

Survey of Canadian Physiotherapists: Entry-Level and Post-professional Education in Women's Health

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ABSTRACT

Purpose: The aims of this study were to identify (1) practice patterns of Canadian physiotherapists who consider themselves women's health providers or educators (WHPTs); (2) WHPTs' perception of the relative importance of entry-level and post-professional education curricular content directed at women's health issues; and (3) WHPTs' patterns and preferences with respect to continuing education. **Method:** A survey link was sent via e-mail to all 429 members of the Women's Health Division of the Canadian Physiotherapy Association and to physiotherapist educators at the 14 Canadian physiotherapy programmes. **Results:** A total of 114 WHPTs responded (27%), including 16 educators. Of the 114 respondents, 53% spent less than 25% of their practice specifically treating women's health issues. Over half of the 114 respondents felt that entry-level preparation must include aging issues, musculoskeletal dysfunction, osteoporosis, and sports injuries in women. Respondents' stated that post-professional education should also include female anatomy, obstetrics and gynecology, pelvic floor assessment, treatment of urogenital concerns, complications of cancer, wellness and health promotion, and research. Most respondents (63%) showed interest in achieving continuing-education credentials in women's health, preferably using a combined theoretical online and hands-on weekend-based format. **Conclusions:** The survey results suggest that WHPTs practising in Canada seek post-professional training with an emphasis on pelvic floor assessment and treatment, obstetrics and gynecology, urogenital concerns, complications of cancer, wellness and health promotion, and research. Future research should focus on the barriers to devoting full-time practice hours to WHPTs.

Key Words: education; physical therapy; women's health.

RÉSUMÉ

Objectif : Les objectifs de cette étude étaient de définir (1) les modèles de pratique des physiothérapeutes canadiens qui se considèrent comme des fournisseurs de soins en santé des femmes ou comme des professionnels de l'éducation à la santé pour les femmes ; (2) la perception que les physiothérapeutes en santé des femmes ont de l'importance relative du contenu traitant de la santé des femmes dans les programmes d'enseignement au niveau d'entrée et en formation postprofessionnelle ; et (3) les modèles et les préférences de ces physiothérapeutes en matière de formation continue. **Méthode :** Un lien Web conduisant à un sondage a été envoyé par courriel aux 429 membres de la division Santé des femmes de l'Association canadienne de physiothérapie et aux enseignants en physiothérapie de 14 programmes d'enseignement de la physiothérapie au Canada. **Résultats :** Au total, 114 physiothérapeutes en santé des femmes (27 %), parmi lesquels 16 enseignants dont 53 % consacraient moins de 25 % de leur pratique à traiter des problèmes particuliers propres aux femmes, ont répondu au sondage. Plus de la moitié a estimé que la préparation au niveau d'entrée doit aborder des questions telles que le vieillissement, les dysfonctions musculosquelettiques, l'ostéoporose et les blessures sportives chez les femmes. Les répondants se sont dits d'avis que la formation postprofessionnelle devrait aussi couvrir des sujets tels que l'anatomie féminine, l'obstétrique et la gynécologie, l'évaluation du plancher pelvien, le traitement de problèmes urologiques, les complications associées au cancer, la promotion de la santé et du bien-être ainsi que la recherche. La majorité des répondants (63 %) se sont dits intéressés par l'acquisition de compétences supplémentaires dans le cadre de formation sur la santé des femmes, idéalement sous forme théorique en ligne et dans le cadre d'ateliers pratiques qui pourraient se tenir au cours d'une fin de semaine. **Conclusions :** Le sondage suggère que les physiothérapeutes en santé des femmes qui pratiquent au Canada souhaiteraient bénéficier de formation post-professionnelle qui porterait principalement sur l'évaluation du plancher pelvien et sur le traitement de troubles qui y sont associés, l'obstétrique et la gynécologie, les problèmes urologiques, les complications associées au cancer, la promotion de la santé et du bien-être ainsi que la recherche. Des recherches ultérieures devraient se concentrer sur les obstacles associés à des heures de pratique entièrement consacrées à la physiothérapie spécifique à la santé des femmes.

The area of women's health encompasses conditions and/or diseases that are unique to women or that are more prevalent, are more serious, have different risk

factors, or require different interventions in women or a sub-group of women than in men.¹ There is growing recognition that physiotherapy plays an important role

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Contributors: All authors designed the study, collected the data, and analyzed and interpreted the data; drafted or critically revised the article; and approved the final draft.

Competing interests: None declared.

Acknowledgements: The authors thank the Women's Health Division Executive Committee; the survey participants; and Laura LaPorta Krum and Sue Smith for allowing their survey to serve as a template for our research.

Physiotherapy Canada 2012; 64(3):271–279; doi:10.3138/ptc.2011-15

in the management of several women's health conditions such as incontinence, pelvic organ prolapse and pelvic and/or genital pain,² osteoporosis,³ and lymphoedema.⁴ In 2009, the National Institute of Child Health and Human Development prioritized support for research on pelvic floor disorders, in light of recent evidence that these conditions affect an estimated 24% of women in the United States.⁵ Despite this finding, relatively few physiotherapists have the specialized skills needed to manage individuals with these conditions.⁶

Regulatory bodies across Canada ensure that entry-level graduates have the skills to manage a general physiotherapy population, which includes identifying and referring patients who present with conditions that they are not competent to treat. One of the guiding documents for entry-level practice, the *Essential Competency Profile for Physiotherapists in Canada*,⁷ clearly states that therapists should offer services within their scope of practice and personal competence. However, the depth, type, and content of entry-level curriculum elements that contribute to proficient assessment and treatment of health conditions specific to women are not standardized across the 14 Canadian physiotherapy programmes, and there is limited information on what is included in each programme.

A 2001 survey of accredited programmes in the United States by the Commission on Accreditation in Physical Therapy Education found that the majority of the 64 responding programmes only "adequately covered" 27 of 95 identified cognitive, affective, and psychomotor subtopics in women's health.⁶ Similarly, a study based on a random sample of members of the Section on Women's Health of the American Physical Therapy Association revealed that physiotherapists who consider themselves women's health providers or educators (WHPTs) received "little to no" formal entry-level education on women's health topics.⁸ In a similar survey of 128 professional physical therapy schools in the United States, faculty recognized their need for assistance in developing a women's health curriculum.⁹

Post-professional education available in areas of women's health is not documented or monitored in Canada, nor are current practice patterns of Canadian WHPTs. Demographic data and data on the scope of post-graduate education, clinical experience, and practice settings of WHPTs have not been investigated. Therefore, we do not know whether the expertise needed to safely and effectively manage women's health-related conditions in physiotherapy practice is available in Canada.

The Canadian Physiotherapy Association (CPA) is currently developing a formal evaluation procedure for physiotherapists to become *Clinical Specialists* in various areas of practice. Within this process, a Clinical Specialist is defined as a physiotherapist who practices "at an advanced clinical level within a recognized physical therapy specialty area and has satisfied the CPA pro-

gramme requirements for formal recognition of his/her knowledge and skills."^{10,11} This programme is intended to identify clinicians with a common set of advanced skills, not to restrict practice in certain areas to specialist therapists.¹⁰ As there is potential for CPA to move toward the development of a Women's Health Specialist designation, an understanding of the current practice patterns of WHPTs in Canada is needed.

Our study aimed to (1) identify practice patterns of WHPTs in Canada, (2) determine WHPTs' perception of the relative importance of various curriculum elements directed at women's health issues for entry-level and post-professional education, and (3) determine clinical practice patterns and preferences that WHPTs have used and are interested in using during their post-professional education.

METHODS

Study sample

In this cross-sectional, descriptive study, all active members of the Women's Health Division (WHD) of CPA ($n = 429$) were invited to complete an online survey. Potential participants were recruited during October and November 2009 through postings on the WHD website, the WHD's quarterly newsletter, and e-mail invitations. We used a two-step approach to maximize participation: a primary recruitment e-mail was followed 6 weeks later by a thank-you/reminder e-mail. Educators at Canadian physiotherapy schools (defined as tenured, tenure-stream or adjunct professors, lecturers, or academic assistants who instruct students in the entry-level curriculum on issues related to women's health) were recruited by targeted e-mail. To participate, individuals had to be registered physiotherapists in Canada, consider themselves women's health providers or educators, and be at least 18 years old and proficient in English. Participants were invited to enter a prize draw (five prizes each valued at \$50.00) on completion of the survey.

Survey instrument

The survey, created using SurveyMonkey, was heavily based on a previously published manuscript⁸ and dissertation materials⁹ used for a similar study of American WHPTs. (A complete copy of the survey is available online.) Some components of the survey, despite including semi-overlapping terms (e.g., *urogynecology* and *gynecological*), were retained as presented in the original survey⁸ to allow for future comparisons between the Canadian and U.S. contexts. The questionnaire format was altered for online completion and a panel of seven Canadian WHPTs from three different provinces (British Columbia, Ontario, and Quebec), who were from different practice areas in women's health physiotherapy and were or had been members of the WHD executive committee, reviewed it for completeness in terms of practice areas and to ensure that all questions were relevant to the

Canadian context. Questions about men's health conditions, specifically urogenital conditions, were included in the survey because this content is taught in courses run by clinical educators in Canada and because it seemed likely that, similar to the international experience, many WHPTs assess and treat these conditions as part of their practice.¹²

Ethics approval for the study was received from Queen's University (GREH-002-09). Participants provided informed consent on a secure website before completing the 15-minute survey; those who did not consent to participation were directed to the last page of the survey, where they were invited to enter the prize draw.

Statistical analysis

Data were analyzed using Minitab version 15.1.30.0 statistical software (Minitab Inc., State College, PA). Descriptive statistics included measures of central tendency (presented as means and standard deviations) for parametric data and frequency distributions (presented as 95% confidence intervals for proportions) for categorical variables. Demographic data were compared among subgroups of participants (educators vs. clinicians, urban vs. rural practice settings, and private vs. public sectors) using analyses of variance (ANOVAs) for continuous data and χ^2 analyses for categorical data; *t*-tests for proportions were used to compare demographic data and geographic distribution from our sample to the Physiotherapists in Canada Database from the Canadian Institutes of Health Information (CIHI)¹³ and to the WHD membership database to determine what extent the sample was representative of physiotherapists practising in Canada. Data ranking the relative importance of curricular content were analyzed, with a threshold level of agreement set a priori: a particular content area would fall into the category of "essential," "important," or "not essential" only if the majority of respondents (>50%) agreed on that ranking category. Area of practice data presented with skewed distribution, and therefore presented using non-parametric descriptors (i.e., medians and ranges). The significance level was set at $\alpha = 0.05$ for all statistical tests. When significant *p*-values were found, Bonferroni correction was used to determine whether or not the *p*-values remained significant after accounting for multiple comparisons.

RESULTS

Study sample

A total of 114 respondents completed the survey, for a response rate of 27%. Only 89 participants completed all sections, but partial responses were included in calculating the response rate. All but one respondent was female. The respondents had a mean age of 43 (standard deviation [SD] 10) years and had practised physiotherapy for a mean of 19 (SD 11) years. Five (± 2) percent of

respondents graduated before 1969, 13% ($\pm 3\%$) graduated between 1970–1979, 25% ($\pm 4\%$) graduated between 1980 and 1989, 36% ($\pm 4\%$) graduated between 1990 and 1999, and 23% ($\pm 4\%$) graduated in 2000 or later. Our educator respondents represented 13 of the 14 Canadian physiotherapy programmes; there were no respondents from Université de Sherbrooke because this programme had not yet graduated its first class at the time of the survey. Eleven respondents (10% \pm 3%) had completed their degrees in international programmes. The majority reported graduating with an entry-level degree at the bachelor's level (78% \pm 4%); others reported completing a diploma (14% \pm 3%), a master's degree (5% \pm 2%), or a doctorate (1% \pm 1%) as their entry-level qualification; three respondents did not answer this question. The largest proportion of respondents indicated that their most advanced degree was a bachelor's degree (72% \pm 4%); smaller proportions reported holding a master's degree (16% \pm 3%), diploma (5% \pm 2%), and doctorate (5% \pm 2%).

When asked about their current work setting, 69 respondents (61% \pm 5%) reported working in the private sector, 24 (21% \pm 4%) in the public sector, and 20 (18% \pm 4%) in both sectors (one person did not report which sector she worked in); 89 (78% \pm 4%) worked in urban settings, 12 (11% \pm 3%) in rural settings, and 11 (10% \pm 3%) worked in both urban and rural settings (two respondents declined to report their work setting).

The distribution of respondents across Canada's provinces and territories reflected the geographical distribution of WHD members (see Table 1). Despite the relatively low response rate, the sample appears representative of physiotherapists in practice across Canada. Our respondents were slightly different from the CIHI's Physiotherapists in Canada Database in terms of geographical representation: a larger proportion of our sample resided in British Columbia ($p = 0.002$) and Alberta ($p = 0.035$), and a smaller proportion in Quebec ($p < 0.001$) and Prince Edward Island ($p < 0.001$). For Quebec, this discrepancy may be due to the lower proportion of CPA members in that province relative to other provinces in Canada ($p < 0.001$).

There were no significant differences in age ($p = 0.32$), entry-level education ($p = 0.13$), or proportion of WHPTs working in rural vs. urban settings ($p = 0.21$) between our respondents and values reported in the CIHI Physiotherapist Database.¹³

Sixty of 114 (53% \pm 5%) respondents reported that up to 25% of their practice involved treating specific women's health issues; 15% ($\pm 3\%$) of respondents spent 26–50% of their practice time treating women's health issues, 11% ($\pm 3\%$) spent 51–75% of their practice time treating women's health issues, and 21% ($\pm 4\%$) spent 76–100% of their practice time treating women's health issues (see Table 2). The three areas in which respondents spent the highest percentage of their total practice time

Table 1 Comparisons between Provincial Distribution of Respondents and CPA WHD Membership

Province/territory	No. of responses	% of total responses	No. and (%) of WHD members
British Columbia	30	26	104 (24)
Alberta	22	19	65 (15)
Saskatchewan	5	5	24 (6)
Manitoba	5	5	19 (4)
Ontario	36	32	143 (33)
Quebec	7	6	19 (4)
New Brunswick	2	2	13 (3)
Nova Scotia	4	4	14 (3)
Prince Edward Island	0	0	1 (0.2)
Newfoundland and Labrador	2	2	15 (3)
Yukon	0	0	2 (0.5)
Northwest Territories	0	0	1 (0.2)
Nunavut	0	0	0 (0)
Unknown	1	1	9 (2)

Note: The percentage of responses from each province and territory was consistent with the percentage of the WHD in that province or territory. CPA = Canadian Physiotherapy Association; WHD = Women's Health Division.

Table 2 Percentage of Time Spent in Women's Health Practice by Treatment Area

Category	No. of respondents	Median %	IQR
Musculoskeletal	93	20	10–40
Urogenital concerns in women	78	15	5–40
Gynaecology	66	10	1–30
Wellness	61	10	5–26
Female athletes and sports injuries	62	5	5–20
Pathology	62	5	5–15
Obstetrics	68	5	5–15
Aging	54	5	0–10
Consultation	42	5	0–10
Osteoporosis and osteopenia	58	5	0–10
Ergonomics	47	5	0–10
Education	42	5	0–10
Ano-rectal dysfunction	41	5	0–10
Research	20	0	0–9
Marketing	38	5	0–5
Oncology	34	3	0–5
Disability	16	3	0–5
Nutrition	34	0	0–5
Urogenital concerns in men	27	0	0–5
Sexuality and diversity	21	0	0–0
Respiratory	16	0	0–0

were (median [interquartile range]): female urogenital concerns and gynecology (30 [10–80]%), musculoskeletal dysfunction (20 [10–40]%), and wellness (10 [5–26]%).

Respondents' self-reported post-professional education in women's health

Most respondents said they had spent a “great deal of time” in their post-professional education on urogenital concerns in (52 ± 5%) and pelvic floor exercise for women (52 ± 5%); an additional 13% (±3%) and 22% (±4%) respectively had spent a “considerable amount of time” learning in these areas. Among respondents who reported spending either a “great deal of time” or “considerable time” on continuing education, the majority of that time was spent on musculoskeletal dysfunction (71% ± 4%), external (55% ± 5%) and internal (vaginal [53% ± 5%] and anal [51% ± 5%]) assessments, and therapeutic tools for urogenital concerns in women (51% ± 5%). Conversely, most respondents had spent “no time” in their post-professional education on either internal (55% ± 5%) or external (51% ± 5%) pelvic floor assessment in men, internal pelvic floor treatment of complications of cancer (57% ± 5%), or birth-control methods (52% ± 5%). Most respondents had not participated in dissection labs (57% ± 5%) or clinical residencies (64% ± 4%) as part of their continuing education in women's health practice.

Respondents' interest in further post-professional education

Sixty-nine respondents (78% ± 4%) stated that they would be interested in a specific continuing education certificate in women's health; 47 (53% ± 5%) were interested in credit toward a master's-level degree; 20 (23% ± 4%) expressed interest in a general continuing education certificate in women's health; and 8 (9% ± 3%) were interested in credit toward a PhD. When asked to select all types of university-based programmes they would be interested in, 43 (48% ± 5%) preferred a distance educa-

tion programme, 40 (45% \pm 5%) an online programme; 38 (43% \pm 5%) a weekend classroom format; and 56 (63% \pm 4%) preferred a combination of online and face-to-face settings. Of the 18 (20% \pm 3%) who were not interested in enrolling in a university programme, few justified their position: 3 (4% \pm 2%) reported that they were close to retirement, and 2 (2% \pm 2%) preferred other formats, namely traditional lectures and practical sessions.

Respondents' opinions on curricular content for entry-level education

Overall, respondents considered it "very important" (56% \pm 5%) for entry-level physiotherapy programmes to address women's health issues specifically in the curriculum. The majority of respondents (57% \pm 5%) felt that, ideally, topics in women's health should be included and emphasized throughout relevant areas in the curriculum. Entry-level content areas identified as "essential" entry-level by the majority of respondents were aging, musculoskeletal dysfunction, osteoporosis/osteopenia, and sports injuries (see Table 3); content areas identified as "not essential" by the majority of respondents were sexually transmitted diseases, birth-control methods, sexuality and diversity, internal pelvic floor muscle assessment, ano-rectal dysfunction, and consultation skills (see Table 3). The respondents' comments on internal pelvic floor muscle assessment in entry-level education consistently revealed the opinion that at entry level, WHPTs "need to understand [that] the area of practice exists, but [do] not [need to] have the skills to treat it." Respondents also commented that entry-level WHPTs "should have an introduction [to the physiology of pregnancy and of continence], so they know what may be involved."

Respondents' opinions on curricular content for post-professional education

The four content areas deemed "essential" for entry-level practice were also considered "essential" in post-professional education for WHPTs by the majority of respondents, along with female anatomy; gynecology and the use of modalities in the treatment of gynecologic pathology; obstetrics; assessment and treatment of urogenital concerns in both women and men, including internal and external assessment; pelvic floor muscle exercise and use of modalities; anorectal dysfunction; pathology; oncology; treatment of complications of cancer; wellness and health promotion; and research (see Table 3). No content area mentioned in the survey was deemed "not essential" in post-professional training for WHPTs by most respondents (see Table 3).

Comparison between sub-groups of respondents

There were no significant differences between educators and clinicians in terms of age, years in practice, percentage of practice time in women's health, or entry-level degrees. Educators were more likely than clinicians

to have a doctoral degree ($p_{\text{adj}} = 0.004$). Comparisons between educators and clinicians demonstrated statistically significant differences in opinions on the importance of two entry-level curricular categories: sports injuries in women ($p_{\text{adj}} = 0.046$) was less important to educators than to clinicians, whereas physiology and endocrinology in women ($p_{\text{adj}} = 0.041$) was more important to educators than to clinicians. There were no significant differences between the sub-groups' opinions on curricular content for post-professional education.

No significant differences were found in terms of age, years in practice, percentage of practice time in women's health, entry-level degree, or most advanced degree between respondents working in the private sector and those working in the public sector (or those working in both the public and private sectors).

Comparison among urban, rural, or both practice settings showed no significant differences in terms of age, years in practice, percentage of practice time in women's health, entry-level degree, or most advanced degree. The unadjusted p -values suggest statistically significant differences among settings in respondents' opinions on the importance of entry-level research training ($p = 0.049$), clinical practicum ($p = 0.049$), classroom/laboratory experience ($p = 0.048$), and clinical observation ($p = 0.047$), all of which were more important to those working in rural or both settings than to those working in urban settings, but these differences were no longer significant after Bonferroni correction. Opinions on the importance of respiratory concerns in women ($p = 0.025$, $p_{\text{adj}} = 0.115$), ergonomics and women ($p = 0.005$, $p_{\text{adj}} = 0.023$), women with disabilities ($p = 0.005$, $p_{\text{adj}} = 0.023$) and pharmacology ($p = 0.005$, $p_{\text{adj}} = 0.023$) suggested that these areas were more important to those working in urban settings than to those working in rural or both urban and rural settings.

DISCUSSION

The first purpose of our study was to identify current practice patterns of WHPTs in Canada. The survey results indicate that roughly half the sample (47%) spent 26–100% of their time working with patients with specific concerns related to women's health. Given that women make up approximately half of the population and that they have several conditions that are unique from men,^{14–17} it is not clear why more than half of respondents spend 25% of their time or less treating patients with women's health conditions. The reason may be a low uptake of these services by patients, perhaps because there is little knowledge among the public or health care providers that physiotherapists treat such conditions as incontinence, sexual pain disorders, and arthritis. This finding may also be due to therapists' preference for a more varied caseload. It is also possible that WHPTs in private practice choose not to carry a full caseload of patients requiring pelvic floor assessment

Table 3 Opinions of “Essential,” “Important,” and “Not Essential” Women’s Health Content for Entry-Level and Post-Graduate Curricula (*n* = 89)

Curricular content	Response; no (%)					
	“Essential”		“Important”		“Not Essential”	
	Entry-level	Post-graduate	Entry-level	Post-graduate	Entry-level	Post-graduate
Aging	48 (54)*	46 (52)*	39 (44)	36 (40)	8 (9)	6 (7)
Respiratory conditions	22 (25)	29 (33)	50 (56)*	45 (51)*	17 (19)	11 (12)
Musculoskeletal dysfunction	61 (69)*	60 (67)*	25 (28)	26 (29)	3 (3)	1 (1)
Osteoporosis/osteopenia	61 (69)*	60 (67)*	27 (30)	25 (28)	1 (1)	2 (2)
Sports injuries	48 (54)*	47 (53)*	31 (35)	32 (36)	10 (11)	6 (7)
Nutrition issues	9 (10)	34 (38)	54 (61)*	41 (46)	26 (29)	12 (13)
Ergonomics and women in the workplace	31 (35)	35 (39)	43 (48)	39 (44)	15 (17)	11 (12)
Women with disabilities	26 (29)	28 (31)	42 (47)	48 (54)*	21 (24)	9 (10)
Female anatomy lectures	44 (49)	47 (53)*	38 (43)	32 (36)	7 (8)	7 (8)
Female anatomy dissection labs	27 (30)	39 (44)	38 (43)	33 (37)	24 (27)	12 (13)
Female physiology and endocrinology	17 (19)	42 (47)	55 (62)*	34 (38)	17 (19)	11 (12)
Gynaecology	11 (12)	50 (56)*	53 (60)*	29 (33)	25 (28)	8 (9)
Use of modalities in treatment of gynecologic pathology	5 (6)	53 (60)*	44 (49)	25 (28)	44 (49)	8 (9)
Sexually transmitted diseases	1 (1)	25 (28)	31 (35)	38 (43)	57 (64)*	24 (27)
Birth-control methods	1 (1)	18 (20)	17 (19)	42 (47)	71 (80)*	27 (30)
Obstetrics	24 (27)	55 (62)*	53 (60)*	28 (31)	12 (13)	5 (6)
Sexuality and diversity	9 (10)	29 (33)	28 (31)	41 (46)	52 (58)*	17 (19)
Urogenital concerns in women	36 (40)	65 (73)*	42 (47)	19 (21)	12 (13)	4 (4)
Intravaginal pelvic floor assessment	4 (5)	60 (67)*	10 (11)	20 (22)	75 (84)*	8 (9)
Intra-anal pelvic floor assessment in women	3 (3)	59 (66)*	11 (12)	20 (22)	75 (84)*	9 (10)
External pelvic floor assessment in women	14 (16)	59 (66)*	32 (36)	22 (25)	43 (48)	6 (7)
Pelvic floor exercise in women	39 (44)	65 (73)*	41 (46)	19 (21)	9 (10)	3 (3)
Therapeutic tools for urogenital concerns in women	10 (11)	58 (65)*	37 (42)	26 (29)	42 (47)	3 (3)
Urogenital concerns in men	19 (21)	56 (63)*	39 (44)	24 (27)	31 (35)	7 (8)
Intra-anal pelvic floor assessment in men	1 (1)	53 (60)*	9 (10)	23 (26)	79 (89)*	11 (12)
External pelvic floor assessment in men	7 (8)	53 (60)*	19 (21)	25 (28)	63 (71)*	9 (10)
Pelvic floor exercise in men	26 (29)	59 (66)*	42 (47)	23 (26)	21 (24)	5 (6)
Therapeutic tools for urogenital concerns in men	5 (6)	53 (60)*	33 (37)	26 (29)	51 (57)*	7 (8)
Ano-rectal dysfunction	7 (8)	53 (60)*	34 (38)	26 (29)	48 (54)*	7 (8)
Pathology	41 (46)	53 (60)*	39 (44)	29 (33)	9 (10)	5 (6)
Oncology	29 (33)	53 (60)*	44 (49)	32 (36)	16 (18)	3 (3)
Internal pelvic floor treatment of complications of cancer	3 (3)	47 (53)*	16 (18)	31 (35)	70 (79)*	1 (1)
External treatment of complications of cancer (i.e., lymphoedema)	15 (17)	51 (57)*	43 (48)	32 (36)	31 (35)	3 (3)
Treatment of post-mastectomy shoulder dysfunction	34 (38)	53 (60)*	45 (51)*	31 (35)	10 (11)	3 (3)
Pharmacology	12 (13)	33 (37)	55 (62)*	43 (48)	22 (25)	9 (10)
Radiology	13 (15)	30 (34)	49 (55)*	44 (49)	27 (30)	12 (13)
Psychosocial aspects of women’s health	18 (20)	36 (40)	44 (49)	42 (47)	27 (30)	9 (10)
Wellness and health promotion	42 (47)	53 (60)*	36 (40)	27 (30)	11 (12)	6 (7)
Education	15 (17)	43 (48)	41 (46)	29 (33)	33 (37)	11 (12)
Marketing	15 (17)	34 (38)	41 (46)	37 (42)	33 (37)	14 (16)
Research	16 (18)	49 (55)*	39 (44)	32 (36)	34 (38)	5 (6)
Consultation skills	9 (10)	41 (46)	30 (34)	33 (37)	50 (56)*	10 (11)
Clinical practicum	35 (39)	55 (62)*	39 (44)	27 (30)	15 (17)	3 (3)
Classroom/laboratory experiences	32 (36)	49 (55)*	40 (45)	32 (36)	17 (19)	3 (3)
Clinical observation	35 (39)	55 (62)*	37 (42)	25 (28)	17 (19)	5 (6)
Clinical residency	25 (28)	37 (42)	21 (24)	25 (28)	27 (30)	8 (9)

*Response >50%.

and treatment, since these specialized services are typically provided over 30–45 minutes of one-on-one treatment time in a private setting, which may represent a loss of income relative to treatment time spent with patients with other orthopaedic conditions. Finally, it may be that therapists in the public sector are required to limit the time they spend treating women's health conditions because their services are needed in other areas. A more in-depth evaluation of this phenomenon is needed if we are to fully understand the barriers to creating a full-time practice in women's health physiotherapy.

Respondents' women's health caseloads predominantly involved urogenital and gynecological concerns (median = 30%), musculoskeletal dysfunction (median = 20%), and wellness (median = 10%). This finding is very similar to those of LaPorta Krum and Smith in the United States, where respondents reported treating female clients for musculoskeletal (31% of practice time), urogenital (20% of practice time), or pathological (13% of practice time) problems that have a higher prevalence in women as well as for obstetric concerns (13% ± 19%).⁸ Our survey responses also show a "significant amount of time" spent by WHPTs on continuing education in the areas of musculoskeletal dysfunction, urogenital concerns, external and internal (vaginal and anal) pelvic floor assessment, and therapeutic tools for urogenital concerns in women.

Our second aim was to gauge the opinions of WHPTs and educators on the relative importance of various content areas in entry-level and post-professional education. The main areas of women's health physiotherapy practice in Canada, as identified through this survey, are musculoskeletal concerns, urogenital and gynecological concerns, athletics, wellness, and obstetrical concerns; there appear to be few WHPTs treating patients with oncological conditions, disability or sexuality issues, or respiratory or nutritional concerns. Given the recent increase in cancer survival rates,¹⁸ it is interesting that few WHPTs reported spending time treating oncology patients. This result may be biased by the population sampled: there is a separate CPA Division for those with a special interest in oncology, and since we surveyed only WHD, therapists who treat patients with sequelae of breast or gynecologic cancers or their treatment may have been omitted from the sample.

The results of this study may inform future planning for post-professional educational opportunities. In addition, the identified attitudes, opinions, and practice patterns of Canadian WHPTs highlight the knowledge and skills needed by peer mentors to help WHPTs new to practice gain competence. Our results may also be used to ensure that applicants to CPA's Clinical Specialist Programme can receive peer evaluation of their portfolios from individuals with appropriate education, training, and experience to comment on the depth and breadth

of each applicant's specialized knowledge and skills in a particular area of women's health physiotherapy.

Our results suggest that women's health-related content on aging, musculoskeletal dysfunction, osteoporosis/osteopenia, and sports injuries specific to women should be part of the physiotherapy entry-level curriculum, and thus should not be considered advanced clinical competencies. Interestingly, Canadian educators within our sample who instruct students in entry-level curriculum differed from our respondents on the importance of instruction on sports injuries specific to women. These educators also considered physiology and endocrinology more important to include in the entry-level curriculum than did the clinicians. These views appear to be short-sighted on both sides, as physiologic and endocrinologic differences between the sexes have been found to be related to higher rates of injury in women.^{19–21} Both WHPTs and educators believed that internal and external pelvic floor examinations in women should be considered advanced clinical skills and should be taught in post-professional education, not in the entry-level curriculum. These findings are consistent with those of LaPorta Krum and Smith⁸ and of Schiff-Boissonnault⁹ who reported that WHPTs in the United States considered pelvic floor examination and treatment to belong in post-professional education. Because of the invasive and specialized nature of palpation examination of the pelvic floor, laboratory-based instruction on these approaches is best suited to those with a specific interest in this area. Our survey results revealed that content areas such as female anatomy, gynecology, obstetrics, pelvic floor muscle exercise, anorectal dysfunction, pathology, oncology (including treatment of complications of cancer), research, and wellness and health promotion should also be considered essential to WHPTs' post-professional training, which suggests that a broader spectrum of advanced clinical competencies is emerging. Links between therapists with expertise in women's health and those with expertise in oncology and health promotion could enhance patient care in these areas.

Most respondents reported having spent "no time" in their post-professional education on either internal or external pelvic floor assessment in men. This finding supports the opinion that pelvic floor assessment in men is *not* deemed an essential skill for a clinical specialist in women's health. The debate as to whether or not the treatment of pelvic floor conditions in men falls within the scope of a "women's health" practitioner is ubiquitous internationally. Although this discussion is beyond the scope of the present study, it is interesting that very few clinicians in our sample reported working in this area. It may be that because most of WHPTs are female, there is a higher level of comfort with assessing and treating patients who are of the same sex. It is also possible that because many Canadian post-graduate courses are offered in levels, and the first-level course

focuses on assessment and treatment of urogenital concerns in women only, WHPTs who take only one post-professional course in this area do not learn techniques to assess and treat urogenital concerns in men.

Our third goal was to determine what methods WHPTs have used, and are interested in using in the future, to further their post-professional education in women's health. Clinicians generally acquire their skills through continuing education courses, self-study, and clinical experience. The majority of our respondents held entry-level degrees at the bachelor's level; at this time, however, all entry-level physiotherapy programmes in Canada are delivered at the master's level, which may alter the breadth and depth of women's health topics covered in the entry-level curriculum. Participants were not asked to recall women's health topics covered in their entry-level curriculum, because of the probability of recall bias. In LaPorta Krum and Smith's study,⁸ however, women's health content delivered in U.S. entry-level curricula was reported to be insufficient to meet the needs of the female patient population, which suggests that WHPTs are using continuing education and clinical experience to develop skills necessary to their practice. Our study suggests that the situation is similar in Canada.

Post-professional education for WHPTs is currently offered across Canada through a variety of private courses and certificate programmes with no standard curriculum. The WHD does not currently have a standardized curriculum or an examination process to credential courses. Our respondents favoured a distance education delivery model combined with weekend practical experiences, and indicated a strong interest in certificate programmes and/or credit toward an advanced degree in physiotherapy or rehabilitation science. Some Canadian universities are currently investigating the development of online certificate programmes in areas related to women's health physiotherapy, but at this time none have been formally announced. Outside Canada, several organizations—including the American Physical Therapy Association's Section on Women's Health and the Association of Chartered Physiotherapists in Women's Health (United Kingdom)—have developed programmes to credential women's health physiotherapy advanced clinical practice.

By not circulating our survey to physiotherapists outside the WHD membership, we may have limited the number of potential respondents and missed physiotherapists who treat women's health conditions but do not belong to their professional association and/or to the WHD. By limiting circulation of the survey to WHD members, however, we were able to obtain a response rate of 27%; although lower than hoped for, this rate is comparable to the expected response rate for e-mail distributed survey research.²² Low response rates do not necessarily reflect biased reporting.^{23,24} To ensure that our small sample was unlikely to be biased, we took

care to ensure that, in terms of geographical region and practice areas (rural/urban and public/private), the sample was representative both of the WHD membership and of practising physiotherapists in Canada.

Because the survey sample was limited to CPA WHD members and educators, the respondents may have been more aware of professional practice issues than non-CPA members, thanks to regular updates provided by the professional association. By their very nature as engaged respondents, they may have had a higher level of commitment to continuing education than other WHPTs. Finally, recall bias may have affected reporting of how much time clinicians had spent on various topics in post-professional education.

Despite these limitations, as noted above, the sample adequately reflected the demographic distribution of physiotherapists in Canada and the membership distribution within the WHD, and our findings are consistent with those of similar studies conducted in the United States.^{8,9}

CONCLUSION

Our study found that 53% of respondents devoted less than 25% of their workload to treating conditions specific to women. The reason for this low proportion needs further investigation. The most common women's health conditions treated by respondents are related to female urogynecological and musculoskeletal conditions and to health and wellness promotion.

Respondents agreed that entry-level physiotherapy training across Canada should include aging issues, musculoskeletal dysfunction, osteoporosis, and sports injuries in women, while post-professional education should cover extensive female anatomy, obstetrics and gynecology, internal pelvic floor assessment, treatment of urogenital concerns, management of oncology-related conditions such as treatment of post-mastectomy shoulder dysfunction, and wellness and health promotion. Training in research was also recognized as important in post-professional education.

Respondents indicated strong interest in pursuing continuing post-professional education in this area and said they were most interested in certificate programmes or courses that would allow them to work toward an advanced degree through distance education. Several respondents also expressed an interest in an educational approach that combines distance education (i.e., online course delivery) with on-site practical education.

KEY MESSAGES

What is already known on this topic

The practice patterns of Canadian physiotherapists who consider themselves women's health practitioners are not known, nor are the opinions of clinicians or educators on the preferred type(s) of post-graduate educa-

tion offerings in the area of women's health physiotherapy and the topics that are considered entry-level versus post-professional knowledge and skills.

What this study adds

Our findings show that 53% of responding Canadian WHPTs spend 25% or less of their clinical practice time treating women's health conditions. WHPTs mainly treat urogynecological, musculoskeletal, and wellness issues. In accordance with current practices, WHPTs and educators believe that urogynecological assessment and treatment should be taught in post-graduate education environments and not in entry-level programmes. In terms of post-graduate education, in contrast to U.S. findings,⁸ Canadian WHPTs are most interested in working toward certification or advanced degrees and are most interested in a combination of distance learning opportunities combined with on-site practical instruction. Based on these findings, future research should investigate why WHPTs do not tend to work full time in this area and determine the best approach to providing post-graduate educational opportunities to train WHPTs in Canada.

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