smith et al., 2013; Verit, Verit, & Yeni, 2006). However, recent research in this field indicates that partner characteristics, such as negative and solicitous responses, can influence pain intensity and the effect of pain on sexual functioning (Desrosiers et al., 2008; N. O. Rosen, Bergeron, Glowacka, Delisle, & Baxter, 2012; N. O. Rosen, Bergeron, Lambert, & Steben, 2013; N. O. Rosen, Bergeron, Leclerc, Lambert, & Steben, 2010). A recent study found that dyadic adjustment mediates the association between how women perceived their partners' negative and solicitous responses to pain and their sexual satisfaction (N. O. Rosen et al., 2013), such that the more adjusted a couple, the less of an effect negative and solicitous responses have on sexual functioning. The authors suggested that dyadic adjustment might determine the types of sexual activities that are part of the couple's sexual repertoire or how much the couple values the emotional benefits of intimacy (N. O. Rosen et al., 2013).

Dyadic adjustment, however, is a complex term encompassing numerous relationship variables and, as such, it is recommended that specific relationship variables involved in mediating the effects of pain on sexual functioning be explored (N. O. Rosen et al., 2013). Being in a mutually supportive relationship has been shown to be a protective factor against problems with sexual functioning in women with chronic pelvic pain (Randolph & Reddy, 2006). A couple's level of intimacy has also been shown to mediate the effects of pain on sexual functioning (Bois, Bergeron, Rosen, McDuff, & Gregoire, 2013; Stephenson & Meston, 2010). Specifically, Stephenson and Meston (2010) found that, for women with sexual pain, lower levels of sexual functioning were more likely to be associated with increased distress within less intimate relationships than in highly intimate relationships. Bois and colleagues (2013) found that greater sexual and relationship intimacy were associated with greater sexual functioning in women with vulvodynia, but not with pain intensity. Having strong relational and sexual intimacy may not change the experience of pain, but may help lessen the negative effect that vulvar pain can have on sexual experiences.

Given the effect of genital pain on sexual intimacy, such pain has been hypothesized to negatively affect a couple's relationship (Graziottin & Brotto, 2004). While some research has supported this hypothesis (e.g., Brauer, ter Kuile, Laan, & Trimbos, 2009; Smith & Pukall, 2014; White & Jantos, 1998), there is also evidence to suggest that relationships do not suffer when one partner has genital pain (Desrosiers et al., 2008; Smith et al., 2013; Van Lankveld, Weijenborg, & ter Kuile, 1996). A qualitative study found that relationships might be strengthened as a result of a partner's increased understanding and support (Sackett, Gates, Heckman-Stone, Kobus, & Galask, 2001). Better relationship adjustment has been found to predict lower intercourse-related pain scores (Meana, Binik, Khalife, & Cohen, 1998); however, more recent studies do not support this assertion (Desrosiers et al., 2008; Jodoin et al., 2008). Given the inconsistency of the association between relationship functioning and genital pain, it may be that relationship-specific qualities mediate the effect of pain on relationship functioning, as they do with sexual functioning. No

studies to date have investigated the role of relationship-specific qualities on mediating the effects of genital pain on relationship functioning.

Given the literature's tendency to focus on heterosexual samples when examining forms of genital pain, no research has examined how such pain may be associated with relationship outcomes for same-sex couples. Longitudinal research on same-sex and mixed-sex relationships shows that both types of relationships tend to operate on essentially the same principles and have equivocal outcomes in terms of satisfaction and stability (e.g., Blair, 2012; Blair & Holmberg, 2008; Gottman et al., 2003; Holmberg, Blair, & Phillips, 2010; Kurdek, 1991). Consequently, it would be logical to assume that if genital pain experienced by women in mixed-sex relationships affects their relationship well-being, the same would be true for women experiencing genital pain in same-sex relationships. However, the fact that women in same-sex relationships have been found to have more effective communication (Connolly & Sicola, 2005; Johnson, 1990; Littlefield, Lim, Canada, & Jennings, 2000; Metz, Rosser, & Strapko, 1994) may have important implications for the effect that genital pain has on a couple. Thus, greater communication about issues related to genital pain may foster empathy and understanding, ultimately mitigating the effect that pain has on sexual and relationship functioning. Communication plays an important role in a couple's sexual functioning (MacNeil & Byers, 1997); however, no studies to date have investigated the role of communication in the experience of genital pain and relationship and sexual functioning among women in same- and mixed-sex relationships.

Taken together, the research to date suggests that genital pain in queer women will likely go unreported or untreated, given that accessing treatment would require disclosing their sexual orientation to a health care provider. Furthermore, it would require the woman being comfortable describing sexual experiences and issues, which health care providers might also be embarrassed talking about (Hinchliff, Gott, & Galena, 2005). Given that many heterosexual women are reluctant to talk to their doctors about genital pain (Nguyen, Ecklund, Maclehose, Veasley, & Harlow, 2012; Nguyen, Turner, Rydell, Maclehose, & Harlow, 2013), this issue may be even more pronounced among queer women. However, the high levels of intimacy and communication, specifically among women in same-sex relationships, may be a protective factor with respect to relationship and sexual functioning.

Present Study

Before investigating the intricacies of how queer women might cope differently with genital pain, or whether they receive differing levels of medical care and attention, it is imperative to first assess the general characteristics of pelvic and vulvar pain in queer women in relation to what is already known about the experiences of such pain in heterosexual women. Thus, the aims of this study were (a) to determine the percentage of women of diverse self-identified sexual identities who report experiencing genital (i.e., vulvar or pelvic) pain and to compare pain presentations among these sexual identities; (b) to examine how genital pain affects relationship and sexual activities and whether this effect is similar across different identities; and (3) to determine how relationship-specific factors, namely communication and intimacy (love and trust) influence the associations between genital pain and its effect on relationship and sexual activities among heterosexual and queer women.

METHOD

Participants

A total of 1,144 women accessed an online survey about sexual functioning and relationships. The final sample used for analyses included 839 women after removing 61 women who were older than 45 years of age due to issues with outliers and 244 participants who did not provide sufficient data to be used in the current analyses. Women over 45 years of age were excluded to help reduce the number of women unwittingly experiencing pre-menopausal symptoms. This age cut-off is consistent with other literature of women's sexual functioning (e.g., Meston & Gorzalka, 1996; N. O. Rosen et al., 2012; N.O. Rosen et al., 2013). Participants who were removed were, on average, 5 years older than the participants kept in the sample, $t(-8.491)$, $p < .001$, $df = 1142$, and were less likely to report being in a relationship, $\chi^2(1) = 14.546$, $p < .001$.

Measures

The present study measured genital pain characteristics and the effect of pain on sexual and relationship functioning using self-report questions designed for the study. Standardized measures were used to examine the relationship qualities of communication and intimacy. Intimacy was measured by examining levels of love and trust.

Demographics

Participants provided general demographic information, including their age and relationship status. Participants were also asked to indicate their sexual identity (lesbian, gay, bisexual, straight) as well as the nature of their current relationship (same sex, mixed sex, or single).

Experiences of Genital Pain and Pain Characteristics

Participants were asked to indicate whether they experienced genital (i.e., genital, vulvar, or pelvic) pain on a regular basis. Participants who answered this question in the affirmative were then asked to rate the intensity of the pain on an 11-point scale ranging from 0 (*no pain at all*) to 10 (*worst pain ever*), indicate all the areas in which they felt the pain (at the vaginal opening, everywhere on the vulva, inside the vagina, in the pelvic or abdominal region), and whether they experienced pain in various situations (hereafter referred to as precipitators of pain). For each precipitator, participants indicated how often the pain occurred in the past 3 months. Participants responded whether the pain occurred, once per month, a few times per month, once per week, a few times per week or daily. Participants who noted that they felt pain during activities involving vaginal penetration were asked to indicate when the pain began (or worsened if present all the time) during the activities. Participants also indicated how much the pain interfered with daily activities as well as sexual activities on an 11-point scale ranging from 0 (*not at all*) to 10 (*totally*). Participants were asked whether they felt that their genital pain had negatively affected their overall relationship as well as the sexual aspects of their relationship. For participants who indicated that there was a negative effect, they were asked to rate how much the

pain had negatively affected their relationship and the sexual aspects of their relationship using an 11-point scale ranging from 0 (*no impact*) to 10 (*greatest impact imaginable*). Participants who experienced pain and were in a relationship were asked whether their genital/pelvic/vulvar pain has ever led them to consider ending their relationship with their partner. It is important to note that women were not asked about pain diagnoses and the purpose of this paper was not to capture a specific type of pain, rather, the experience of genital pain in general.

Dyadic Trust Scale (Larzelere & Huston, 1980)

This questionnaire measures trust in a close relationship. Eight items (e.g., "there are times when my partner cannot be trusted") are rated on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The authors of the scale reported a coefficient alpha reliability of .93, with item-total correlations ranging from .72 to .89 in a sample of dating, married, and divorced partners (Larzelere & Huston, 1980). The internal consistency in the present study was $\alpha = .90$.

Rubin Love Scale (Rubin, 1970)

This questionnaire measures the amount of romantic love expressed for a current partner. There are 13 items (e.g., "I would do almost anything for [my partner]") rated on a 7-point scale ranging from 1 (*not at all true/completely disagree*) to 7 (*definitely true/agree completely*). The authors of this scale found that the scale had a high internal consistency (.84 for women and .86 for men), similar to that found in the present study, $\alpha = .88$.

Communication Subscale of Evaluation and Nurturing Relationship Issues, Communication and Happiness Marital Satisfaction Scale (CSENRICH; Tzeng, 1993)

This questionnaire measures the level of communication within a given romantic relationship, and is a subscale of a larger marital inventory, the ENRICH. Ten items are rated on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The communication subscale has items such as "I am not happy about our communication and feel my partner does not understand me." The authors of the scale reported high internal reliability (.82; Fowers & Olson, 1989), similar to that found in the present study, $\alpha = .87$.

Procedures

Participants were recruited using ads on Facebook, word of mouth, postings on online websites that advertise online studies, and flyers posted around the university to participate in an online survey about sexual experiences. The advertisements indicated that the study had been approved by the General Research Ethics Board of Queen's University. To increase the number of queer women within the sample, a specific emphasis was placed on recruiting queer women through the use of targeted Facebook advertising and announcements sent to relevant listservs and websites. Advertisements for the study directed participants to an online letter of information and consent

form. Participants who consented to participate were then forwarded on to the survey, which took approximately 45 min to 1 hr to complete.

Recent literature has emphasized the importance of investigating the experiences of queer women through the lenses of both identity and behavior because sexual identity and sexual behavior (i.e., with whom women have sex) are not always congruent (Blair, 2012; Diamond, 2000; Vrangalova & Savin-Williams, 2010). Thus, potential group differences were examined based on self-reported sexual identity as well as relationship type. Consequently, the results presented are from the same full sample of 839 women, but these women were classified differently in the analyses based on (a) how they self-identified and (b) the nature of their relationship (mixed sex or same sex).Participation was open to women older than 18 years of age of any sexual orientation or identity and who were able to complete an online survey in English.

At the survey's completion, participants were directed to a debriefing page, which provided resources for anyone dealing with genital pain, and gave participants the opportunity to enter a prize draw for $100.00. Participants were informed that they could withdraw from the survey at any point by clicking on a "withdraw" button, which would then forward them to the debriefing and prize draw page.

RESULTS

Data Considerations

Before conducting analyses, the data were examined for missing values, normality, and outliers. If variables violated the normality assumption, appropriate transformations were performed until normality was obtained. Relevant analyses were run first using the original and then the transformed variables. Where the pattern of results remained the same regardless of transformations, the results of the nontransformed analyses were reported for ease of interpretation.

Self-reported sexual identity has been shown to not always be the most relevant factor in examining group differences (Badgett, 2009). Consequently, the present study compared participants based not only on their self-reported sexual identity (lesbian, bisexual, heterosexual), but also on the nature of their relationship and the gender of their partner (i.e., same-sex vs. mixed-sex relationship status).

Sample Characteristics

Participants were, on average, 25 years old ($SD = 6.8$) and the majority (77.4%) reported being in a relationship (17.2% same sex, 60.2% mixed sex). On average, participants in relationships had been with their partners for 3 years ($SD = 3.7$). The majority of participants identified as heterosexual (42.7%), with 36.8% identifying as bisexual and 20.5% identifying as lesbian. Participants were predominantly White (83.8%) and were primarily from the United States (38.2%), Canada (28.5%), the United Kingdom (14%), or Australia (11.1%), and most had some level of higher education (88.4%). Of those in relationships, a minority described their relationship as casual (8.3%), with the remainder using descriptors such as seriously dating (27.5%), considering marriage (28.6%), or in a long-term committed relationship such as marriage, common-law/domestic partnership or a civil union (30.9%). Demographics are displayed in Table 1.

TABLE 1
Demographics of Women, by Relationship Type and Sexual Identity

		Relationship type				*Sexual identity*			
	Full sample (N = *839*)	*Mixed sex* (n = *505*)	*Same sex* (n = *144*)	*Single* (n = *190*)	*Post hoc results*	*Heterosexual* (n = *358*)	*Bisexual* (n = *309*)	*Lesbian* (n = *172*)	*Post hoc results*
Age, *M* (*SD*)	25 (6.8)	24.9 (6.2)	26.6 (7.6)*	25.21 (6.8)	Same Sex > Mixed Sex*	25.1 (6.6)	24.4 (6.1)	27.1** (8)	Lesbian > Bisexual* Lesbian > Heterosexual**
Relationship length	3 (3.7)	3.29 (3.9)	2.3** (3.1)	n/a		3.4 (3.7)	3.1 (3.8)	2.4 (3.4)	
White	83.8%	84.2%	85.3%	81.4%		83.3%	83.4%	85.3%	
Heterosexual	42.7%	61.6%	0%	24.7%					
Bisexual	36.8%	36.8%	21.5%	48.4%					
Lesbian	20.5%	1.6%	78.5%	26.8%					

*$p < .05$. **$p < .01$.

Relationship Type vs. Sexual Identity

To examine the relative contributions of relationship type (i.e., gender of partner) and self-identified sexual identity (heterosexual, bisexual, lesbian), we conducted analyses to compare outcome variables on each of these factors.

Reporting Genital Pain

A chi-square test was conducted between sexual identity and the experience of genital pain on a regular basis. All expected cell frequencies were greater than five. There was a statistically significant association between sexual identity and reporting regular genital pain, $\chi^2(2)=14.276$, $p = .001$. There was a weak association between sexual identity and experience of genital pain, Cramér's V = .13, $p = .001$. Bisexuals were most likely to report genital pain (38.5%), followed by heterosexual women (28.2%) and lesbian women (23.3%).

A chi-square test was conducted between relationship type and experience of genital pain on a regular basis. All expected cell frequencies were greater than five. There was a statistically significant association between relationship type and reporting regular genital pain, $\chi^2(2) = 10.486$, $p = .005$. There was a weak association between relationship type and experience of genital pain, Cramér's V = .12, $p = .005$. Women in mixed-sex relationships were most likely to report pain (34.7%), followed by single women (28.9%) and women in same-sex relationships (20.8%).

To more closely examine the potential differences in the reporting of pain as a function of sexual identity versus relationship type, participants were reclassified according to both their sexual identity and their relationship type. This classification was most relevant for bisexual women, who could either be classified as bisexual women in same-sex relationships, bisexual women in mixed-sex relationships or single bisexual women. Of the 309 bisexual women, 31 were in a same-sex relationship, 186 were in a mixed-sex relationship and 92 were single. A series of chi-square analyses were run to compare the following groups on the reporting of pain: bisexual women across relationship type, bisexual and heterosexual women in mixed-sex relationships, and bisexual and lesbian women in same-sex relationships.

Comparing Among Bisexual Women

A chi-square test was conducted between relationship type of bisexual women and experience of genital pain on a regular basis. All expected cell frequencies were greater than five. There was a statistically significant association between relationship type and reporting regular genital pain, $\chi^2(2) = 10.253, p = .006$. There was a weak association between relationship type and experience of genital pain, Cramér's V = .18, $p = .006$. Bisexual women in mixed-sex relationships were most likely to report pain (45.7%), followed by single women (28.3%) and women in same-sex relationships (25.8%).

Comparing Among Women in Mixed-Sex Relationships

There were only 5 lesbian identified women in mixed-sex relationships, so a comparison was made between bisexual and heterosexual women in mixed-sex relationships. A chi-square

test was conducted between sexual identity and experience of genital pain on a regular basis for women in mixed-sex relationships. All expected cell frequencies were greater than five. There was a statistically significant association between sexual identity and reporting regular genital pain, $\chi^2(2) = 16.795, p < .001$. There was a weak association between relationship type and experience of genital pain, Cramér's V = .18, $p < .001$. Bisexual women in mixed-sex relationships were more likely to report pain (45.7%) compared to heterosexual women in mixed-sex relationships (27.7%).

Comparing Among Women in Same-Sex Relationships

There were no heterosexual women in same-sex relationships, so a comparison was made between bisexual and lesbian women in same-sex relationships. A chi-square test was conducted between sexual identity and experience of genital pain on a regular basis for women in same-sex relationships. All expected cell frequencies were greater than five. There was no statistically significant association between sexual identity and reporting regular genital pain, $\chi^2(2) = .525$, $p = .469$. Of the lesbian women in same-sex relationships, 19.8% reported experiencing pain on a regular basis compared with 25.8% of the bisexual women in same-sex relationships, but this difference was not statistically significant. The sample sizes for this comparison, however, were the most disparate, with 116 lesbian women in same-sex relationships compared to 31 bisexual women in same-sex relationships.

Genital Pain Characteristics

Of the 839 women in the sample, 260 (31%) reported regularly experiencing genital pain. Of those 260 women, 30 (12%) were in a same-sex relationship, 175 (67%) were in a mixed-sex relationship, and 55 (21%) were single. Of those same 260 women regularly experiencing genital pain, 101 (39%) identified as heterosexual, 40 (15%) identified as lesbian and 119 (46%) identified as bisexual.

Pain Location

The most commonly reported location of pain was inside the vagina ($n = 127$, 48%), followed by the pelvic or abdominal region ($n = 116$, 45%), and at the vaginal opening ($n = 102$, 39%). Fifty-five (21%) participants indicated that they experienced pain everywhere on the vulva.

Chi square analyses were conducted to determine whether pain locations varied as a function of sexual identity or relationship type. No significant differences were found between any of the groups for any of the four locations, *p*s >.134, .134, and –.815.

Precipitators of Pain

The most common context in which participants, across all groups, experienced pain was during vaginal penetration, followed by gynecological examinations. Table 2 presents the percentage of participants (with pain) who reported experiencing pain for each of the precipitators listed; group differences are also shown. Group differences by relationship type were found for three precipitators: tampon insertion, self-finger insertion, and masturbating alone. Women in same-sex

TABLE 2
Precipitators of Pain for All Women Who Experience Pain

			Relationship type[b]								*Sexual identity*[b]							
			Same sex (n = 30)		*Mixed sex (n = 175)*		*Single (n = 55)*				*Heterosexual (n = 101)*		*Lesbian (n = 40)*		*Bisexual (n = 119)*			
Precipitator[a]	n	%	n	%	n	%	n	%	χ^2	p	n	%	n	%	n	%	χ^2	p
During vaginal penetration	235	88.5	20	76.9	151	91.5	37	84.1	5.743	.57	89	92.7	81.2	81.2	93	86.9	3.590	.166
Gynecological examinations	224	64.7	16	69.6	105	65.6	24	58.5	0.981	.612	57	61.3	22	71.0	66	66.0	1.081	.582
Partner finger insertion	231	63.6	17	63.0	102	63.4	28	65.1	0.052	.975	60	63.8	24	72.7	63	60.6	1.601	.449
Urinating after vaginal penetration	236	55.5	15	55.6	93	56.4	23	52.3	0.235	.889	51	53.1	19	57.6	61	57.0	0.376	.829
Your partner stimulating you manually	237	54.9	15	53.6	88	53.0	27	62.8	1.340	.512	46	47.4	20/33	60.6	64	59.8	3.667	.160
Inserting a tampon	232	53	20	71.4	75	46.6	28	65.1	9.013*	.011	41	43.6	22	66.7	60	57.1	6.520*	.038
Removing a tampon	232	50.9	15	53.6	79	49.1	24	55.8	0.711	.701	43	45.7	23	69.7	52	49.5	5.744	.057
Friction or pressure from clothing	237	34.2	9	32.1	53	32.1	19	43.2	1.947	.378	34	35.4	9	27.3	38	35.2	0.814	.666
Self finger insertion	226	30.5	7	25.9	42	26.9	20	46.5	6.405*	.041	24	27.3	14	42.4	31	29.5	2.692	.260
My pain is not related to any specific activity	209	29.7	7	25.9	46	31.5	9	25.0	0.794	.672	24	28.6	8	25.8	30	31.9	0.497	.780

Sitting for long periods of time	238	28.6	7/28	25.0	45	27.1	16	36.4	1.658	.436	30	30.9	9/33	27.3	29	26.9	0.448	.779
Masturbating alone	234	25.6	9	32.1	34	21.0	17	38.6	6.358*	.042	21	22.6	12	36.4	27	25.0	2.470	.291
Urinating in general	238	20.2	6	21.4	34	20.5	8	18.2	0.146	.482	17	17.5	9	27.3	22	20.4	1.458	
Your partner stimulating you orally	232	13.8	3	11.1	22	13.6	7	16.3	0.393	.822	14	14.9	6	18.2	12	11.4	1.124	.570
Sporting activity	232	12.1	5	17.9	18	11.0	5	12.2	1.046	.593	14	14.9	6	18.8	8	7.5	4.095	.129

[a]Number of women in total pain sample who provided a response to precipitator question.

[b]Not all women in pain sample provided a response to all precipitator questions; therefore, percentages will not equal 100.

*$p < .05$.

relationships were more likely to report that tampon insertion was a trigger for their pain, followed by single women and then women in mixed-sex relationships. Women in mixed-sex relationships were more likely to report self-finger insertion and masturbating alone as a trigger for their pain, followed by single women and then women in same-sex relationships. Group differences by sexual identity were only found for tampon insertion, such that a greater percentage of lesbian women indicated that inserting a tampon was painful.

Participants were asked to indicate the frequency with which each precipitator had been associated with pain in the past 3 months. A general frequency score was calculated by taking the mean of all frequencies reported across precipitators, excluding any precipitators that participants indicated had never been associated with their pain. Possible scores ranged from 1 to 5 (once per month – daily), with 5 indicating greatest frequency. No group differences in frequency of pain were found as a function of sexual identity, but significant group differences were found as a function of relationship type, $F(2, 3.67) = 3.983$, $p = .020$. Tukey's post hoc analyses indicated that same-sex women reported a lower frequency than women in mixed-sex relationships, $p = .016$ (same-sex mean = 1.72, mixed-sex mean = 2.3, single mean = 2.1). No significant differences were found between women in mixed-sex relationships and single women.

Timing and Duration of Pain

Penetration was associated with pain for 88.5% of the women who reported genital pain. No group differences were found in women's reports of when the pain started in relation to penetration. Pain associated with penetration most commonly began, across all relationship types and sexual identities, when the finger, penis, or object was fully inserted and began thrusting (41.2%), followed closely by the initial insertion of the finger, penis, or object (39.5%). Only 8% of the women who experienced pain reported that vaginal penetration did not lead to an increase in pain and 11% reported that the pain was only present after penetration. Only 9.7% of the sample reported that pain was always present, regardless of any precipitating activities, and there were no group differences in reporting constant pain.

Pain Intensity

On average, women reported a mean intensity of pain of 5.24 ($SD = 1.95$) on an 11-point scale ranging from 0 (*no pain*) to 10 (*the worst pain imaginable*). Two one-way analyses of variance were conducted to determine whether average pain intensity differed as a function of sexual identity or relationship type. No significant differences were found as a function of sexual identity, $F(2, 2.05) = .535$, $p = .586$. Average pain intensity was significantly different between different relationship types, $F(2, 15.767) = 4.243$, $p < .05$, $\omega^2 = .03$. Pain intensity was highest in single women ($M = 5.59$, $SD = 1.81$), followed by women in mixed-sex relationships ($M = 5.3$, $SD = 1.99$) and women in same-sex relationships ($M = 4.29$, $SD = 1.92$). Tukey post hoc analysis revealed that the mean increase from women in same-sex relationships to mixed-sex relationships (1.02, 95% CI [.09, 1.94]) was statistically significant ($p = .028$), as was as the increase from women in same-sex relationships to single women (1.3, 95% CI [.21, 2.4], $p = .015$). Mean pain intensity levels did not differ significantly between single women and women in mixed-sex relationships.

The Effect of Genital Pain on Relationship Well-Being and Sexual Relationship

Overall, 46.8% of participants with pain indicated that their pain had a negative effect on their relationship in general, and 64.2% reported that their pain affected the sexual aspects of their relationship. Although more than half the sample with pain reported that the pain affected the sexual aspects of their relationship, only 11.8% reported that they had considered ending their relationship as a result of the pain. No significant differences were found between women with different relationship types or sexual identities for reporting that pain had a negative effect on the relationship in general or that they had considered ending the relationship. There was a significant difference among sexual identities, but not relationship types, when examining reports of the pain's effect on sexual aspects of the relationship, with heterosexual women being most likely to report that the pain had an effect (75.3%), followed by bisexual women (56.6%) and then lesbians (52.2%), $\chi^2(2) = 7.865$, $p = .02$, Cramér's V = .205.

Participants who indicated that their pain had an effect on their relationship in general and/or their sexual relationship were asked to report, on an 11-point scale ranging from 0 (*not at all*) to 10 (*totally*), how much the pain affected their relationship or sexual aspects of their relationship. The average rating of the pain's effect on relationships in general and on the sexual aspects of the relationship was 5.4 ($SD = 2.72$) and 5.92 ($SD = 2.70$), respectively. There were no significant differences in these impact ratings as a function of relationship type or sexual identity.

The Effect of Genital Pain on Sexual and Daily Activities

Participants reported that their genital pain experiences interfered significantly more with their sexual activities or sex life ($M = 5.55$, $SD = 2.91$) than with their daily activities ($M = 2.21$, $SD = 2.42$), 95% CI [2.934, 3.738], $t(237) = 16.362$, $p < .001$, $d = 1.06$. No significant differences were found in reports of interference with daily or sexual activities as a function of relationship type or sexual identity ($ps > .05$).

Relationship Factors

To examine how relationship qualities such as love, trust, and communication may be associated with women's reports of their genital pain having an effect on their general or sexual relationship, we conducted a series of correlational analyses. Spearman's rank-order correlations are reported here using the nontransformed data, although there was a similar pattern of results using Pearson's correlation coefficients with transformed data. Because only participants who indicated that their pain had an effect on either their relationship in general or their sexual relationship were asked to rate the extent of the effect, sample sizes are smaller for the following analyses. Tables 3 and 4 present the correlations among relationship variables (love, trust, and communication) and reported effect of pain on the relationship as well as the correlations with reported effect on women's sexual relationship. Trust was negatively correlated with the effect of pain on both the relationship and sexual relationship for all relationship types and identities, with the exception of the effect of pain on the sexual relationship for bisexual women. As for love and communication, with respect to the effect of pain on the relationship, for women in mixed-sex

TABLE 3
Spearman's Rank-Order Correlations With Impact on Relationship

		Relationship type		*Sexual identity*		
	Full pain sample (N = *81*)	*Mixed sex* (n = *61*)	*Same sex* (n = *15*)	*Heterosexual* (n = *39*)	*Lesbian* (n = *13*)	*Bisexual* (n = *29*)
Love	−.249*	−.260*	−.165	−.087	−.374	−.389*
Trust	−.453***	−.424***	−.467	−.449***	−.610*	−.395*
Communication	−.325***	−.215	−.725***	−.104	−.682*	−.395*

*$p < .05$. **$p < .01$. ***$p < .005$.

relationships, love was negatively correlated. For women in same-sex relationships and lesbian women, communication was negatively correlated. For bisexual women, love and communication were negatively correlated with the effect of pain on the relationship. As for the effect of pain on the sexual relationship, for women in same-sex relationships and lesbian women, communication was negatively correlated.

No significant differences were found in the strength of associations between variables as a function of relationship type or sexual identity, based on using Fisher's Z calculations.

DISCUSSION

The present study aimed to determine whether queer women experience genital pain and, if so, whether their experiences align with those of heterosexual women or whether they differ as a function of relationship type (gender of partner) and/or sexual identity. The study also investigated how relationship qualities, namely communication, trust, and love, affect the experience of pain and how those qualities might mitigate the perceived effect of pain on sexual and relational functioning. The results of this study indicate that queer women experience genital pain and this is evident regardless of how queer identity is defined (i.e., self-identified sexual identity and/or gender of partner). Furthermore, specific patterns of association were found for different sexual identities, such that for queer women, higher communication scores were associated with lower levels of perceived effect of pain on sexual and relationship functioning while, for heterosexual

TABLE 4
Spearman's Rank-Order Correlations With Impact on Sexual Relationship

		Relationship type		*Sexual identity*		
	Full pain sample (N = *116*)	*Mixed sex* (n = *101*)	*Same sex* (n = *15*)	*Heterosexual* (n = *59*)	*Lesbian* (n = *11*)	*Bisexual* (n = *46*)
Love	−.020	0.35	−.325	.105	−.528	−.057
Trust	−.314***	−.275***	−.616*	−.419***	−.702*	−.113
Communication	−.237*	−.179	−.622*	−.237	−.763**	−.102

*$p < .05$. **$p < .01$. ***$p < .005$.

women, greater love was associated with lower levels of perceived effect of pain on sexual and relationship functioning.

Pain Presentation and Characteristics

The first goal of the study was to describe the presentation of genital pain in queer individuals and compare this to heterosexual women. It was found that women in relationships with men or those who have the potential to be in a relationship with a man (i.e., those in a mixed-sex relationship and those who self-identify as heterosexual or bisexual) reported more pain than the women who were less likely to be in a relationship with a man (i.e., those in a same-sex relationship and those who self-identify as lesbian). To further investigate the potential links between pain and either sexual identity or relationship type, additional analyses were conducted by dividing the sample of bisexual women by their relationship type. These analyses indicated that bisexual women in same-sex relationships are no more likely to report experiencing pain than lesbian women in same-sex relationships. In contrast, bisexual women in mixed-sex relationships were more likely to report pain than heterosexual women in mixed-sex relationships. As might be expected, bisexual women in mixed-sex relationships were more likely to report experiences of pain than bisexual women in same-sex relationships. Taken together, these three findings suggest that experiences of pain may be more closely linked to being in a mixed-sex relationship than to sexual identity. However, the experience of ever having had a same-sex sexual encounter (as is likely true for most bisexual women), may alter a woman's perception of pain, making a bisexual woman more likely to report pain than a woman who has never experienced a sexual encounter with another woman. This possibility is supported by previous research that has found many women in mixed-sex relationships who experience pain are unaware of the fact that their pain is abnormal or unnecessary, consequently leading many to suffer in silence (Ayling & Ussher, 2008; Nguyen et al., 2013). If women in same-sex relationships are less likely to experience pain, perhaps the experience of relatively pain-free sex with women gives bisexual women in mixed-sex relationships a different standard by which to judge their sexual pain experiences. Further research with larger samples of bisexual women in both types of relationships would be needed in order to more definitively address this possibility.

Overall, the group differences by relationship type are consistent with previous literature (Alanko et al., 2012; Breyer et al., 2010; Nichols, 2004; Schick et al., 2012) and may speak to the prominence of dyspareunia as a symptom of genital pain and the wide-held notion of penile-vaginal intercourse as the "coital imperative" in heterosexual relationships (Jackson, 1984, p. 44). Furthermore, these findings may be reflective of the nature of sexual repertoires in same-sex relationships whereby the emphasis is on sexual acts other than vaginal penetration (Bailey, Farquhar, Owen, & Whittaker, 2003; Holmberg & Blair, 2009).

Nevertheless, the presentation and experience of genital pain for queer women appears to be very similar to that experienced by heterosexual women. For all women who experienced pain, the most commonly reported location was inside the vagina and vaginal penetration was the most common precipitator. There were some differences between groups in terms of precipitators of pain. Women in same-sex relationships and women who self-identified as lesbian were more likely to report that tampon insertion was a trigger for pain, while women in mixed-sex relationships were more likely to report that self-finger insertion and masturbating alone triggered their pain.

For queer women who experience pain, tampon insertion may be the only penetrative activity that is difficult to avoid.

The finding that women in relationships with men are more likely to report self-finger insertion and masturbation as triggers of pain may be indicative of differing perceptions and frequency of masturbation. Indeed, research has found that queer women orgasm more frequently through masturbation and desire autoerotic behavior more than heterosexual women (Coleman, Hoon, & Hoon, 1983; Holmberg & Blair, 2009). Heterosexual women tend to have more negative views of masturbation and some heterosexual women believe that it is only something that a man should be doing to them (Hogarth & Ingham, 2009). Some heterosexual women believe that masturbation threatens their male partner's presumed power and dominance in the bedroom (Fahs & Frank, 2013). Although we did not examine rates of masturbation in the present study, it may be that the queer women in our sample were more likely to masturbate than heterosexual women (Gerressu, Mercer, Graham, Wellings, & Johnson, 2008; Laumann, Gagnon, Michael, & Michaels, 1994; Traeen, Stigum, & Soorensen, 2002). Thus, a greater and more positive exposure to masturbation in queer women may lead to less pain, whereas self-stimulation may be experienced as more painful for heterosexual women who masturbate less and who view masturbation more negatively.

For all women who experienced pain associated with vaginal penetration, the pain most commonly began when the finger, penis or object was fully inserted and began thrusting. Pain intensity was highest in single women and women in mixed-sex relationships. It is not surprising that women in mixed-sex relationships experience more intense pain given the importance of penile-vaginal penetration in these relationships; however, it is less clear as to why single women in this sample also experienced the most intense pain. One reason may be that experiencing intense pain leads women to avoid entering relationships or contributes to the dissolution of relationships.

As would be expected, women reported that genital pain interfered more with their sex life and sexual activities than with their daily activities. More heterosexual women reported that pain had a negative effect on sexual aspects of their relationship than lesbians and bisexuals, but there was no difference in how much pain affected their overall relationship. Regardless of sexual identity, more than half of the women that experienced pain reported that it affected sexual aspects of their relationship and almost half of the women reported that it affected their overall relationship. This pattern of findings is consistent with the literature in both heterosexual and queer samples, in that pain affects sexual, but not necessarily overall relationship, functioning (Armstrong & Reissing, 2012; Brauer et al., 2009; Desrochers et al., 2008; Fry, Beard, Crisp, & McGuigan, 1997; Smith et al., 2013; White & Jantos, 1998).

Relationship Qualities and Their Effect on Genital Pain

The second goal of this study was to investigate how relationship qualities affect the effect of pain on sexual aspects of the relationship and the overall perceptions of relationship well-being and whether this varies as a function of sexual identity and/or relationship type. The positive association between communication and a reduction of the effect of pain on both the overall and sexual aspects of the relationship was consistently found in women in same-sex relationships and women who self-identified as lesbian; however, this effect was not found for bisexual and heterosexual women, nor for women in mixed-sex relationships. Thus, the better

the communication between two women in a romantic relationship, the less of an effect genital pain was reported to have on the overall relationship and sexual aspects of the relationship. Better communication was also associated with a reduction of the effect of pain on sexual functioning in women who identified as bisexual. However, it is important to note that there were no differences in the levels of communication between groups.

One reason why communication may be associated with pain's effect in some same-sex relationships but not mixed-sex relationships may be related to the different sexual scripts that exist for each type of relationship. Qualitative research done with heterosexual women who experience vulvar pain suggests that there are certain scripts used in the negotiation of sexual activity within sexual relationships (e.g., Ayling & Ussher, 2008; Hinchliff, Gott, & Wylie, 2012). No studies to date have examined how women negotiate experiences of pain within same-sex relationships. However, it may be that women in same-sex relationships experience less psychological distress surrounding their pain given that women in same-sex relationships place less emphasis on vaginal penetration than women in mixed-sex relationships and tend to spend longer amounts of time on individual sexual encounters (thereby allowing more time for physical arousal and lubrication; Blair & Pukall, 2014). In contrast, women in mixed-sex relationships may still very much rely upon the coital imperative of penile-vaginal intercourse (Ayling & Ussher, 2008) and have reported much briefer durations of sexual encounters, which may reduce levels of arousal and lubrication (Blair & Pukall, 2014). Heterosexual women experiencing vulvar pain report that they do not feel like "adequate," "normal," or "authentic" women because they cannot engage in "real sex," ubiquitously described as penile-vaginal intercourse (Ayling & Ussher, 2008; Hinchliff et al., 2012; Kaler, 2006).

That communication was also found to be associated with a reduction in the perceived effect of pain on sexual functioning in bisexual women might suggest that the experience of *ever* being intimate with a woman (i.e., lesbian, in a same-sex relationship, or bisexual) may be important in influencing the role that communication plays. Perhaps being in a sexual relationship with another woman helps a woman with genital pain to realize the possibility of greater flexibility in sexual scripts. Thus, a bisexual woman may carry over her experiences of communicating with women about sex into her relationships with men. It might be that the sexual scripts of a mixed-sex relationship involving a bisexual woman are more open to modification, allowing for a host of sexual activities to be explored—especially those that do not involve penile-vaginal penetration. If bisexual women are using communication skills obtained through their relationships with women to modify sexual scripts with men, then communication training may be used to improve the malleability of sexual scripts in heterosexual relationships. That is, if penile-vaginal intercourse can be up for discussion/debate in mixed-sex relationships, then perhaps this becomes important in reducing pain's perceived effect on sexual and relationship functioning. Indeed, this strategy is often used in the clinical setting, whereby couples affected by genital pain are encouraged to explore and adopt pain-free sexual activities. Of course, it is always possible that there is something inherent to a nonheterosexual identity that influences how a person perceives pain or the effect of pain on their relationships, although it would seem unlikely that an identity label could, alone, without the influence of associated experiences and behavior, be responsible for the group differences identified in this study.

There were no differences in the levels of communication between groups, so it is not that women in same-sex relationships are communicating better than the women in mixed-sex relationships. Rather, the communication of women in same-sex relationships appears to matters

more when it comes to the effect their pain is having on their relationships. Although there were no differences in the level of communication between women in mixed-sex and same-sex relationships, there may be specific features of communication between two women that can help lessen the effect of pain. Ayling and Ussher (2008) conducted a qualitative study of the experiences of heterosexual women with vulvar pain. One participant in their study, "Sophia," sheds light on what the experience of a sexual minority woman with vulvar pain might be like. Sophia reports that she and her male partner have open communication through an egalitarian relational discourse (Ayling & Ussher, 2008), a specific discourse that is often adopted in lesbian relationships (Eldridge & Gilbert, 1990). It is interesting that Sophia was the only woman in the study who reported feeling adequate as a woman and sexual partner.

Empathy may be another area specific to communication in female same-sex couples that can influence the effect of pain. Lesbian couples in a long-term relationship have described the ability to empathize with their partner as important to their relationship satisfaction (Connolly & Sicola, 2005). With regards to women's health issues, lesbians and women in same-sex relationships are at an advantage in being able to empathize with their partner because they usually share more similar bodies. Ussher and Perz (2008) reported on the experience of premenstrual syndrome (PMS) within lesbian relationships. They found that in comparison to heterosexual women's reports of partner rejection and pathologization of PMS (Ussher, Perz, & Mooney-Somers, 2007), the majority of lesbian women reported that their partner was responsive to their needs in a nonjudgmental and empathetic manner, even if they themselves did not experience PMS (Ussher & Perz, 2008). Thus, just by the fact that they too have a vulva, female partners of women with genital pain may be in a better position to empathize than male partners.

The present study also investigated the role of intimacy on mitigating the effect of pain on sexual and relationship functioning. Specifically, two aspects of intimacy were selected, love and trust (Berscheid, 1985; Hatfield & Rapson, 1993; Hook, Gerstein, Detterich, & Gridley, 2003; Prager, 1995). The results suggest that across all identities and relationship types, trust is the relationship quality most consistently associated with participants reporting that their pain had less of an effect on the sexual aspects of their relationship as well as their overall relationship well-being. As many women with vulvar pain and dyspareunia report fears of infidelity and abandonment (Donaldson & Meana, 2011; Svedhem, Eckert, & Wijma, 2013), being in a trusting relationship not only helps protects against these fears, but can also foster open communication to speak about issues that might otherwise be embarrassing and avoided. In fact, women in Svedam and colleagues' (2013) study on genital pain reported that being in relationship where they felt secure made it easier to deal with the issue of pain affecting their sex life.

The only positive and significant association between love and a perceived lesser effect of pain on relationship functioning was found among women in mixed-sex relationships and bisexual women. One possible explanation for this finding is that when a man and a woman are in a loving relationship, the emotional benefits of intimacy are more valued than the sexual benefits, such that the coital imperative is no longer an imperative. Alternatively, the coital imperative may still exist in loving mixed-sex relationships, but the love may outweigh the pain. A heterosexual woman who experiences genital pain and is in a loving relationship with a man may think, "I suffer because I love you, and my suffering is lessened because of how much I love you." Qualitative research done with heterosexual women shows that they privilege their partner's need for intercourse because that is what a "good" woman/girlfriend/wife does (Ayling & Ussher, 2008). Moreover, women in previous qualitative studies spoke about engaging in intercourse regardless of pain

because they felt guilty and did not want their partners to feel rejected (Ayling & Ussher, 2008; Hinchliff et al., 2012). For women in same-sex relationships, love within a relationship was not associated with how much the pain was perceived to impact relationship and sexual functioning (i.e., "I love you, but that does not mean I'm going to put up with our sex life being painful"). For women in same-sex relationships, there are no sexual scripts that necessitate vaginal penetration and, because of this, neither woman may to feel required to endure sexual pain out of a sense of love for their partner. Regardless of whether there is love in the relationship, sexual scripts in same-sex relationships can easily be modified to reduce the amount of pain a woman feels, without compromising pleasure.

That sexual minority women experience genital pain that is comparable to the pain experienced by heterosexual women suggests that their pain is likely to come from the same underlying conditions and supports the move to disentangle pain during sexual intercourse from vulvar pain, for the conceptualization of vulvodynia (e.g., Binik, 2005). This separation has resulted in the perspective that vulvar pain is the primary issue in women with vulvodynia and that dyspareunia can be one of many symptoms (Pukall, Payne, Binik, & Khalife, 2003).

The results of this study have clinical implications for the treatment of genital pain, specifically the importance of incorporating couples therapy to improve specific relationship qualities that may help reduce the effect of pain. This is consistent with current clinical recommendations for the treatment of genital pain (e.g., Pukall, Smith, & Chamberlain, 2007). Though levels of communication were comparable between groups, communication was found to be associated with a perceived lesser impact of pain on sexual and relationship functioning among queer women. Thus, it is not that women in same-sex relationships are communicating better than the men and women in mixed-sex relationships, but that the communication in same-sex relationships is potentially leading to more positive outcomes with respect to the pain's effect on sexual and relational functioning. Accordingly, the experiences of the current sample would suggest that it is not the quality of communication that requires modification within mixed-sex relationships, but rather the content of the communication. However, other research (Smith & Pukall, 2014) has found that men in relationships with women experiencing vulvar pain do demonstrate poorer sexual communication, so it is possible that it is both the quality and content of communication within mixed-sex relationships that requires attention. One area that would benefit from modified communication is the sexual scripts of mixed-sex couples, specifically with an aim towards making these sexual scripts more flexible. Across all relationship types and sexual identities, trust was the most consistent relationship quality found to be associated with a perception of pain having less of an effect on sexual and relationship functioning. Thus, improving trust within relationships is another key area that can be targeted through couple's therapy.

Strengths and Limitations

This study has a number of strengths. This was one of the first studies to investigate the characteristics of genital pain in a queer population. Furthermore, sexuality was defined both by self-identified identity and relationship type. Recent research describing the fluidity of female sexuality (Diamond, 2008), suggests that many women may have the capacity for romantic relationships with women and may have shifting identifies as a heterosexual, bisexual and/or lesbian throughout their lifetime (Armstrong & Reissing, 2013). Furthermore, there may not always be congruence between a woman's self-identified sexual identity and the gender of her partner

(Diamond, 2000; Vrangalova & Savin-Williams, 2010). The study also went beyond simply characterizing the pain by also including relationship variables that may be at play in reducing the effect of pain. Given that genital pain typically occurs within intimate relationships, recent research in this area has begun to look at interpersonal factors involved in the experience of pain (e.g., Desrosiers et al., 2008; N. O. Rosen et al., 2012; N. O. Rosen et al., 2013) and the present study adds to this growing body of literature.

Of course, there are also limitations to the study's methodology and sample. All data are self-report and therefore may be subject to response biases. Furthermore, the sample is composed of self-selected volunteers and, thus, generalizability is limited. The recruitment of queer women was aided by the wide variety of websites, mailing lists and magazines directly aimed at individuals in same-sex relationships. Therefore, women in same-sex relationships and self-identified queer women may be somewhat more focused on their sexual identity or on relationship issues than either the general population of queer women or this study's sample of heterosexual women and women in mixed-sex relationships. Last, there were uneven numbers of women in each group and small cell sizes for queer women with pain. A more population-based study may be needed to determine whether the prevalence of pain may differ greatly in queer women. Additionally future research should more closely examine whether sexual orientation or relationship type might be associated with differences in experiences of specific types of genital pain, such as vulvar pain versus pelvic pain.

Future Research

Future research should investigate the link between communication and the effect of genital pain. The qualitative research available suggests that many heterosexual women use avoidance strategies and instead will make excuses as to why they do not want to engage in sexual activity rather than directly refusing the advances of their partner (Hinchliff et al., 2012). One study found that young, partnered, heterosexual women who may not be in stable, loving relationships, reported that they would pretend not to feel the pain, rather than try to explain their pain to a partner (Elmerstig, Wijma, & Bertero, 2008). These women also reported not telling their male partner about the pain because they were afraid of making him feel guilty, foolish, inadequate or offended (Elmerstig et al., 2008). Although no research to date has looked at these attitudes and behaviors in same-sex relationships, it is unlikely that they are the same because of the lack of emphasis on penile-vaginal penetration in same-sex relationships. It is also important for future research to more closely examine the mechanisms through which communication in same-sex couples results in a reduced effect of genital pain on sexual and relationship functioning. For example, are female same-sex couples communicating about different topics? Are they communicating in a unique way that somehow directly influences their experience of pain? A more thorough understanding of how women in mixed-sex and same-sex relationships communicate with their partners about their genital pain will provide greater opportunities for intervention.

Future research should also seek to further understand the contributing roles of one's identity versus the gender of one's partner when determining precisely which relationship factors are most likely to mitigate the effect of genital pain on relationship and sexual functioning. In other words, does genital pain have less of an effect on relationship and sexual functioning for women because

they are in relationships with other women, or because they self-identify as queer? While one's sexual identity, in and of itself, is unlikely to determine how physical pain is experienced within a relationship, the experience of *being* a queer woman and of being in a same-sex relationship is likely to have a significant influence on how genital pain experiences are perceived and navigated within a relationship. Unlike sexual scripts in mixed-sex relationships which center around the "coital imperative" of penile-vaginal intercourse, the sexual scripts for same-sex couples are defined by their flexibility, and in fact by their very lack of existence. The lack of such rigid sexual scripts within same-sex relationships means that all sexual activity is up for negotiation and discussion, likely making it that much easier for women in same-sex relationships to simply forgo sexual activities that result in pain. Future research should more specifically examine how the inherent flexibility within same-sex sexuality might play a crucial role in reducing the effect of genital pain on relationship and sexual functioning for women in same-sex relationships.

Last, future research should investigate other variables that may play a role in reducing the effect of pain on sexual and relationship functioning. The results of this study indicate that there are differences in the relationship variables that affect heterosexual and queer women's experience of pain, which we speculate is likely attributable to the varied levels of emphasis placed on vaginal penetration. Future research should continue to look at what other factors may be at play in both heterosexual and queer women. Although the results of this study indicate that the presentation of pain is similar in all women, the ways in which the pain affects the woman can differ depending on her sexual identity or the gender of her partner.

Summary

The results of the present study indicate that, like heterosexual women, queer women also experience genital pain and the presentation of this pain is very similar between the two groups of women. Where heterosexual women and queer women differ in terms of the experience of pain, is how different aspects of their relationship can lessen the effect of the pain on their relationship and sexual functioning. Communication was a relationship quality that was specific to queer women in terms of mitigating the perceived effect of pain on sexual and relationship functioning, such that the more satisfied women in same-sex relationships were with their levels of communication, the less their pain was reported to affect their sexual and relationship functioning. Although women in mixed-sex relationships reported similar levels of communication with their partners, there was no relationship between their levels of communication and the perceived effect of their pain on sexual and relationship functioning. Across all sexual identities, trust was an important relationship quality that lessened the effect of pain on both relationship and sexual functioning and love was most important in reducing the effect of pain on the relationships of heterosexual women. The findings of this study have important implications for the treatment of genital pain disorders in all women.

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