Attitudes toward Master's and Clinical Doctorate Degrees in Physical Therapy

Yamini Mistry, BSc (Hon.Kin), MScPT; Christian Francis, BSc (Hon.Kin), MScPT; Jessica Haldane, BPHE, MScPT; Scott Symonds, BKin Hon, MScPT; Erika Ugucioni, BSc (Kin), MScPT; Dina Brooks, PT, PhD; Katherine Berg, PhD

ABSTRACT

Purpose: To examine the attitudes of a self-selected sample of Canadian physical therapists toward the transition from bachelor's to master's degrees and the implementation of clinical doctorate degrees in physical therapy (PT). **Methods:** A cross-sectional survey was conducted using a modified Dillman tailored approach. All eligible members of the Canadian Physiotherapy Association (CPA) were invited to participate. **Results:** Of 1,397 Canadian physical therapists who responded to the survey, 45% favoured the transition from bachelor's to master's degrees, 21% did not, and 34% were neutral; 27% favoured a transition from a master's to a doctoral degree for entry into practice in PT, 53% did not favour this transition, and 20% were neutral. Finally, 56% favoured the implementation of a post-professional clinical doctorate (PPCD) in PT, 23% did not, and 21% were neutral. **Conclusions:** Overall, a self-selected sample of Canadian physical therapists supported the future implementation of a post-professional clinical doctorate degree in PT but did not support an entry-to-practice doctoral degree. However, these results must be interpreted with caution because of the study's small sample size.

Key Words: career choice; education; research; universities.

RÉSUMÉ

Objectif : Analyser les attitudes d'un échantillon autochoisi de physiothérapeutes au sujet du passage du baccalauréat à la maîtrise et de l'application de doctorats cliniques en physiothérapie (PT). **Méthodes :** On a procédé à une étude transversale basée sur une stratégie Dillman personnalisée modifiée. Tous les membres admissibles de l'Association canadienne de physiothérapie (ACP) ont été invités à participer. **Résultats :** Sur 1 397 physiothérapeutes qui ont répondu au questionnaire, 45% étaient pour la transition du baccalauréat à la maîtrise, 21% étaient contre et 34% étaient neutres; 27% étaient pour une transition de la maîtrise au doctorat au niveau débutant en physiothérapie, 53% étaient contre et 20% étaient neutres. Enfin 56% étaient pour la mise en œuvre d'un doctorat clinique postprofessionnel (DCPP) en PT, 23% étaient contre et 21% étaient neutres. **Conclusions :** Dans l'ensemble, un échantillon autosélectionné de physiothérapeutes a appuyé la mise en œuvre future d'un doctorat clinique postprofessionnel en PT mais n'appuyait pas le doctorat au niveau débutant. Il faut toutefois interpréter ces résultats avec prudence à cause de la petite taille de l'échantillon qui a servi à l'étude.

Health care systems in various countries have shifted toward a model of primary health care in which patients have direct access to physiotherapy (PT) services, and physical therapists have increased autonomy and responsibility in both private and public sectors.^{1,2} The scope of PT continues to evolve to reflect advances in research and practice and the need for new expertise in emerging areas.³ For example, there has been a shift toward clinical specialization and advanced practice roles⁴ that require physical therapists to pursue additional post-graduate education. In 2011, the Canadian Physiotherapy Association (CPA) developed its own specialization programme, with a clear description of the competencies to

be demonstrated by a clinical specialist and a transparent process for assessment.⁴

Over the past decade, changes have been made to the education necessary to acquire a PT degree in various jurisdictions across Canada; since 2010, all Canadian PT programmes have been required to offer an entry-to-practice master's degree.⁵ This is a similar trend elsewhere: for example, the American Physical Therapy Association has mandated that all entry-level programmes be at the doctoral level by 2020.⁶ In contrast, entry-level programmes in Australia graduate physiotherapists prepared at baccalaureate, master's, and doctoral levels,⁷ and the United Kingdom continues to offer PT degrees at both baccalaureate and master's levels.⁸

From the Department of Physical Therapy, University of Toronto.

Correspondence to: Dina Brooks, PhD, Professor, Department of Physical Therapy, Canada Research Chair, Rehabilitation in COPD, 160–500 University Ave., Toronto, ON M5G 1V7; dina.brooks@utoronto.ca.

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In contrast to a Doctor of Philosophy (PhD) degree, which is focused predominantly on research, a clinical doctorate is a degree focused on clinical practice.⁹ An *entry-to-practice doctorate* (EPD) focuses on the essential competencies required to enter clinical practice; an example is the Doctor of Physical Therapy (DPT) degree in the United States.⁹ In contrast, a *post-professional clinical doctorate* (PPCD), aimed at those who have graduated and are licensed to practise, is a clinical doctorate that may be associated with greater expertise or specialization. In Canada, there has been limited research examining the transition of entry-level qualifications in PT from a bachelor's-level to a master's-level degree, and there has been no research on whether the change has been beneficial to the health system or to the public. Previous research from the United States¹⁰ and a small-scale study in Canada¹¹ have shown support for a clinical master's degree by physical therapists. In addition, upon evaluation, students with a master's degree demonstrated greater involvement in continuing research and management and proved to be better prepared to practise across a wider spectrum of settings than physical therapists graduating with a bachelor's degree.^{10,11} However, the studies were small and not representative of physical therapists on a national level.

Limited research is available in Canada on the impact of the potential transition from a master's degree programme to a clinical doctorate in PT. A survey conducted in the United States found that both academics and students expressed enthusiasm for a clinical doctorate, which was thought to bridge the gap between theory and practice.¹² In Canada, Mathur has argued for a transition toward a clinical doctorate on the grounds that the current PT curriculum is considered just as rigorous as clinical doctorates in other health care professions and warrants recognition as such.⁹ Entry-level PT programmes in the United States have been shown to be similar to doctoral-level programmes in other health care professions.¹³ In contrast, some authors have highlighted potential drawbacks of clinical doctorates in PT: these include an increase in salary, which may reduce the number of jobs available and increase the reliance on physiotherapy support personnel⁹; and confusion among the public, as well as other health care professionals, resulting from a change in title, which may also be viewed by others as the profession trying to buy legitimacy through doctoral credentials.¹⁴ In one study, academics expressed ambivalence and scepticism regarding the value of a clinical doctorate relative to a PhD, which is seen as the "gold standard."¹²

The purpose of our study, therefore, was to examine the attitudes of a self-selected sample of Canadian physical therapists toward professional master's and clinical doctorate degrees in PT and to discover how professional characteristics (e.g., years of experience, level of education, province, employer status, and type of practice) affected these attitudes.

METHODS

Study design

We conducted a cross-sectional survey to determine Canadian physical therapists' attitudes toward professional master's and clinical doctorate degrees in PT. Our online questionnaire was created through SurveyMonkey; the CPA sent eligible participants a link to the survey by email.

Participants, sampling, and recruitment

Eligible participants were registered physical therapists who were members of the CPA, had provided a valid email address, and had Internet access. We excluded students, physiotherapist assistants (PTAs), PTA students, and affiliate members of the CPA.

A total of 9,866 physical therapists met the inclusion criteria. Information about the study was sent to the CPA; the CPA then sent the initial email invitation to only those members who met the inclusion criteria.

Protocol

The study used a modified Dillman tailored study design.¹⁵ After the study was approved by the Research Ethics Board at the University of Toronto, the questionnaire link was first emailed to eligible CPA members in February 2012; the link was sent to members three more times at 2-week intervals. The initial email included a brief outline and explanation of the study, as well as the link to the questionnaire; subsequent emails thanked those who had already completed the survey and reminded those who had not to complete the survey and provided a link to the questionnaire. Completed questionnaires were accepted until June 2012.

Questionnaire

The primary investigators developed the questionnaire based on similar research¹⁶ and consultation with academic experts. The conceptual framework of Threlkeld and colleagues helped guide the development of subcategories and the questions within each subcategory.¹⁴

The questionnaire had four sections (see Appendix 1 online): Section A elicited demographic information; Section B examined attitudes toward the transition from a bachelor's to a master's degree in PT at the entry-level qualification; Sections C and D examined attitudes toward EPD and PPCD degrees respectively. Subcategories in each section explored the impact of these educational changes on the physical therapists themselves, the health care system, and the PT profession. For sections B–D, respondents rated their level of agreement with each item using a 5-point Likert-type scale (1 = strongly disagree; 5 = strongly agree).

The questionnaire was pilot-tested with five registered physical therapists (1 academic physical therapist, 1 advanced practice leader, and 3 clinicians) to ensure that items were clear and readable, that the content was appropriate, and to estimate the time required to complete the questionnaire. The questionnaire took about 10–15

minutes to complete. Minor wording modifications were made to the questionnaire based on feedback received from pilot-testing.

The questionnaire provided definitions of the following terms: *attitude* (a representation of a person's manner, disposition, or feeling of like or dislike for something), *clinical doctorate degree* (an umbrella term used to capture both EPD and PPCD degrees), *EPD* (an entry-level degree that prepares students with the competencies required to enter clinical practice¹⁷), and *PPCD* (an optional degree in advanced or specialized clinical competencies for professionals who have graduated with another entry-level qualification, such as a bachelor's or master's degree¹⁷).

Participants provided implied informed consent by submitting the questionnaire. No personal identifiers were included in the submitted questionnaires.

Data analysis

Descriptive statistics were used to describe the sample and to examine participants' attitudes toward the transition from bachelor's to master's qualifications and toward clinical doctorates in PT. Responses were collapsed into one of three categories: favoured (F), neutral (N), or did not favour (DNF) (i.e., all responses of 1 and 2 were collapsed into the DNF category, and all responses of 4 and 5 were collapsed into the F category); those who indicated a neutral attitude were not considered when describing trends in the data. Chi square statistics were used to compare those in favour of an EPD to those in favour of a PPCD, which were not mutually exclusive categories. We then calculated one-way ANOVAs and post-hoc Tukey analyses to examine the effect of (1) level of education, (2) years of practice, (3) province of graduation, and (4) type of practice on respondents' attitudes toward the transition from bachelor's to master's degrees and their level of support for EPD and PPCD degrees in PT. Using an independent samples *t*-test, we also examined the effect of employer status on attitudes toward the degrees (EPD and PPCD).

RESULTS

Sample demographics

Of 9,866 Canadian physical therapists who received the survey link, 1,397 completed the questionnaire for a 14% response rate. Table 1 summarizes respondents' demographic characteristics.

Attitudes toward transition from bachelor's to master's degrees

Overall, respondents believed that the transition from bachelor's to master's degrees for entry to practice was a positive change (45% F, 34% N, 21% DNF; see Figure 1).

Respondents did not believe that a master's degree has an impact on clinical reasoning (29% F, 30% N, 41% DNF), improves leadership (24% F, 41% N, 35% DNF), or enhances professionalism (28% F, 34% N, 38% DNF); respondents did perceive that a master's degree improves

Table 1 Participant Demographic Information ($n = 1,429$)

Characteristics	No. (%)
Sex	
Male	257 (19.2)
Female	1083 (80.8)
Province of graduation	
Alberta	161 (13.0)
British Columbia	133 (10.8)
Manitoba	68 (5.5)
Nova Scotia	89 (7.2)
Ontario	641 (51.9)
Quebec	78 (6.3)
Saskatchewan	65 (5.3)
Year of birth	
Before 1949	58 (4.4)
1950–1959	287 (21.5)
1960–1969	326 (24.5)
1970–1979	370 (27.8)
1980–1989	292 (21.8)
Years of practice	
0–5	278 (20.6)
6–10	190 (14.0)
11–15	161 (11.9)
16–20	151 (11.2)
>20	573 (42.4)
Highest degree earned	
Diploma	70 (5.3)
Bachelor's	724 (54.4)
Master's	477 (35.8)
Doctorate	20 (1.4)
PhD	41 (3.1)

the ability to apply research in a clinical setting (52% F, 28% N, 20% DNF).

This sample of Canadian physical therapists did not believe that the transition to a master's degree affected the health care system in the sense of leading to a more defined scope of practice (15% F, 48% N, 37% DNF), greater recognition of the profession in the health care system (25% F, 42% N, 33% DNF), improved quality of care (13% F, 35% N, 52% DNF), or increased costs (11% F, 60% N, 29% DNF). Respondents agreed, however, that the shift has had a positive impact on public perception of the physical therapy profession (37% F, 31% N, 32% DNF). They did not believe that the transition lead to greater earning potential (26% F, 23% N, 51% DNF) or created a hierarchy within the profession (26% F, 23% N, 51% DNF).

Attitudes toward doctoral degrees in physical therapy

Overall, respondents were significantly more supportive of implementing a PPCD than an EPD ($p < 0.001$;

Figure 1 Overall degrees of support for the implementation of a PPCD (Question 26), the implementation of an EPD (Question 22), and the transition from BSc to MSc (Question 18).

see Figure 1). They viewed the transition toward an EPD as having a positive impact on physical therapists' ability to apply research in a clinical setting (51% F, 23% N, 26% DNF). Respondents leaned toward agreeing that this transition would lead to greater recognition of the profession (34% F, 36% N, 30% DNF) but also felt it would increase costs within the health care system (34% F, 47% N, 19% DNF). Finally, they agreed that an EPD would alter the role of physiotherapists (43% F, 29% N, 28% DNF) and create a hierarchy within the profession (59% F, 22% N, 18% DNF), but that it would also improve public perceptions (43% F, 29% N, 28% DNF), improve private-sector competitiveness (45% F, 26% N, 29% DNF), and increase international recognition of the PT profession (41% F, 35% N, 24% DNF).

Respondents broadly favoured the transition to a PPCD in all subcategories (i.e., for the physical therapist, the health care system, and the profession), but with respect to the health care system, they did not expect it to produce a more defined scope of practice (25.1% F, 45% N, 30% DNF).

Demographic characteristics versus attitudes toward the transition from bachelor's to master's degrees

As years of practice increased, respondents were less supportive of the transition from bachelor's to master's degrees: those with 0–5 or 6–10 years of practice were more supportive, while those with 11–15, 16–20, and

>20 years of practice were more neutral. We found significant differences ($p < 0.01$) between all cohorts (see Figure 2).

Respondents who graduated in Ontario were most supportive of this transition, while graduates from Manitoba were least supportive (see Figure 3). We found significant differences in attitudes between respondents from Alberta and Ontario ($p = 0.002$), Manitoba and Ontario ($p = 0.001$), and Manitoba and Quebec ($p = 0.027$).

Respondents' employer status (i.e., those who are employers vs. those who are not) did not affect their level of support for this transition ($p = 0.44$).

Demographic characteristics versus attitudes toward EPD

Respondents with a bachelor's degree were more neutral toward the transition from a master's degree to an EPD, while those with a master's, doctorate, or PhD degree were more supportive (see Figure 4). There was a significant difference in positive attitudes between the different levels of education ($p < 0.0001$), except between respondents with master's and doctoral degrees ($p = 0.15$) and between those with master's degrees and PhDs ($p = 0.86$).

As years of practice increased, respondents were less supportive of a transition from a master's degree to an EPD. Respondents with 0–5 years of practice were more positive, while those with >6 years of practice were more negative (Figure 2). Employer status and province of

Figure 2 Years of practice vs. support for degree transition. y-axis: 1 = strongly disagree, 3 = neutral, 5 = strongly agree; $p < 0.05$ for all results.

Figure 3 Province of graduation vs. support for degree transition (y-axis: 1 = strongly disagree, 3 = neutral, 5 = strongly agree); $p < 0.05$ for attitudes toward master's degrees from respondents in AB, MB, and ON.

Figure 4 Highest degree completed vs. support for degree transition (y-axis: 1 = strongly disagree, 3 = neutral, 5 = strongly agree); $p < 0.05$ for all results except attitudes toward master's degree and PPCD from respondents with a diploma and attitudes toward PPCD from those with a bachelor's degree.

graduation did not affect overall attitudes toward a transition from a master's degree to an EPD ($p = 0.12$ and $p = 0.19$ respectively).

Demographics versus attitudes toward PPCD

Support for the implementation of a PPCD degree in PT increased with level of education; respondents with a doctoral degree expressed the most support (see Figure 4). We found a significant difference in attitudes between different levels of education ($p < 0.0001$), except when comparing respondents with a bachelor's degree to those with a diploma ($p = 0.09$; see Figure 4).

Respondents with 6–10 years of practice expressed the greatest level of support for a PPCD. There was a significant difference in attitudes across years of practice ($p < 0.0001$), except between respondents with 0–5 years of experience and those who had been in practice for 16–20 years ($p = 0.99$; see Figure 2).

Employer status and province of graduation did not significantly affect overall attitude toward a transition from a master's degree to a PPCD ($p = 0.58$ and $p = 0.13$, respectively).

The level of support for the implementation of doctoral degrees differed significantly between respondents working in acute care and those in private practice ($p < 0.0001$): acute-care physical therapists were more negative, while respondents working in sole- and multi-practitioner private practice were more neutral toward the prospect of an EPD. Respondents from all three of these practice areas were more supportive of a PPCD than an EPD.

DISCUSSION

This is the first study to examine the attitudes of a self-selected sample of Canadian physical therapists toward the implementation of professional master's and doctoral degrees in PT. Our findings indicate support for some aspects of the transition to an entry-level master's degree in Canada. Respondents expressed greater support for a PPCD than for an EPD degree in PT.

Respondents felt that a master's degree improves physical therapists' ability to apply research in clinical settings, echoing Warren and colleagues' findings in the United States that master's students were expected to demonstrate greater involvement in continuing research.¹⁰ However, the impact of an entry-to-practice master's degree on thesis-based post-graduate programmes has not been assessed; a master's entry-to-practice degree could decrease the number of Canadian trained physical therapists entering the post-graduate research stream, potentially eroding the evidence base in the field of PT. Furthermore, respondents did not agree that the transition to a master's degree enhances clinical reasoning, leadership, or professionalism, possibly because these skills are developed from practice experience. Therefore, before any further credentialing changes are made, a full evaluation of the impact of the change to a master's degree should be undertaken.

In addition, our respondents did not believe that the transition to a master's degree has had a positive impact on the health care system with respect to a more defined scope of practice. In other health care professions, such as optometry and podiatry, a primary motivator for changes in educational models was to increase autonomy and improve service delivery.¹⁸ It may be that the PT profession in Canada was already autonomous and provided good service delivery, and thus, the transition to a master's degree was not seen as bringing about such changes.

Attitudes toward doctoral degrees in PT

The majority of respondents felt that a PPCD would have a positive impact on both the health care system and the PT profession. The greater support for a PPCD may be due to its association with skills well beyond essential competencies.¹⁹ Additional perspectives can be gained from exploring the literature on clinical doctorates in nursing and occupational therapy; although there is an overall support for a clinical doctorate within these professions, professionals in these fields have concerns regarding the cost of hiring doctoral level practitioners.^{20–22} Similarly, respondents in our study expressed concerns about increased costs to the health care system with the implementation of a doctorate in PT. Although many respondents had positive attitudes toward implementing a PPCD, we did not see overall agreement that it would result in a more defined scope of practice. Therefore, careful consideration and further research are needed before implementing such a programme.

Respondents with <10 years of experience in practice were more supportive of implementing a PPCD, while those with >10 years of experience reported neutral attitudes. Similarly, Sran and colleagues concluded that physical therapists within 10 years of graduation have a more positive attitude toward continuing education.¹¹ Members of our sample who graduated in Ontario—the first province to transition to an entry-to-practice MSc—expressed the strongest support for that shift, while those from Manitoba, the last province to transition, expressed the least support. Since the transition to a master's degree in Canada has taken more than a decade across all provinces,⁵ physical therapists' attitudes may be affected by how recently the transition occurred for them.

Level of education influenced respondents' level of support for the implementation of doctoral degrees: only those with a doctorate supported an EPD, while those with a PhD expressed the least support for the implementation of a PPCD. This finding is congruent with evidence from the nursing literature; holders of PhDs view clinical doctorates as a threat to evidence-based research, believing that individuals will pursue a clinical doctorate as their terminal degree.²⁰

Private practitioners expressed more support than acute-care (hospital) practitioners for both EPD and PPCD degrees. Mathur suggested that the increased cost of hiring doctorate-educated practitioners in acute care could lead

to an influx of less educated assistants to absorb the cost of the elevated salary⁹; this shift could lead to a reduction in the quality of patient care, as less educated assistants would provide most of the direct care.¹² However, accreditation standards for Canadian occupational and physiotherapist assistant education programmes outline the specific competencies for entry-level practitioners,²³ and assistants are therefore unlikely to take on responsibilities that fall with the scope of physiotherapy. Among respondents working in sole- and multi-practitioner private clinics, support for both types of doctoral degree may be attributed to a belief that doctorate-level education would increase autonomous practice, increase leadership skills, and broaden the array of skills possessed. These same beliefs have been echoed in other health care professions arguing in favour of transitioning to a doctoral degree.²¹ Finally, the impact of a doctorate on internationally educated PTs coming to Canada with a bachelor's degree was not explored in this study but requires attention, as it would result in further widening the gap between immigrant physical therapists and those who are locally trained.

Our study has several limitations. First, the questionnaire was not bilingual, which may have contributed to the low response rate and under-representation of physical therapists in the province of Quebec. In addition, our respondent pool was limited to CPA members, who are not necessarily representative of the Canadian physiotherapy population. Our response rate was very low (14%), which indicates that the findings cannot be generalized to all CPA members, but is similar to that of an Australian study that used the national physiotherapy association to disseminate an online questionnaire (approximately 8%).²⁴ In fact, according to research on reliability and recruitment in Internet surveys, the average expected response rate is between 0.24%²⁵ and 0.75%.²⁶ Despite the low response rate, responses for each wave of reminders in the Dillman method reflected similar opinions. We compared the percentage of respondents who strongly agreed or agreed with the implementation of a PPCD, the implementation of an EPD, and the transition from a BSc to a MSc across the four waves of requests to respond; differences were <3%, and a one-way ANOVA showed that the difference was insignificant ($p = 0.56$). This may indicate that late responders—and, by extension, non-responders—are likely to have similar opinions to responders. Of those who responded, a large number chose the neutral category; for example, 42% were neutral toward whether the transition to a master's degree has affected the health care system. It is difficult to understand whether these responses indicate true neutrality or a lack of opinion or complacency about the issue.

CONCLUSION

Our self-selected sample of Canadian physical therapists expressed support for the future implementation

of a PPCD. They perceived the transition from bachelor's to master's degrees for entry-to-practice as helping to integrate research into the clinical setting, but they did not believe that it has had an impact on the health care system or improved clinical reasoning, leadership, or professionalism. Conversely, a PPCD was perceived not only to help integrate research into the clinical setting, but also to have a positive impact on the health care system and the PT profession. Overall, it appears that this sample of Canadian physical therapists supports the implementation of a PPCD on the grounds that it would enhance both the health care system and the profession. While these findings must be interpreted with caution due to our small sample size, our study nevertheless highlights potential discrepancies between educational policy and professional reality within the Canadian workforce and points to areas where further investigation is warranted. Future discussions aimed at determining entry-level credentials should include not only academics but also clinicians, other health care partners, policy makers, employers, and provincial and national professional associations.

KEY MESSAGES

What is already known on this topic

In response to the changes in the Canadian health care systems and the physical therapy (PT) scope of practice, Canadian PT programmes have transitioned from bachelor's to master's degrees. Similar shifts have occurred elsewhere in the world. However, PT programmes in similar countries are also transitioning to a doctoral degree. No studies have examined Canadian practitioners' attitudes toward the transition from bachelor's to master's degrees or the implementation of doctoral degrees in PT.

What this study adds

Our study provides insight into some physical therapists' attitudes toward both the educational changes that have already taken place and those that may be proposed in the future. Overall, respondents expressed support for the future implementation of a post-professional clinical doctorate; the majority did not support the implementation of an entry-to-practice doctoral degree.

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