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Preliminary Research Article

Development and Feasibility of a Group-Based Therapeutic Yoga Program for Women with Chronic Pelvic Pain

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Abstract

Objective. To develop a group-based therapeutic yoga program for women with chronic pelvic pain (CPP) and explore the effects of this program on pain severity, sexual function, and well-being.

Methods. A yoga therapy program for CPP was developed by a multidisciplinary panel of clinicians, researchers, and yoga consultants. Women reporting moderate to severe pelvic pain for at least six months were recruited into a single-arm trial. Participants attended twice weekly group classes focusing on Iyengar-based yoga techniques and were instructed to practice yoga at home an hour a week for six weeks. Participants self-rated the severity of their pelvic pain using daily logs. The impact of participants' pain on everyday activities, emotional well-being, and sexual function was assessed using an Impact of Pelvic Pain (IPP) questionnaire. Sexual function was further assessed using the Sexual Health Outcomes in Women Questionnaire (SHOW-Q).

Results. Among the 16 participants (age range = 31–64 years), average ratings of the severity of pain "at its worst," "at its best," and "on average" decreased by 29%, 32%, and 34%, respectively, from start to six weeks ($P < 0.05$ for all). Women demonstrated improvements in scores on IPP subscales for daily activities (1.8 ± 0.7 to 0.9 ± 0.7, $P < 0.001$), emotional well-being (1.7 ± 0.9 to 0.9 ± 0.7, $P = 0.005$), and sexual function (1.9 ± 1.1 to 1.0 ± 0.9, $P = 0.04$). Scores on the SHOW-Q "pelvic problem interference" scale also improved over six weeks (53 ± 23 to 27 ± 23, $P = 0.002$).

Conclusions. Findings provide preliminary evidence of the feasibility of teaching women with CPP to practice yoga to self-manage pain and improve quality of life and sexual function.

Key Words. Chronic Pelvic Pain; Yoga; Integrative Medicine

Introduction

Between 5% and 20% of women experience chronic or recurrent pelvic pain that interferes with their everyday

activities, emotions, and relationships [1]. Despite the impact of chronic pelvic pain (CPP) on women's functioning and well-being, there are few treatments for this clinical syndrome with demonstrated evidence of effectiveness. Currently, most nonpharmacologic therapies used for CPP, including pelvic floor therapy, psychotherapy, and neuromodulation, rely on costly, one-on-one visits or procedures with specialized health care practitioners [2]. As a result, alternate treatment strategies are needed that are not only effective, but also more accessible to women with CPP in the community.

One challenge in managing CPP is the multifactorial and heterogeneous nature of this syndrome, in which a single, organic cause is not often identified despite overlap with multiple gynecologic, gastrointestinal, urologic, or general medical conditions [3–5]. A wide variety of physiologic mechanisms have been implicated in the pathophysiology of CPP, including development of pelvic floor hypertonicity and dysfunction, alterations in autonomic nervous system function, changes in central pain sensitization, and psychological stress and/or trauma [6–8].

In addition to seeking treatment from health care professionals, many women suffering from CPP report using complementary interventions to manage their symptoms [9,10]. One complementary behavioral intervention that has been used to manage other functional somatic or chronic regional pain syndromes and may offer benefit for women with CPP is yoga [11,12]. When taught in a way that emphasizes awareness and control over individual muscle groups, yoga can be used to help women identify and stretch their pelvic floor muscles in order to improve pelvic pain associated with pelvic floor hypertonicity. Yoga techniques that promote deep breathing and relaxation can also reduce anxiety and perceived stress as well as influence autonomic nervous system balance as potential modulators of CPP [13–17]. In contrast to most traditional clinical behavioral therapies, yoga can also be practiced outside of the health care setting, thus offering a potential community-based self-management strategy for CPP.

Nevertheless, most yoga techniques practiced by women in the community have not been evaluated for efficacy or safety among those with pelvic pain. Some yoga practices that have the potential to induce pelvic floor muscle strain may actually precipitate or worsen pelvic pain in women rather than improving it. Before yoga can be recommended as a self-management strategy for women with CPP, clinicians and researchers must identify yoga techniques that are clinically effective and safe for this population.

Methods

The Program to Overcome Pelvic Pain with Yoga (POPPY) project was designed to 1) develop a group-based, therapeutic yoga program for women with CPP and 2) examine preliminary changes in pain severity, sexual function, and well-being among a sample of women with CPP practicing these techniques for six weeks. The content and structure of the program were developed by a panel of expert yoga consultants working in conjunction with clinicians and researchers at the University of California, San Francisco. Expert yoga consultants had at least 10 years of general experience teaching yoga in the community as well as specific experience teaching yoga to women with genitourinary conditions (Leslie Howard, Baxter Bell, and Nina Gold). Clinicians and researchers collectively contributed clinical and scientific expertise in urogynecology, general gynecology, sexual medicine, and integrative health (Alison Huang, Leslee Subak, Priscilla Abercrombie, Tami Rowen, and Maria Chao).

The study program was designed to provide formal instruction in selected yoga techniques with the potential to improve physiologic and psychological contributors to CPP in women, while also promoting safety and tolerability in the target population. Program techniques were based on Iyengar-style yoga, a form of Hatha yoga that has been employed successfully in prior studies of yoga for other clinical indications [18,19] and includes multiple features likely to maximize efficacy and safety in patients with chronic pain, such as 1) emphasis on careful anatomical alignment during practice of yoga postures, 2) incorporation of props to minimize risk of injury and accommodate those with reduced flexibility or mobility, and 3) focus on mindful awareness during practice of postures rather than rapid cycling through postures.

The program emphasized 12 postures widely used in Hatha yoga practice: Supta Padagusthasana (Reclining Big Toe Pose), Ardha Ananda Balasana (Half Happy Baby Pose), Adho Mukha Svanasana (Downward Facing Dog Pose), Viparita Karani (Legs Up the Wall Pose), Salamba Setu Bandhasana (Supported Bridge Pose), Supta Baddha Konasana (Reclining Bound Angle Pose), Balasana (Child's Pose), Baddha Konasana (Butterfly or Bound Angle Pose), Prasarita Padottanasana (Wide-Legged Forward Bend Pose), Anjaneyasana (Low Lunge Pose; two variations), and Savasana (Corpse Pose). Some postures such as Supta Padagusthasana, Ardha Ananda Balasana, and Adho Mukha Svanasana were directed at fostering awareness, control, or gentle stretching of the pelvic floor, whereas other postures such as Supta Baddha Konasana and Balasana were primarily included in order to promote mindfulness, deep breathing, and relaxation. The overall yoga program was designed to maximize efficacy in reducing pelvic floor dysfunction as well as improve underlying stress and anxiety, while still being grounded in techniques common to Iyengar yoga at large.

To pilot-test the program, women age 21 years and older reporting pelvic pain for at least six months were recruited from the San Francisco Bay area using a combination of newspaper advertisements, community mailings, and clinic flyers. Women were eligible if the average self-reported severity of their pelvic pain was at

least 4 out of 10 on a seven-day pain log and their pain did not occur exclusively during the time of their menses (i.e., women could not have dysmenorrhea only). Because a secondary goal of the project was to assess changes in sexual function, participants also had to report that their pain was directly or indirectly having an adverse effect on their interest in or ability to enjoy sexual activity. Eligible women were also required to undergo clinical evaluation for their pelvic pain by a health care professional, including a pelvic exam to rule out reversible causes of pelvic or genital pain unlikely to respond to yoga (e.g., pelvic infection, urogenital atrophy). Participants also had to meet the minimum mobility requirements of being able to walk two blocks on level ground (assessed by self-report using a standardized question about functional capacity [20]) and get from a supine to standing position without assistance.

Exclusion criteria included pregnancy or pelvic surgery in the past six months; any prior pelvic cancer or radiation; use of formal psychological or behavioral therapies for pain (cognitive behavioral therapy, pelvic floor rehabilitation therapy) within the past three months; or initiation or dose escalation of antidepressant, opioid, anticonvulsant, or anxiolytic medications within the past three months (women on stable doses of medications were still eligible). Participants also could not already be engaged in formal yoga instruction or classes. Informed consent was obtained from all participants before enrollment, with approval from the institutional review board of the University of California, San Francisco.

Eligible women first attended a 90-minute group orientation introducing them to the principles of Iyengar yoga, the general anatomy of the pelvis and lower extremity, and the props and postures featured in the program. They subsequently attended twice weekly 90-minute group classes for six weeks, led by an Iyengar-trained yoga instructor who had at least two years of teaching yoga in the community and had completed POPPY program–specific training with one of the expert yoga consultants. Classes were held at a community yoga center in San Francisco or in an activity room on the campus of the University of California, San Francisco. Following a program-specific guide, the instructor guided participants in practicing specific yoga postures, calling attention to ways in which postures could improve pelvic floor function, teaching women to adapt postures to accommodate physical limitations, and encouraging them to avoid habits that might worsen their pelvic pain (e.g., straining pelvic floor muscles). The instructor gradually introduced different yoga postures as classes progressed, with the goal of making participants familiar with all 12 postures featured in the program over six weeks. Participants were also asked to practice at home an additional hour per week using a written manual including pictures and descriptions of each posture. The recommended amount of time spent in each posture varied from 10 to 15 minutes for more relaxing postures such as Savasana and Supta Baddha Konasana to 30 to 60 seconds for more physically demanding postures such as Adho Mukha Svanasana or Salamba Setu Bandhasana. Instructors also emphasized practice of deep, diaphragmatic breathing across all postures. Each participant was given a yoga mat, belt, and two blocks for their exclusive use.

Adherence to group yoga classes and home practice sessions during the program was monitored using class attendance logs and home practice diaries. At the six-week visit, participants self-rated their confidence in their ability to successfully execute each of the yoga postures featured in the study program on a five-point Likert scale ("not at all," "slightly," "moderately," "very," or "extremely" confident) using a Yoga Posture Self-Efficacy Questionnaire modeled after a measure used in prior clinical yoga studies [21]. For a more objective measure of participants' success in learning study techniques, a study yoga consultant (Ms. Howard) observed participants during the last yoga class and rated each participant's ability to perform postures during that class on a five-point Likert scale ("not at all," "slightly," "moderately," "very," or "extremely" successful). Additionally, a close-out satisfaction questionnaire asked women to indicate at the six-week visit how easy it would be to continue practicing yoga to improve their pain on a five-point Likert scale ranging from "very difficult" to "very easy."

Pain severity was assessed using a daily pain log in which participants numerically rated the severity of their pelvic pain "at its worst," "at its best," and "on average" during the past 24 hours (0 = least to 10 = worst). Sexual function was assessed at baseline and six weeks using the Sexual Health Outcomes in Women Questionnaire (SHOW-Q), which includes four multi-item subscales (satisfaction, orgasm, desire, and pelvic problems interference) validated in women with pelvic problems [22]. Women were also asked to keep a daily log of their sexual activity throughout the study; this diary was modeled after an existing diary designed to assess frequency of sexual activity in postmenopausal women [23].

In the absence of any previously validated measure of the impact of pelvic pain on other areas of functioning or well-being, the investigative team also developed a structured 16-item Impact of Pelvic Pain (IPP) questionnaire (Appendix) by modifying a previously validated questionnaire of the quality-of-life impact of menopausal vaginal symptoms [24]. This IPP measure included three multi-item domain scales addressing impact of pelvic pain on 1) activities of daily living, 2) emotional well-being, and 3) sexual functioning. Internal consistency reliability of the subscales was confirmed by Cronbach's alphas ranging from 0.58 to 0.91.

To monitor safety, coordinators asked participants at a three-week telephone call and during a six-week clinic visit about any negative changes in their health. Any reported negative changes were recorded as adverse events on standardized forms, regardless of whether they were attributable to study participation. Participants

were also encouraged to call study staff to report any negative changes in their health between scheduled calls or visits.

Changes in participants' ratings of the severity of their pelvic pain "at its worst," "at its best," and "on average" from baseline to six weeks and to 12 weeks were examined using paired *t* tests. Changes in scores on SHOW-Q sexual function domain scales and IPP impact scales from baseline to six weeks and to 12 weeks were also assessed using paired *t* tests.

Results

A total of 16 women participated in one of two six-week series of yoga classes (February–March, or October–November, 2015). Mean age was 46 ± 12 years (range = 31–64 years), and five women (31%) were racial/ethnic minorities (Table 1). Over 30% described their overall health as "fair" or "poor." Comorbid conditions such as endometriosis, uterine leiomyomata, and urinary incontinence were common. Three women (19%) were using narcotic medications, and three (19%) reported using antidepressant medications. Ten (63%) reported experiencing chronic or recurrent pelvic pain for at least five years.

All women who enrolled in POPPY completed the six-week series of therapeutic yoga classes. Ten (62%) attended all 12 group classes, and 14 (88%) attended at least 10 classes (Table 2). Thirteen (81%) reported practicing yoga at home for at least one additional hour per week on their home practice logs. After six weeks, 10 (63%) were at least moderately confident about their ability to perform all featured yoga postures, and an expert consultant judged 14 (88%) to be at least moderately successful in performing all postures in the last yoga class. Twelve participants (75%) felt it would be "moderately" or "very" easy to continue to practice yoga for their pain.

From baseline to six weeks, average pelvic pain severity "at its worst," "at its best," and "on average" decreased by 29%, 32%, and 34%, respectively (Table 3). Of the 14 women who provided follow-up data at 12 weeks, average improvements in pain severity scores persisted or improved further at 12 weeks (Table 3).

Compared with baseline, participants demonstrated significant improvements in scores on the SHOW-Q "pelvic problem interference with sex" scale and "orgasm frequency and quality" scale at six weeks (Table 3). Improvements in the "pelvic problem interference with sex" scale persisted at 12 weeks, and additional significant improvements in the SHOW-Q "sexual desire" and "satisfaction with sex" scales were also observed at 12 weeks. Scores on the IPP "activities of daily living," "emotional well-being," and "sexual functioning" scales also improved from baseline to six weeks (Table 3). Improvements on the IPP "sexual functioning" scale continued to be significant at 12 weeks.

Table 1 Baseline characteristics of participants

	Participants (N = 16)
Demographic history	
Age, y	46.1 (±11.7)
Race/ethnicity	
Non-Latina white	9 (56)
Black/African American	1 (6)
Asian/Asian American	3 (19)
Latina white	1 (6)
Other or unknown	2 (12)
Married	3 (19)
College educated	12 (75)
Medical history	
Self-reported general health	
Excellent or very good	4 (25)
Good	7 (44)
Fair or poor	5 (31)
Endometriosis*	6 (38)
Irritable bowel syndrome*	4 (25)
Uterine leiomyoma*	5 (31)
Abdominal myofascial pain*	2 (13)
Interstitial cystitis*	1 (6)
Urinary incontinence	7 44)
Fecal incontinence	1 (6)
Health-related habits	
Current smoker	1 (6)
At least weekly alcohol use	8 (50)
Physical exam measures	
Body mass index, kg/m^2	27.8 (±9.4)
Systolic blood pressure, mmHg	116.8 (±13.5)
Diastolic blood pressure, mmHg	74.9 (±12.5)
Current medication use	
Narcotic/opioid medications	3 (19)
Antidepressant medications	3 (19)
Benzodiazepine sedatives	1 (6)
Pelvic pain history	
Duration of pain	
6 mo–1 y	1 (6)
1–2 y	2 (13)
2–5 y	3 (19)
5+ y	10 (63)
Context of pain	
Worsening during menstrual period†	8 (50)
Occurring during sexual activity	13 (81)

Data are presented as mean (± standard deviation) or as a number (%).

*Assessed by participant report of prior physician-diagnosed conditions.

†Participants were excluded if they reported that their pain occurred exclusively during menses.

Nine adverse events were reported during the course of the study, including upper respiratory infection, joint pain, endometriosis flare, colon polyp, syncope (outside

Table 2 Yoga adherence and self-efficacy outcomes

	Participants (N = 16)
Adherence to group classes and home practice*	
Attended all 12 group classes	10 (63)
Attended at least 10 group classes	14 (88)
Completed all 6 recommended home practice hours	13 (81)
Self-reported confidence in performing yoga postures†	
Very/extremely confident about ability to perform all postures	5 (31)
At least moderately confident about ability to perform postures	10 (63)
Independent assessment of participants' performance‡	
Rated by expert consultant as being very/extremely successful in executing all postures	7 (44)
Rated by expert consultant as being at least moderately successful in executing all postures	14 (88)
Self-assessment of ease of continuing to practice yoga to improve incontinence§	
Very easy to continue practice	5 (31)
Moderately easy to continue practice	8 (50)
Neither difficult nor easy to continue practice	3 (19)
Moderately or very difficult to continue practice	0 (0)

Data are presented as number (%).
*Adherence to group classes was assessed by attendance logs kept by the class instructors, while adherence to home yoga practice was assessed by diaries in which participants recorded the dates and times of their home yoga practice.
†Participants rated their confidence in performing each of the 12 core postures featured in the yoga therapy program on a five-point Likert scale after six weeks (not at all, slightly, moderately, very, or extremely).
‡An expert yoga consultant visited the final group yoga class of the program and independently rated each participant's success in performing eight core postures on a five-point Likert scale (not at all, slightly, moderately, very, or extremely).
§Participants in the yoga therapy group were asked to indicate how easy it would be to continue practicing yoga to improve their pelvic pain at their final (six-week) study visit.

of class), gastrointestinal symptoms, and renal stones, none of which were judged by the investigators to be directly caused by study participation.

Discussion

This report summarizes the development and preliminary evaluation of a new group-based therapeutic yoga program for women with CPP. All women recruited to field-test the program completed six weeks of yoga classes, and three quarters indicated at the end of six weeks that it would be at least moderately easy to continue to practice yoga to manage their pelvic pain. Furthermore, participants demonstrated moderate reductions in pelvic pain severity as well as improvements in multiple domains of functioning and well-being over six weeks, with many of these improvements persisting another six weeks after the end of the yoga intervention.

Chronic pelvic pain is a complex condition that can be challenging to manage with existing pharmacologic, behavioral, or surgical treatments. While more rigorous evaluation of the efficacy and safety of traditional clinical therapies is needed, complementary interventions such as yoga may provide an opportunity for patients to supplement traditional clinical treatment through group classes or home practice outside of the health care setting or empower them to self-manage their symptoms without medications or surgery. As yoga can be taught at many locations without continuous in-person supervision by health care providers, it offers a potentially cost-effective, community-based management strategy for CPP, provided that it can be taught in a standardized way and with appropriate attention to patients' clinical and safety needs.

Limitations of this preliminary research include its single-arm design and small sample size, which may have resulted in more unstable estimates of changes in pain severity, sexual function, or well-being. Participants were followed for only six weeks after the end of the yoga intervention, limiting our ability to assess long-term effects. The participants who field-tested the program were a heterogeneous sample of women who had undergone clinical evaluation involving a pelvic exam but not invasive evaluation such as laparoscopy. All participants were recruited from the San Francisco Bay area, which has higher penetration of complementary interventions than some other parts of the United States or other countries; however, no participants in POPPY were already engaged in formal yoga instruction or practice. Additionally, the IPP measure used to assess changes in impact of pelvic pain on functioning and well-being, although adapted from a previously validated measure and found to have good internal consistency reliability, has not undergone detailed psychometric evaluation.

Nevertheless, these findings provide promising evidence of the feasibility of teaching women with CPP to practice yoga to self-manage their pain as well as preliminary evidence of potential benefits of this yoga program on pain severity, sexual function, and well-being. Further evaluation in a larger sample using a rigorous, controlled design that involves either a time-and-attention control or compares yoga with other existing treatment

Table 3 Changes in pelvic pain severity, sexual function, and condition-specific quality of life from baseline to 6 and 12 weeks

Score	Baseline	6 wk	Change over 6 wk*	$P^{\dagger}$	12 Week	Change over 12 wk*	$P^{\ddagger}$
Self-reported severity of pelvic pain rating[§]							
Pain at its best	3.1 (±1.4)	2.0 (±1.6)	−0.8 (±1.3)	0.043	1.7 (1.8)	−1.2 (1.5)	0.015
Pain at its worst	6.2 (±1.4)	4.3 (±2.1)	−1.6 (±1.3)	<0.001	3.6 (2.0)	−2.3 (1.8)	<0.001
Pain on average	4.8 (±1.6)	3.2 (±2.3)	−1.4 (±1.4)	0.003	2.6 (1.7)	−1.9 (1.5)	<0.001
Sexual Health Outcomes in Women Questionnaire[¶] scores							
Pelvic problem interference with sex	53.6 (23.4)	27.1 (22.5)	−26.6 (19.5)	<0.001	23.1 (23.9)	−26.3 (24.7)	0.002
Orgasm frequency and quality	49.2 (29.7)	71.4 (27.4)	22.9 (24.3)	0.015	77.7 (20.0)	17.3 (23.4)	0.099
Sexual desire or interest	27.3 (21.9)	40.9 (26.4)	13.5 (27.3)	0.066	40.4 (30.4)	18.9 (28.7)	0.035
Satisfaction with sex	35.2 (30.7)	55.5 (35.1)	20.3 (39.5)	0.057	63.5 (30.0)	26.9 (34.6)	0.016
Impact of Pelvic Pain Questionnaire[‖] scores							
Daily activities	1.8 (0.7)	0.9 (0.7)	−0.9 (0.9)	<0.001	1.3 (0.8)	−0.5 (1.1)	0.090
Emotional well-being	1.7 (0.9)	0.9 (0.7)	−0.8 (0.9)	0.005	0.9 (0.8)	−0.6 (1.0)	0.055
Sexual function	1.9 (1.1)	1.0 (0.9)	−0.9 (1.6)	0.042	1.0 (1.0)	−1.1 (1.2)	0.006

Baseline, six-week, and 12-week outcomes data are presented as mean rating or score (±standard deviation).

*Changes in outcomes were calculated for all 16 participants for six-week outcomes, and for 13 participants for 12-week outcomes; follow-up data were missing for three participants at 12 weeks.

†*P* values were derived from paired t tests comparing baseline and six-week outcomes.

‡*P* values were derived from paired t-tests compared baseline and 12-week outcomes.

§Pain severity was assessed by daily pain logs in which participants recorded the severity of their pain at its best, at its worst, and on average over a seven-day period.

¶Scores on each of the Sexual Health Outcomes in Women Questionnaire domain scales range from 0 to 100; higher scores indicate greater pelvic problem interference, orgasm frequency and quality, sexual desire or interest, and satisfaction with sex, respectively.

‖Scores on the Impact of Pelvic Pain questionnaire range from 0 to 4, with higher scores indicating greater negative impact of pelvic pain on the relevant domain.

strategies for CPP may be indicated to confirm the efficacy and tolerability of group-based yoga therapy for this challenging syndrome and assess for differences in efficacy among individuals with different types of CPP. Further research may also be indicated to evaluate potential mechanisms of treatment effects, including changes in underlying perceived stress, autonomic nervous system balance, or pelvic floor hypertonicity. If found to be effective and well-tolerated, group yoga therapy may provide a viable way for women with CPP to self-manage their pain outside of the health care setting, with the support of others suffering from the same condition. As such, it has the potential to augment the clinical care provided by health care practitioners and provide an alternative for patients who are unable to tolerate traditional clinical therapies.

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APPENDIX

We are interested in understanding the impact of your pelvic pain on your day-to-day life. For each question below, please check the answer that best describes how your activities, relationships, and feelings have been affected by your pain during the past two weeks.

Part A. During the past two weeks, how much has your pelvic or genital pain made it uncomfortable or interfered with your ability to:

1. Participate in physical activity or exercise?	○ Not at all	○ A little bit	○ Moderately	○ Quite a bit	○ Extremely
2. Wear the clothing or underwear you want?	○ Not at all	○ A little bit	○ Moderately	○ Quite a bit	○ Extremely
3. Use the toilet or wipe yourself after using the toilet?	○ Not at all	○ A little bit	○ Moderately	○ Quite a bit	○ Extremely
4. Sit for more than an hour?	○ Not at all	○ A little bit	○ Moderately	○ Quite a bit	○ Extremely

Part B. During the past two weeks, how often has your pelvic or genital pain caused you to feel:

5. Depressed or down?	○ Never	○ Rarely	○ Sometimes	○ Fairly often	○ Very often
6. Embarrassed?	○ Never	○ Rarely	○ Sometimes	○ Fairly often	○ Very often
7. Frustrated or resentful?	○ Never	○ Rarely	○ Sometimes	○ Fairly often	○ Very often
8. Bad about yourself?	○ Never	○ Rarely	○ Sometimes	○ Fairly often	○ Very often

Part C. The following questions ask about the impact of your pelvic or genital pain on vaginal sexual intercourse as well as other types of sexual activity such as self-stimulation or masturbation. During the past two weeks, has your pelvic or genital pain affected:

9. Your desire or interest in having sexual intercourse or other types of sexual activity (including self-stimulation or masturbation)?	○ Not at all	○ A little bit	○ Moderately	○ Quite a bit	○ Extremely
10. How frequently you had sexual intercourse or other types of sexual activity (including self-stimulation or masturbation)?	○ Not at all	○ A little bit	○ Moderately	○ Quite a bit	○ Extremely
11. Your ability to become aroused during sexual activity (including self-stimulation or masturbation)?	○ Not at all	○ A little bit	○ Moderately	○ Quite a bit	○ Extremely
	○ Not applicable—I have not had sexual activity of any kind recently				
12. Your ability to be spontaneous about sexual activity (including self-stimulation and masturbation)?	○ Not at all	○ A little bit	○ Moderately	○ Quite a bit	○ Extremely

(continued)

○ Not applicable—I have not had sexual activity of any kind recently

13. Your ability to relax and enjoy sexual activity (including self-stimulation or masturbation)? ○ Not at all ○ A little bit ○ Moderately ○ Quite a bit ○ Extremely

○ Not applicable—I have not had sexual activity of any kind recently

14. The amount of pleasure you experienced during sexual activity (including self-stimulation or masturbation)? ○ Not at all ○ A little bit ○ Moderately ○ Quite a bit ○ Extremely

○ Not applicable—I have not had sexual activity of any kind recently

15. Your desire or interest in being in a sexual relationship? ○ Not at all ○ A little bit ○ Moderately ○ Quite a bit ○ Extremely

16. Your overall satisfaction with your sex life? ○ Not at all ○ A little bit ○ Moderately ○ Quite a bit ○ Extremely