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An International Survey of Commonly Used Interventions for Management of Pelvic Pain

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Abstract

Background: Pelvic pain (PP) is a debilitating condition that is challenging to manage. Despite differences in suspected etiologies of different PP conditions, common clinical signs and symptoms make it appropriate to group these diagnoses. The presence of neuro-musculoskeletal impairments in PP suggests that physical therapists are ideally situated to be included as part of the health care team managing this condition; however, little information is available to guide physical therapist management of PP.

Objectives: As a first step to developing management guidelines, we sought to determine common interventions currently used by physical therapists to manage PP.

Study Design: Descriptive survey.

Methods: A modified Delphi approach was used to identify broad categories of interventions that were then used to build a survey. Purposeful selection with snowball recruiting methods was used to collect responses from practitioners. Frequency data were collected for survey responses. Chi-square analysis determined associations among responses based on practitioner training.

Results: A total of 984 responses from 17 different countries were analyzed. The primary responses were from physical therapists in the USA and Canada. The majority of respondents were board-certified clinical specialists. More than 80% of physical therapist respondents indicated that they “frequently used” education, exercise, and manual therapy for patients with PP. The most common interventions considered effective but not frequently used were cognitive-behavioral therapy, dry needling, acupuncture, topical medications, and internal pelvic manual therapy techniques. Geographical differences in patterns of usespecific manual therapy and exercise interventions were noted. Differences were also noted on the basis of the levels of advanced postprofessional training.

Conclusion: Physical therapists routinely use education, manual therapy, and exercise to manage pelvic pain conditions.

Keywords

pelvic pain; physiotherapy; rehabilitation; treatment

INTRODUCTION

Persistent pelvic pain (PP) is a debilitating, costly condition described as a “clinical nightmare”¹ with primary care prevalence estimates comparable to low back pain, migraine, and asthma.² The direct annual costs of physician visits alone related to PP are estimated to exceed \$167 million.³ Individuals with PP report sleep disturbances, depression, anxiety, and limitations in physical mobility.^{4,5} The multifactorial etiology of pelvic pain contributes to the challenge of its clinical management. Pelvic pain is not limited to women. Male pelvic pain has received increasing attention over the last decade due to links between pelvic floor muscle involvement with a variety of conditions that affect men, including chronic prostatitis, testicular pain, and male sexual pain.^{6–9}

Despite differences in suspected etiologies of different pelvic pain medical diagnoses (ie, endometriosis, vulvodynia, prostatitis, painful bladder syndrome, and pelvic inflammatory disease, for example), the overlap of clinical elements of individuals with PP makes it appropriate to group these diagnoses under the umbrella term “pelvic pain.” These clinical elements include pain with intercourse (dyspareunia),^{8,10–12} pain during menstruation for women (dysmenorrhea),^{13,14} pain during ejaculation,^{15,16} and myofascial pain of the pelvic floor muscles and soft tissue.^{7,9,10,17,18}

The presence of neuro-musculoskeletal impairments in pelvic pain suggests that physical therapists (PTs) are ideally situated to be included as part of the health care team managing this condition. But what current information is guiding PT management of pelvic pain? Studies exist that support some PT–delivered interventions for pelvic pain, including manual therapy^{19–21} and exercise,^{22,23} but no consensus exists for these interventions. A 2007 survey by Hartmann et al²² reported on the interventions used by PTs to manage vulvodynia, a common pelvic pain condition. Their survey of PTs indicated that 68% of surveyed therapists agreed on 9 treatment modalities. All of these modalities focused on manual therapy and exercise of the PFMs and pelvic girdle, dietary modifications, and biomechanical correction of affected joints.

Advanced training for PTs in pelvic pain is not routinely included in entry-level PT education, despite the development of guidelines relevant to pelvic health education for PT trainees.²⁴ Thus, postprofessional continuing education courses serve as the primary mechanism to guide conservative management of patients with pelvic pain to provide advanced training for physical therapy professionals. Several guidelines related to pelvic pain management exist; however, these were developed by physician groups (including the European Association of Urology, Royal College of Obstetricians and Gynecologists, and Society of Obstetricians and Gynecologists, for example) but do not include the information necessary for PT management of pelvic pain, including recommendations for PT delivered examination, evaluation, and treatment interventions.

To our knowledge, only one publication has evaluated the type of interventions most commonly used by PTs for pelvic pain, and that was specific to one subtype of vulvodynia.²² Over the last 20 years, a growing awareness in the PT profession about recognition and management of this condition. Identifying what treatments PTs are using to manage pelvic

pain is relevant and timely given the growing numbers of PTs practicing in this area and educational courses offering training in this area. Consequently, we sought to determine the commonly used interventions currently used in the practice of PTs/physiotherapists treating pelvic pain.

METHODS

Recruitment Strategy

The survey was developed by members of the Pelvic Pain Clinical Practice Guideline Workgroup in consultation with the American Physical Therapy Association (APTA) Section on Women's Health (SOWH) and APTA Academy of Orthopedic Physical Therapy. The workgroup consists of PTs from the USA, Canada, and Australia and members from medicine and clinical psychology. The primary goal of the survey was to identify intervention strategies frequently used by practitioners to manage patients with pelvic pain disorders. In addition, participants responded to a question about interventions thought to be effective but not frequently used. In addition to information regarding the type and country of training, additional questions probed advanced training including formal postprofessional education and certification in areas of specialty practice. The intervention list was developed using a modified Delphi process that included 5 licensed PTs—2 board certified by the American Board of Physical Therapy Specialties (ABPTS) in women's health physical therapy, and 2 with PhDs in Rehabilitation Science. Common interventions used of any type were listed and then grouped into broad categories by consensus. For example, cycling, walking, running, or swimming was all grouped into the category "Exercise—aerobic training." This process resulted in 20 different categories of interventions.

We used a nonprobability purposeful sampling design. After approval of the survey, an invitation to participate was sent via e-mail to members of the APTA SOWH and the Orthopedic Section. Announcements were placed on Twitter, Facebook, e-mail blasts managed by the SoWH, and snowball recruiting via word of mouth and/or sharing of these announcements.

The survey was built using Google docs and managed by SoWH. The survey was opened on January 18, 2017, and closed on March 15, 2017. One reminder e-mail was sent during this time period. The University of Florida Institutional Review Board-02 reviewed the study and designated it as "exempt."

Data Reduction

Data were cleaned and formatted in Microsoft Excel and analyzed using IBM SPSS version 24 (IBM, Armonk, NY). Frequency data were calculated for responses to each question and inspected for duplicate responses. Several questions did not use forced-choice responses (eg, Country of practice). All responses that were similar were grouped, inspected by 2 authors, and recoded for clarity (eg, usa, USA, US, United States, etc, were all recoded as USA). If a country was not indicated but a state, province, or territory was listed, the country of origin for that state was entered (eg, Queensland was recoded as Australia).

New variables were created for subsequent analysis. For country, given the small numbers of respondents from several countries, data were pooled and recoded to indicate USA, Canada, and 'Other.' Similarly, a dichotomous variable was developed indicating the presence or absence of advanced clinical training of any type.

Data Analysis

Summary tables were created of frequency data for country of origin, practice, training, and interventions. Associations between training and interventions were examined using chi-square and nonparametric rank-based tests and tests of differences in medians. Statistically significant findings were considered those for which the type 1 error rate was 5% or less.

RESULTS

Summary of Participant Training

Nine hundred eighty-four (984) survey responses from 17 different countries were received. The majority of responses (95%) were from PTs and therefore, the analyses included in this section correspond only with physiotherapist responses (n=933). The number of respondents from other professions is listed in Table 1 . The primary countries in which respondents practiced were the USA and Canada. Similarly, most respondents completed professional and advanced clinical training in the USA or Canada. Summary data are shown in Table 2.

Specialized Training

For PTs, only 38% were not certified as clinical specialists by the ABPTS. The remainder had at least 1 ABPTS Board Certification, and 13.6% had 2 or more. The most common board certification was as an Orthopedic Clinical Specialist (OCS) followed by Women's Clinical Specialist (WCS). Six percent of respondents completed residency training as the path to Board Certification. One percent of PTs completed fellowship training in Sports, Orthopedics, or manual therapy. The most common non-ABPTS certifications were those in manual therapy, and 'pelvic physical therapy' certifications offered by the APTA and other providers, and lymphedema management (Table 3).

Interventions

More than 80% of PT respondents indicated that they "frequently used" education, exercise, and manual therapy for patients with pelvic pain (Table 4). Education most frequently provided was focused on self-treatment with exercise and movement, education about pain, and self-treatment with manual therapy. The primary exercise interventions targeted the pelvic muscles, flexibility, and core strengthening. Joint-biased manual therapy and external pelvic interventions to the pelvic floor were also used by more than 80% of the respondents. Less than 10% of PTs frequently used acupuncture, and prescribing and/or applying topical medications.

When respondents considered the question, "which interventions do you not frequently use but consider effective?" there was less consistent agreement among PTs. The most common interventions considered effective but not frequently used were cognitive-behavioral therapy, dry needling, acupuncture, prescribing topical medication, and internal pelvic manual

therapy techniques (Table 5). The intervention considered least effective by PTs was surgical intervention (8%).

Patterns of Intervention Use

Specific Interventions by Country—Physical therapists in Canada used a higher proportion of internal pelvic manual therapy techniques than PTs in other countries ($X^2 = 41.6, P < .001$), while in contrast PTs in the United States used more joint-biased manual therapy interventions than those in other countries ($X^2 = 17.9, P < .001$).

More respondents from the United States and Canada frequently used flexibility and stretching exercises than those from other countries ($X^2 = 21.2, P < .001$). A higher proportion of PTs in the United States indicated that they frequently used aerobic exercise ($X^2 = 16.7, P < .001$), core strengthening ($X^2 = 37.7, P < .001$), progressive resistance training ($X^2 = 10.1, P = .007$) more than in Canada or other countries. More respondents from Canada frequently used acupuncture ($X^2 = 54.1, P < .001$) than respondents elsewhere. A significantly lower proportion of PTs in the United States compared with Canada and other countries frequently used dry needling as an intervention for pelvic pain ($X^2 = 13.1, P = .001$).

A smaller proportion of PTs in the United States reported frequently using topical medication ($X^2 = 8.8, P = .012$) than those in other countries. Finally, a larger proportion of Canadian PTs frequently used pain education as an intervention compared with PTs elsewhere.

Intervention Use by Level of Advanced Clinical Training

Total Number of Interventions—There was a monotonic increase in the median number of different interventions used by PTs based on the number of ABPTS board certifications he or she held at the time of the survey. Those PTs without an ABPTS board certification frequently used a median of 10.5 different interventions and those with 4 or more frequently used 13. Fellowship trained PTs used fewer types of interventions; however, the median number of different ($P = .17$).

Specific Interventions—Several patterns of use are based on advanced training that were identified and are shown in Table 6. There were no differences among PTs for applying medications, but differences were observed for manual therapy and conditioning interventions. Smaller proportions of residency and fellowship trained PTs and more of those with none or certificate training frequently used internal pelvic manual therapy interventions ($X^2 = 17.2, P = .001$) and residency trained PTs also used fewer external pelvic techniques compared to all others ($X^2 = 9.2, P = .027$). Lower proportions of residency and fellowship trained respondents used exercises for core stability ($X^2 = 13.1, P = .005$); however, greater proportion of these respondents used general progressive strengthening exercises ($X^2 = 13.5, P = .004$) and neuromuscular re-education ($X^2 = 11.0, P = .012$).

DISCUSSION

This practice survey was specifically focused on simply identifying and reporting the types of interventions commonly used to manage pelvic pain conditions. While the initial intent was to include multiple disciplines to gain a broad understanding of these practice patterns, the vast majority of respondents were PTs in the USA and Canada. This provided an opportunity to examine practice specifically by PTs with greater granularity.

The interventions most frequently used by respondents were education focused on self-treatment about exercise and movement, education about pain, and self-treatment with manual therapy. The majority of PTs used exercise interventions focused on the pelvic muscles, flexibility, and core strengthening. Joint-biased manual therapy and external pelvic interventions to the pelvic floor were also used by more than 80% of the respondents.

Patients with spinal pain have high expectations for these categories of interventions. Specifically, patients with low back pain expect exercise and manual therapy to be the most effective treatments for pain. While similar work has not been performed in patients with pelvic pain, we speculate based on the work in spinal pain disorders that these expectations will align. The significance of this is that outcomes are improved when patient expectations of benefit from an intervention are met when those interventions are provided. Given that the majority of PTs frequently use these interventions, we would expect the therapeutic milieu surrounding the patient encounter to be conducive to enhanced outcomes for pain.

In contrast, less than 17% of PTs reported frequently using acupuncture or dry needling as an intervention for pelvic pain. Most of the respondents using acupuncture were from Canada and while 72 PTs reported frequently using acupuncture, only 9 indicated any acupuncture certification. What is most intriguing about this information is that acupuncture and dry needling were considered effective interventions by approximately 30% of the respondents. This raises the question regarding jurisdictional and personal scopes of practice; that is, are PTs not using these interventions because of training, or practice law? Are these PTs observing successful outcomes from other practitioners' treatment of pelvic pain disorders using these interventions? It is unclear why there was a difference between using these interventions versus believing that they are effective. These questions deserve further investigation in any follow-up work examining practice patterns in pelvic pain management.

While the other numbers were small, statistically more PTs from countries outside the USA and Canada indicated that they frequently used topical medication. This likely also reflects regulatory scope of practice in other countries. Another interesting geographic difference in practice was related to the use of manual therapy interventions. A higher proportion of PTs in Canada used internal pelvic manual therapy techniques, while more PTs in the USA used joint-biased manual therapy. The high frequency of joint-biased techniques used by USA-based PTs may reflect the high proportion of those PTs who were orthopedic clinical specialists completing the survey and is therefore potentially related to response bias rather than a broader joint-biased approach to management in the USA. In a related finding,

smaller proportions of residency and fellowship trained PTs used internal pelvic manual therapy interventions.

More respondents from the USA and Canada frequently used flexibility and stretching exercises than those from other countries. Physical therapists in the USA indicated that they frequently used aerobic exercise, core strengthening, and progressive resistance training than those in Canada or other countries. Practice in the USA and Canada tends to include more time in contact with the PT than other countries, which tend to have “consulting” model rather than personal training model of care.

In summary, these data from our sample suggest that pelvic pain management is highly variable; providers report using and/or believe that many different types of treatment are effective. These data are concerning for a number of reasons. First, unwarranted variation in health care is a rampant issue associated with lower health care outcomes and higher costs.^{25,26} The profession of physical therapy is not immune to this problem. Dr Tara Jo Manal, in her 2017 John H.P. Maley Lecture, emphasized that the greatest challenge our profession faces is unwarranted variability in patient care.²⁷ While some variation in delivery of individual elements of care (eg, modification of an intervention based on individual characteristics) is necessary to provide personalized, tailored treatment, a level of consistency should exist when it comes to overall management strategies implemented for individuals with pelvic pain. The second concerning factor is that many of the treatments providers reported using for pelvic pain management have very limited and/or low-quality evidence to support their use for individuals with pelvic pain. These treatments include but are not limited to dry needling, visceral manipulation/mobilization, and pain education. The third area of concern is scope of practice. Over 25% of physiotherapist respondents reported using cognitive-behavioral therapy for management of pelvic pain. Cognitive-behavioral therapy is a form of psychotherapy that is not part of entry-level physiotherapy training or postprofessional training unless one is training to be a mental health therapist (ie, counselor or psychologist). Physiotherapist providers claiming to provide cognitive-behavioral therapy without formal training is troubling given the problems associated with misapplying cognitive-behavioral therapy. This is akin to mental health providers claiming to provide physical therapy interventions to their patients. Neither professional group is trained to perform the interventions or mitigate the potential risks. Collectively, the data from our study demonstrate that clinical practice guidelines for rehabilitation providers who manage pelvic pain are critically needed. The APTA, in its goal to help reduce variability in PT practice, has sponsored the development of multiple clinical practice guidelines in the broad areas of orthopedics, pediatrics, neurorehabilitation, and women’s health, for example. The next step using the results of this study is to systematically review the existing literature to critically appraise the interventions providers reported using in order to provide recommendations on their use for individuals with pelvic pain.

Limitations

This survey was not designed to determine outcomes; thus, we cannot make any comments about whether frequently using a specific intervention or more types of interventions produces better outcomes. Similarly, the influence of training cannot be assessed. Another

consideration is that we did not include specific descriptors when asked to identify how often a provider administers a particular intervention. For example, one of the survey questions asked respondents to mark interventions they “routinely” use, but we did not provide a definition for the term “routinely.” Nonetheless, here in this paper we have a pragmatic survey of the types of interventions that are frequently used to manage patients with chronic pelvic pain. Last, we did not obtain age and sex of survey respondents or the amount of time they typically spend managing patients with pelvic pain, as it was not our intent to evaluate how these factors relate to interventions used to manage pelvic pain.

CONCLUSIONS

Physical therapists routinely use education, manual therapy, and exercise to manage pelvic pain conditions. While not often used, the interventions of cognitive-behavioral therapy, acupuncture, and dry needling were considered effective. Advanced clinical training was associated with variation in the frequency of use for some interventions.

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Table 1.

Professional Background of Survey Respondents

	N
Acupuncturist	1
Clinical psychologist	1
Clinical specialist in women's health	1
Nurse	6
Occupational therapist	3
Physical therapist/physiotherapist	933
Physical therapist assistant	1
Physician, chiropractic	2
Physician, medical	31
Physician, osteopathic	3
Social worker	1

Table 2.

Current Country of Primary Practice of Physiotherapist Respondents

	Frequency	Percent
Australia	7	0.8
Canada	174	18.6
Colombia	1	0.1
Costa Rica	1	0.1
Denmark	1	0.1
France	2	0.2
Iran	1	0.1
Ireland	1	0.1
New Zealand	1	0.1
Nigeria	1	0.1
Portugal	2	0.2
South Africa	9	1
Spain	3	0.3
Turkey	1	0.1
UK	2	0.2
USA	726	77.8
Total	933	100

Table 3.

Other Areas of Certification

	N	%
Acupuncture	9	0.9
Biofeedback	11	1.1
Certificate of achievement in pelvic physical therapy	40	4.1
Lymphedema management	26	2.7
Manual therapy	91	9.4
Movement	19	2.0
Strength and conditioning	11	1.1
Other pelvic health/management programs	25	2.6
Vestibular rehabilitation	3	0.3

Table 4.

Proportion of Physiotherapist Respondents Who Frequently Used Each Intervention

	N	%
Education—self-treatment with exercise and movement	911	97.5
Exercise—pelvic muscles	889	95.2
Manual therapy—external pelvic techniques	880	94.2
Exercise—stretching or flexibility exercises	879	94.1
Education—pain education	853	91.3
Exercise—core strengthening	838	89.7
Education—self-treatment with manual therapy	803	86.0
Manual therapy—joint biased techniques	773	82.8
Exercise—general progressive conditioning and strengthening	744	79.7
Neuromuscular re-education	743	79.6
Manual therapy—internal pelvic techniques	710	76.0
Exercise—aerobic training	557	59.6
Manual therapy-visceral manipulation/mobilization	408	43.7
Cognitive-behavioral therapy	242	25.9
Dry needling	185	19.8
Acupuncture	72	7.7
Apply topical medication	27	2.9
Prescribe systemic medication	5	0.5
Prescribe topical medication	4	0.4
Surgery	0	0.0

Table 5.**Inventions Not Frequently Used But Considered Effective**

	N	%
Cognitive-behavioral therapy	399	42.8
Dry needling	332	35.6
Acupuncture	276	29.6
Prescribe topical medication	258	27.7
Manual therapy—internal pelvic techniques	238	25.5
Prescribe systemic medication	224	24.0
Manual therapy - visceral manipulation/mobilization	183	19.6
Apply topical medication	178	19.1
Manual therapy—external pelvic and regional techniques	157	16.8
Exercise—Pelvic muscles	139	14.9
Exercise—general progressive conditioning and strengthening	129	13.8
Education—self-treatment with manual therapy	128	13.7
Education—pain education	127	13.6
Neuromuscular reeducation	120	12.9
Exercise—aerobic training	118	12.6
Exercise—core strengthening	117	12.5
Exercise—stretching or flexibility exercises	116	12.4
Manual therapy—joint biased techniques	115	12.3
Education—self-treatment with exercise and movement	115	12.3
Surgical intervention	71	7.6

Table 6.

Proportion Using Intervention Based on Advanced Training

Intervention Category	None	Certification	Residency	Fellowship
Manual therapy	73.1	78.5	54.4	45.5
	92	92	81	82
	83	84	83	82
	44	47	30	27
	16	22	9	18
	7	13	0	7
	92	93	95	73
Exercise	89	80	90	73
	77	70	93	73
	54	59	67	73
	91	92	91	91
	78	69	84	64
	84	82	77	82
	94	94	97	100
Education	88	89	90	100
	21	27	19	36