Demographic Characteristics of Applicants to, and Students of, Ontario Physiotherapy Education Programs, 2004–2014: Trends in Gender, Geographical Location, Aboriginal Identity, and Immigrant Status

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ABSTRACT

Purpose: The authors analyzed the demographics of potential future physiotherapists to determine whether they were representative of the Canadian population. The specific objectives were to examine selected demographic variables from all applicants to and students in Ontario English-language Master of Physical Therapy programmes in admission cycles 2004–2014, inclusive, and to analyze the results as compared with Canadian population data.

Method: Anonymized applicant records ($n = 14,135$) were obtained for admission cycles 2004–2014, inclusive. Variables examined for applicants and students included their gender, geographical location from Canadian and international regions, Aboriginal identity, and immigrant status. A descriptive analysis of counts and proportions was conducted for all variables. **Results:** The majority of applicants were women (70%), from southern Ontario (73%), and Canadian born (82%). Aboriginal and rural applicants made up small proportions of the applicant pool (1% and 12%, respectively). The number of applicants from British Columbia was proportionally high relative to those from other Canadian provinces. **Conclusion:** Although Ontario's physiotherapy education programmes remain female dominated, the demographics of applicants and students are otherwise mostly representative of the diverse Canadian population, although very low in the number of Aboriginal peoples. Further research is needed to understand the diversity and composition of the Canadian physiotherapy workforce.

Key Words: demographic analysis; school admission criteria; students; health occupations.

RÉSUMÉ

Objectif: analyser les données démographiques des potentiels futurs physiothérapeutes afin de déterminer s'ils sont représentatifs de la population canadienne. L'objectif principal était d'examiner certaines variables démographiques de tous les candidats et étudiants aux programmes de maîtrise en physiothérapie de langue anglaise de l'Ontario des cycles d'admission de 2004 à 2014 inclusivement et d'analyser les résultats comparativement aux données sur la population canadienne. **Méthodes:** les dossiers de candidature anonymes ($n = 14\,135$) ont été obtenus pour les cycles d'admission de 2004 à 2014 inclusivement. Les variables examinées incluaient le sexe, la région de provenance au Canada ou à l'étranger, l'identité autochtone et le statut d'immigrant. Une analyse descriptive des comptes et des proportions a été effectuée pour toutes les variables. **Résultats:** la majorité des candidats étaient des femmes (70 %), venaient du sud de l'Ontario (73 %) et étaient nés au Canada (82 %). Les candidats autochtones et des régions rurales représentaient de petites proportions du bassin de candidats (1 % et 12 %, respectivement). Proportionnellement parlant, le nombre de candidats provenant de la Colombie-Britannique était élevé comparativement aux autres provinces canadiennes. **Conclusion:** bien que les programmes universitaires en physiothérapie de l'Ontario comportent une majorité de femmes, les données démographiques des candidats et des étudiants sont autrement assez représentatives de la diversité de la population canadienne, exception faite du très faible nombre d'autochtones. D'autres recherches sont nécessaires pour comprendre la diversité et la composition de la main-d'œuvre en physiothérapie au Canada.

Physiotherapy education in Canada began at McGill University in 1916.¹ The program was a 1-year course designed to train personnel to assist with the rehabilitation of wounded soldiers. In 1929, it became a 2-year

diploma program and was offered at multiple institutions across the country, including the University of Toronto.¹ Physiotherapy education programmes transitioned to the master's degree level in the 21st century.

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In recent years, physiotherapy master's programmes across Ontario have become increasingly competitive, with students from across Canada applying to one or more programmes.

In the early years of the profession, only women were admitted to physiotherapy education programmes. Admission of male students began in 1954, when physiotherapy became a baccalaureate program at multiple universities.¹ Today, physiotherapy remains a female-dominated profession in Canada.² This is also true for most, but not all, other countries.³ The Canadian Institute for Health Information (CIHI) collects information about the physiotherapy profession, but analysis of the demographics of physiotherapists has been limited to gender and age.² Although CIHI also reports on the percentage of Canadian physiotherapists who are foreign educated, it is only one dimension of diversity in a workforce. There is a lack of published reports regarding any other demographics that would enable a deeper understanding of the diversity of Canadian physiotherapists.

Canada is a multicultural nation with a population composed of persons of a variety of immigrant ethnicities, Aboriginal persons, and Canadian-born persons descended from previous generations of immigrants. The Canadian health care workforce should be representative of the Canadian population to provide culturally competent care.⁴ The number of immigrants from non-European countries has increased in the past 40 years,⁵ resulting in an increased number of health care professionals with diverse ethnic and cultural backgrounds. In addition, health care professionals are providing services to an increasingly diverse population across the country. Relative to the overall Canadian physiotherapy workforce, few physiotherapists in Canada practise in rural or remote locations, and there is growing interest in facilitating the growth of physiotherapists practising in these communities.⁶ Northern Ontario faces unique health care challenges compared with other areas of Ontario and other parts of the country, including a shortage of rehabilitation professionals and physiotherapists.⁶ Therefore, it is of interest to examine the demographics of both individuals applying to Ontario physiotherapy education programmes and those individuals gaining entrance. Analysis of this type of demographic information is relevant in assessing whether admission processes are just and fair and whether the composition of the Ontario physiotherapy student body is representative of the province's population.

The purpose of this study was to analyze the demographics of individuals applying to and entering Ontario English-language physiotherapy master's degree programmes over an 11-year period. This analysis was made possible by analyzing data collected by the Ontario Rehabilitation Sciences Programs Application Service (ORPAS), an online system that applicants use to apply to Ontario universities that offer educational programmes

in physiotherapy, occupational therapy, speech-language pathology, and audiology. We examined the following variables: applicants' gender, Aboriginal and immigrant self-identification, geographical location and population-centre size of the apparent home community, and whether applicants' geographical location was in Canada or elsewhere in the world.

METHODS

Obtaining data and ethics review

We obtained data from ORPAS, a service of the Ontario Universities' Application Centre (OUAC). OUAC is an organization that processes applications for admission to all full-time Ontario undergraduate university programmes as well as other professional programmes, including rehabilitation sciences. The specific data files obtained from ORPAS were anonymized historical archive files for the 2004–2014 admission cycles. The historical archive files contained a subset of the original data fields collected for the purpose of administering the admission process at participating universities; records had been anonymized by excluding fields such as applicant name, full address, and contact information. The Queen's University General Research Ethics Board provided ethical clearance for this project as a secondary analysis of data initially collected for administrative purposes.

We filtered the data to include only records of individuals who had applied to one or more physiotherapy programmes at McMaster University, Queen's University, University of Toronto, and Western University from 2004 to 2014. We excluded applications to the University of Ottawa because it had not used ORPAS continuously since its inception and because, unlike the other Ontario universities, it offers a French-language program. We selected the start year of 2004 because it was the first cycle in which all four of the universities admitted students to master's-level programmes in physiotherapy.

Variables of interest

Gender

ORPAS identifies the applicants' gender by using the description "sex declared" with the self-reported choice of male or female.

Geographical region and population-centre size

ORPAS requires only a mailing address; home address is optional. The historical archive preserves only postal codes. If an applicant's home postal code was not present, we used the mailing postal code. We based the geographical classification of Ontario applicants on the following definition:

Northern Ontario is comprised of 10 territorial districts (145 municipalities): Kenora, Rainy River, Thunder Bay, Cochrane, Algoma, Sudbury, Timiskaming, Nipissing, Manitoulin, and Parry Sound. This area covers over 800,000 square kilometres, representing nearly 90 percent

of the Province of Ontario's land area. It extends across two time zones, from the southern boundary of the District of Parry Sound, north to Hudson Bay and James Bay, and westerly from Quebec to the Manitoba border.^{7(p.4)}

Geographical regions identified by postal code of primary address were grouped into the following categories: British Columbia, the Prairies (Alberta, Saskatchewan, Manitoba, Yukon, Northwest Territories, Nunavut), Northern Ontario (as defined above), Southern Ontario, Eastern Canada (Quebec, New Brunswick, Nova Scotia, Newfoundland and Labrador, Prince Edward Island), and International (all locations outside Canada). Although the three provinces and three territories combined as the Prairies are all quite different from one another and not all prairie in landscape, we combined them because of the low number of applicants and students from them and because they are geographically contiguous.

To classify applicants by population-centre size, we used their primary postal code. We used Statistics Canada's definitions of rural area (all areas outside population centres), small population centre (1,000–29,999 people), medium population centre (30,000–99,999 people), and large urban population centre ($\geq 100,000$ people).⁸ We classified Canadian applicants with unclassified postal codes as "Canadian, Size Uncertain." We classified applicants from the United States and other countries as "US/International."

Aboriginal identity

ORPAS applicants had the option of declaring Aboriginal identity. Because it is an optional field, applicants can either bypass it or answer "yes" to indicate their Aboriginal identity. The ORPAS field descriptor is consistent with how Statistics Canada and other national organizations define *Aboriginal* in Canada; that is, Aboriginal people are persons of indigenous ancestry—First Nations, Métis, or Inuit peoples. However, the ORPAS application process does not allow applicants to specify with which Aboriginal peoples they identify.

Immigrant status

ORPAS applicants who indicated immigrant status were asked to indicate year of entry into Canada. If blank, applicants were classified as born in Canada.

Subject definitions

An applicant was defined as any individual who had applied to one or more physiotherapy programmes through ORPAS in the cycles between the years 2004 and 2014. A student was defined as an individual who had accepted an offer of admission to one of the four physiotherapy programmes.

Data analysis

We conducted filtering and calculation of counts using SPSS version 22 (SPSS Inc., Chicago, IL). Additional

calculations of percentages were made in Microsoft Excel 2013 (Microsoft Corporation, Redmond, WA). For each application cycle, we counted the number of applicants as a whole and in each category (gender, geographical region, population-centre size, Aboriginal identity, and immigrant status). We analyzed data using descriptive statistics. We maintained anonymity during data analysis by collapsing categories that contained very small cell counts of individuals.

RESULTS

Gender

Between 2004 and 2014, the percentage of men applying to physiotherapy programmes through ORPAS has generally increased (see Figure 1a). Of the 1,019 individuals who applied to Ontario physiotherapy education programmes in 2004, 291 were male, making up 28.6% of the applicant pool. In 2014, of the 1,629 applicants, 587 were male, making up 36.0% of the applicant pool. Similarly, the number of male students increased, from 58 of

Figure 1 (a) Percentage of female and male applicants to Ontario physiotherapy education programmes, 2004–2014, and (b) percentage of female and male students entering Ontario physiotherapy education programmes, 2004–2014.

Figure 2 (a) Number of applicants to, and students entering, Ontario physiotherapy education programmes from northern and southern Ontario, 2004–2014, and (b) number of applicants to, and students entering, Ontario physiotherapy education programmes from geographical regions outside Ontario, 2004–2014.

230 (25.2%) in 2004 to 99 of 302 (32.8%) 10 years later (see Figure 1b).

Geographical region and population-centre size

Of the 14,135 individuals who applied to Ontario physiotherapy programmes from 2004 to 2014, 577 applicants had postal codes from northern Ontario; thus, northern Ontario applicants appeared to make up approximately 4.1% of the applicant pool. Of the 577 northern Ontario applicants, 159 attended an Ontario physiotherapy programme, meaning that approximately 6.3% of the total 2,514 Ontario physiotherapy students (5.4% of all students) appeared to come from northern Ontario. There were 10,370 (73.4%) applicants with postal codes from southern Ontario, of whom 2,355 went on to become students (80.5% of all students; see Figure 2a). In examining the raw counts and percentages, the values from northern

Ontario fluctuated, but there was no visible pattern over the 2004–2014 cycles (data not shown).

Of the 14,135 applicants, 3,188 (22.6%) had postal codes from outside Ontario: 1,056 (7.5%) from eastern Canada, 740 (5.2%) from the Prairies, 1,232 (8.7%) from British Columbia, and 160 (1.1%) from outside Canada. Of the 2,924 students, 171 (5.8%) had postal codes from eastern Canada, 92 (3.1%) had postal codes from the Prairies, 137 (4.7%) had postal codes from British Columbia, and 10 (0.3%) had postal codes from outside Canada (see Figure 2b).

Of the 14,135 applicants, 1,708 (12.1%) had postal codes from rural areas, 917 (6.5%) had postal codes from small population centres, 911 (6.4%) had postal codes from medium population centres, 10,105 (71.5%) had postal codes from large urban population centres, 334 (2.4%) had postal codes from size-undetermined Canadian locations, and 160 (1.1%) had postal codes from outside Canada (see Figure 3). Of the 2,924 students who entered the programmes in the same application cycles, 434 (14.9%) had postal codes from rural areas, 213 (7.3%) had postal codes from small population centres, 199 (6.8%) had postal codes from medium population centres, 2,017 (69.0%) had postal codes from large urban population centres, 51 (1.7%) had postal codes from Canadian locations of undetermined size, and 10 (0.3%) had postal codes from outside Canada.

Aboriginal identity

Of the 14,135 applicants, 112 (0.8%) self-identified as Aboriginal, and 14,023 (99.2%) did not. Of these 112, 31 persons accepted an offer of admission to become students, representing 1.1% of total students; 2,893 (98.9%) of students did not self-identify as Aboriginal (see Figure 4).

Immigrant status

Of the 14,135 applicants, 11,620 (82.2%) were born in Canada, and 2,515 (17.8%) had immigrated to Canada (see Figure 5a). Of the total number of applicants, 2,924 went on to become students; of these, 2,570 (87.9%) were born in Canada, and 354 (12.1%) had immigrated (see Figure 5b).

The relative number of applicants of immigrant status to total applicants did not show any trend for change between 2004 and 2014 other than a seemingly anomalous year in 2006. In 2004, 18.6% of the applicant pool was composed of immigrants; this number dropped to 3.2% in 2006 and came back up to 17.0% in 2014 (Figure 5a). The relative number of students of immigrant status compared with total students showed no trend for change over the 10-year period. In 2004, 10.9% of all students were immigrants to Canada; the percentage dropped to 3.4% in 2006 and came back up to 11.9% in 2014 (Figure 5b).

Figure 3 Number of applicants to, and students entering, Ontario physiotherapy education programmes, 2004–2014, by population-centre size.

Figure 4 Number of self-declared Aboriginal applicants to, and students entering, Ontario physiotherapy education programmes, 2004–2014.

DISCUSSION

Although applicants to and students in English-language Master of Physical Therapy programmes in Ontario have remained predominantly female, the percentage of men appears to have generally increased over the decade studied. The number of students entering these master's degree programmes appears to be proportional to the populations of northern and southern Ontario. Of note is that, beyond Ontario, the second-highest number of applicants indicated British Columbia as their province of origin. Rural communities also appear to be proportionally represented in the applicant pool relative to rural populations in Canada. Aboriginal peoples make up a very small percentage of English-language Master of Physical Therapy applicants and

Figure 5 (a) Number of immigrants and Canadian-born applicants to Ontario physiotherapy education programmes, 2004–2014, and (b) number of immigrants and Canadian-born students entering Ontario physiotherapy education programmes, 2004–2014.

students in Ontario. Finally, the low proportion of people of immigrant status applying to these programmes appears to be the reason for the limited number of students of immigrant status graduating into the physiotherapy workforce.

Gender

CIHI began reporting the percentages of the physiotherapy workforce who are female and male starting in 2007 and continuing to 2014.^{2,9} These percentages have progressively shifted from 78.7% female and 21.3% male in Canada in 2007 (79.9% and 20.1%, respectively, in Ontario) to 75.8% female and 24.2% male in Canada in 2014 (75.7% and 24.3%, respectively, in Ontario). In this study, the majority of students reported for each cycle would have become part of the workforce 2 years after their admission cycle. Because the percentage of men is higher in the student cohorts (see Figure 1b) than in the workforce, the entry of new graduates from the Ontario programmes has likely been a major contributing factor in the rising percentage of male physiotherapists in the Ontario workforce and, to a lesser extent, the Canadian workforce.

The rising proportion of men is in contrast to the general shift in their proportions in university education in Canada. Statistics Canada reported that the female-to-male percentages for university undergraduate enrolment were, respectively, 56% and 44% in 1997–1998 and 57% and 43% in 2007–2008; the corresponding percentages for graduate enrolment were, respectively, 47% and 53% in 1997–1998 and 51% and 49% in 2007–2008.¹⁰ Thus, the rise in the proportion of men applying to, and entering, physiotherapy education programmes runs counter to the general trend toward a lower proportion of men participating in university education in Canada.

Geographical region and population-centre size

It has been well documented that northern Ontario faces unique health care challenges in comparison with other areas of the province. These challenges include, but are not limited to, a higher prevalence of chronic disease, lower life expectancy, lower self-perceived health status, higher rates of hospitalization because of injury, and decreased accessibility of health care resources.^{7,11} In addition, the recruitment of rehabilitation professionals, such as physiotherapists, occupational therapists, and speech-language pathologists, to northern Ontario continues to be a barrier to achieving health care equity across the province.⁶ The relatively poorer health outcomes in northern Ontario, combined with an aging population, support the need for physiotherapists in this region, yet only 8% of physiotherapists practise in rural areas such as northern Ontario.⁶ Recent research found that recent physiotherapy graduates who were raised in northern Ontario are 3.3 times more likely to practise in northern Ontario than graduates who were raised in

urban centres.⁶ In light of these findings, it is important to consider whether physiotherapy programmes in Ontario are admitting an appropriate number of applicants from northern Ontario.

The number of applicants from northern Ontario has increased slightly each year since 2010, with the greatest number of students entering programmes in 2014. Individuals from northern Ontario made up 4.1% of the applicant pool and 5.4% of students. In comparison, 73.4% and 80.5% of applicants and students, respectively, were from southern Ontario. Currently, approximately 6% of the Ontario population resides in northern Ontario,^{8,12,13} indicating that the proportions of program applicants and students are similar to the proportions of individuals living in northern Ontario. Of the Ontarians who report French as their mother tongue, 20.3% reside in northern Ontario, although only 6% of Ontario's population lives there.¹⁴ Because northern Ontario has a significant proportion of individuals with French as their mother tongue, it is important to note that our data may underreport northern Ontario applicants to and students in physiotherapy education generally. French-speaking individuals from northern Ontario may have applied only to the University of Ottawa's French-language physiotherapy education program, which was not included in our analysis of English-language programmes. Despite the possibility of underrepresentation, there does not appear to be a bias against accepting applicants from northern Ontario into English-language Ontario physiotherapy programmes.

A trend of interest is the number of applicants and students indicating a home or mailing address in British Columbia. Each year, applicants and students from British Columbia outnumber applicants and students from all other locations, with the exception of Ontario. Of Canadian-educated physiotherapists, only 36.9% of those employed in British Columbia in 2012 were educated in that province; 25.6% of physiotherapists were educated in Ontario.⁹ Furthermore, the number of applicants and students from British Columbia increased 137% and 320%, respectively, in 2005 and 2014.

Currently, research on why students choose to leave their home province to pursue post-secondary education is lacking; therefore, it is not known why applicants and students, especially individuals from British Columbia, are pursuing entrance to Ontario physiotherapy programmes. We can speculate that one reason why individuals pursue physiotherapy programmes in Ontario, rather than (or in addition to) their home province, territory, or country, may be the high number of programmes offered in English: Ontario offers four. In addition, Ontario English-language physiotherapy programmes do not grant preference to applicants from Ontario. In contrast, several other Canadian English-language physiotherapy programmes give preference

to students of a certain geographical origin (generally the home province), such as the University of British Columbia and Dalhousie University, which give preference to applicants from British Columbia and the Atlantic provinces, respectively. Further research is required to fully explore and understand the factors involved in the decision of some students to pursue physiotherapy education outside their home province.

Statistics Canada has estimated that as of 2011, approximately 14% of Ontario's population live in a rural setting and that the remaining 86% live in population centres with more than 1,000 people.⁸ Rural communities in Ontario, many of which are northern, have unique health care needs that can pose a challenge when attempting health care planning, funding, and delivery. There is a constant need for health care professionals in rural communities, and as a result, the Rural and Northern Health Care Panel has made recruitment of health care professionals to these areas a focus of its work.⁷ Our data show that between 2004 and 2014 students from rural areas made up 14.9% of total student numbers. This percentage is in proportion to the percentage of Ontarians residing in rural communities. However, we acknowledge that rural origin does not determine location of future practice and does not ensure the recruitment of health care professionals to rural areas in need. According to CIHI's 2010 report on physiotherapists in Canada, in that year 91.7% were employed in population centres, 4.1% were employed in rural areas, and 4.2% worked in remote areas.¹⁵ However, this classification was by employer address, which may not precisely represent location of practice. For example, many home care providers travel to and practise in rural areas but have offices in population centres.

Aboriginal identity

Trends in enrolment of Aboriginal persons in Ontario physiotherapy programmes are of interest as well. According to the 2011 National Household Survey (NHS), Aboriginal persons represent 4.3% of the total population of Canada, a rise from previous census findings of 3.8% in 2006, 3.3% in 2001, and 2.8% in 1996.¹⁶ Although Ontario has the largest absolute number of self-identified Aboriginal people among the Canadian provinces, it is also the most populous province. Consequently, the percentage of the population in Ontario that self-identifies as Aboriginal is low at only 2.4%;¹⁶ in fact, it is lower than in any other province except Quebec and Prince Edward Island. In contrast, 16.7% of people in Manitoba and 15.6% of people in Saskatchewan self-identify as Aboriginal, and these percentages are still substantially lower than the percentages of Aboriginal persons in the three Canadian territories.¹⁶

In addition to considering the representation of Aboriginal peoples in Canada, we also note that the number of Aboriginal health care workers is disproportionately

low relative to the number of Aboriginal people living in Canada.¹⁷ According to Statistics Canada, in 2011 48.4% of Aboriginal people aged 25–64 years had some form of post-secondary education: trade certificates (14.4%), college diplomas (20.6%), university degree certificates or diplomas below the bachelor's level (3.5%), and university degrees (9.8%).¹⁸ In comparison with non-Aboriginal populations, the proportion of Aboriginal university graduates is significantly low.¹⁸ In a Chiefs Assembly on Education held in Gatineau, Quebec, in 2012, it was stated that only 4% of First Nations people living on reserve, and 8% in total, had a university degree compared with 23% of the Canadian population.¹⁹ In 2002, Aboriginal students represented approximately 3% of all undergraduate students, a share they have since maintained.²⁰ As of 2011, approximately 5,800 Aboriginal Canadians had a master's degree, and 1,100 had a doctoral degree.²⁰ In comparison, as of 2011, the total percentage of Canadians aged 25–64 years of any cultural background with a master's degree was approximately 0.5%.¹⁷

In the four English-language Master of Physical Therapy programmes across Ontario, 31 students self-identified as Aboriginal in the past 11 application cycles; this is 1.1% of the total number of students. The total percentage of Aboriginal applicants to, and students entering, Ontario physiotherapy programmes remained at approximately 1% from 2004 to 2014 (year-by-year data not shown in Figure 4 because of small cell counts). Thus, although there does not appear to be any inherent bias against accepting students who self-identify as Aboriginal into English-language physiotherapy programmes in Ontario, people who self-identify as Aboriginal are very much under-represented at the applicant level.

Physiotherapy educators and researchers should be engaging with Aboriginal communities to determine appropriate approaches to recruiting Aboriginal students to apply to Ontario physiotherapy programmes; this would be in keeping with the Canadian Physiotherapy Association's policy statement on the role of physiotherapy in Aboriginal health care.²¹ For example, Ontario universities with physiotherapy education programmes currently have no seats reserved for self-identified Aboriginal applicants, unlike physiotherapy programmes in other provinces; the University of Manitoba, University of Saskatchewan, and University of Alberta all have reserved seats for Aboriginal applicants.¹⁷ Other universities have programmes that may facilitate entry without specifically reserved seats. For example, McMaster University has a policy "to facilitate the admission of students with Aboriginal ancestry,"^{22(p. 31)} and applicants who can document their status or affiliation with First Nations, Métis, or Inuit peoples and who meet specific academic standards are invited to an interview.²² Other universities have their own programmes to facilitate entry of Aboriginal persons, among other underrepresented groups,

such as Dalhousie University's Affirmative Action Policy²³ or the University of British Columbia's Northern and Rural Cohort program.²⁴

All of these initiatives appear to be individual programmes; it was reported in 2015 that there is no physiotherapy network in Canada that focuses on increasing training or Aboriginal control of rehabilitation services.¹⁷ However, there were several presentations at the Canadian Physiotherapy Association's Congress 2016 on indigenous people's health and participation, including a discussion of the recently published report of Canada's Truth and Reconciliation Commission (TRC).²⁵ The TRC made 94 recommendations, several of which are relevant to the present topic. Among the education recommendations, the TRC called for a strategy to eliminate educational and employment gaps between Aboriginal and non-Aboriginal Canadians.²⁶ Among the health recommendations, the TRC called for an increase in the number of Aboriginal professionals working in the health care field as well as an increase in efforts to ensure the retention of Aboriginal health care providers in Aboriginal communities.²⁶ The TRC's recommendations for specific health care professions, however, focused exclusively on medicine and nursing. Physiotherapy programmes should keep in mind that any work to increase the number of Aboriginal persons entering the physiotherapy profession should be done by engaging with Aboriginal communities rather than having members of the profession impose their priorities on Aboriginal peoples.

Immigrant status

Canada is an appealing destination for immigrants. Findings from the 2011 NHS indicated that 20.6% of the total Canadian population is foreign born, the highest percentage among the G8 countries.⁵ In recent decades, corresponding to the year of birth of most applicants to ORPAS in 2004–2014, more than half of Canada's immigrants have been from Asian and Middle Eastern countries, with smaller numbers coming from other world regions: Europe, the Caribbean, Central and South America, and Africa.⁵ The 2011 NHS also found that 19.1% of respondents identified themselves as being a member of a visible minority, up from the 16.2% reported in the 2006 Canadian census.⁵ Although all Canadian immigrants would not necessarily self-identify as being of a visible minority, nor would those who self-identify as being of a visible minority necessarily be immigrants, many are in both categories. The focus on immigrant status in the current research occurred because that was the variable available in the historical administrative data, whereas visible minority identity was not.

Given the changing demography of the Canadian population, it is likely that physiotherapists are working with patients from a variety of cultural backgrounds. A national commission recommended that the Canadian

health care workforce be representative of the population to provide culturally competent care.⁴ Culturally competent care involves examining two aspects of the physiotherapy profession: (1) whether the demographics of those practising are representative of the population and (2) whether those who are practising possess the "knowledge, skills, attitudes and behavior required of a practitioner to provide optimal health care services to persons from a wide range of cultural and ethnic backgrounds."²⁷(p. 92)

Much of the research into the need for cultural diversity in health care has emerged from the United States. Research on patient–physician race and ethnic concordance has identified that patients who chose their physicians were more likely to have a same-race or same-ethnicity physician.²⁸ Given the choice, immigrants would choose a health care professional of the same ethnic or cultural background, for a variety of reasons, including but not limited to language.²⁸ Additional research has identified that practitioners with the same cultural background as their patients may provide the most appropriate health care.^{29,30} Although the U.S. literature may help inform our thinking about a culturally competent workforce, it is important to note that the United States has a substantially lower percentage of immigrants than Canada at 13%,³¹ and literature from that country focuses on minority groups that are often American born, such as African Americans and Hispanics/Latinos. In considering recruitment and admission of people of immigrant status to physiotherapy education programmes, we have focused on Canadian literature because Canadian immigration and social policies shape the complexion of our immigrant populations.

Several authors have reported that Canadian immigrant or visible minority youths are more likely to attend university than their Canadian-born counterparts.^{32,33} The high proportion is unsurprising in light of how many of their parents likely had university education: More than half of recent immigrants to Canada have a university degree.⁵ Abada and Tenkorang,³² using data from the 2002 Ethnic Diversity Survey conducted by Statistics Canada, reported that 57% of Chinese and 48% of South Asians had a university education, compared with only 31% of those who did not identify as visible minority.

We were not able to directly compare those results with those of the present study for several reasons. First, the other studies reported only university attainment, not necessarily pursuit of postgraduate degrees. Second, as noted earlier, *immigrant* and *visible minority* are overlapping, but not synonymous, categories. Third, those studies focused on youths who obtained their pre-university education in Canada, whereas some of the immigrants among the applicants in our study obtained their pre-university education outside Canada, and it was possibly not considered adequate preparation for

Ontario university graduate programmes. Nevertheless, these studies indicated that immigrants are at least as likely to apply to university physiotherapy education programmes as Canadian-born individuals if they are motivated to do so. Moreover, a large proportion of Canadian immigrants live in Ontario—52.3% of those in the 2006 Canadian census and 43.1% of those in the 2011 NHS—and the second-highest proportion live in British Columbia.⁵

We found in the present study that about one in five applicants self-identified as having immigrant status; this is entirely consistent with the one-fifth of the Canadian population that is foreign born. However, it is not notably higher, as one might expect in light of the high proportion of applicants who are from Ontario and the Canadian norm of the high university participation rate of immigrants. Moreover, a smaller percentage of students entering the programmes were of immigrant status. We advance three hypotheses for this. The first is that the previous education of some applicants of immigrant status may have been deemed inadequate preparation, including whether they were judged to have adequate ability to undertake graduate studies in English. The second hypothesis is that there may be a difference in grade-point average or other features of Canadian education records between immigrant and Canadian-born applicants. Both of these hypotheses could be explored with the historical ORPAS data by examining applicants' prior post-secondary education records; however, it could not be definitively addressed without knowing how the individual physiotherapy programmes assess applicants' prior education.

Our third hypothesis is that foreign-born applicants whose education is deemed adequate may be less successful than Canadian-born applicants at demonstrating their motivation and other characteristics that are assessed using methods such as essays and interviews. Such performance might also be lower if immigrants have a lesser command of English than Canadian-born individuals. This hypothesis would require exploration beyond the historical ORPAS data. In light of the consideration that culturally diverse student bodies contribute positively to a culturally competent health care workforce, there is a need for future investigations into recruitment of immigrants and people from visible minorities to Ontario physiotherapy education programmes.

Several limitations to our study should be considered. First, applicants may have listed only their mailing address, which could have been their address while completing undergraduate education and not their home address. Because the majority of universities are located in urban centres, applicants and students may have been counted as being from an urban area when they were actually from a rural area. A second limitation of the study is that the method of extracting rural or population-centre status, or northern and southern Ontario

status, relied on classification of the postal codes on the basis of codes from the 2011 Canadian census. Postal codes may have changed over the 2004–2014 period, and new postal codes may have been created.

A third limitation of the study is that Aboriginal applicants and students are almost certainly underreported. The application process asks for Aboriginal self-identification, presumed to be a wider category than legal status but a narrower category than Aboriginal ancestry; however, it may not be clear to applicants what is being asked and for what purpose the information may be used. Applicants of Aboriginal ancestry or identity may choose not to self-identify for many reasons, such as distrust of how the information will be used based on historical misuse of data or feeling unsure of whether they qualify or will have to prove some element of status.³⁴ In a survey of staff from Ontario universities with experience in or responsibility for estimating the number of Aboriginal students at their institutions, more than half of respondents reported that they were either unsure or believed that their institution's counts underestimated the number of Aboriginal students.³⁵ Of the minority who were confident in their institution's counts, many respondents indicated that they relied on many more sources of data than self-identification in the application process.³⁵ We also note that the ORPAS data field is limited to a binary indicator of either Aboriginal identity or not declared; there is no current ability to distinguish among First Nations, Métis, and Inuit peoples.

Other limitations to this study may have affected the generalizability of our results. For instance, this study did not include data on applicants to the physiotherapy programme at the University of Ottawa, for the reasons stated previously. An additional limitation is that ORPAS uses a binary definition of gender; applicants must select either male or female. Consequently, individuals who do not identify as either male or female are unable to report their gender identity. Finally, because of the lack of research into why individuals choose to pursue physiotherapy programmes outside their home province, we could only speculate as to why there was a substantial number of applicants to, and students entering, Ontario English-language physiotherapy programmes from outside Ontario. Future research in this area is required.

CONCLUSION

We analyzed the demographics of applicants to, and students entering, Ontario English-language physiotherapy programmes from 2004 to 2014. Female applicants and students are still a majority, although there has been a trend toward an increase in male applicants and students over the past 10 years. Most applicants and students were from southern Ontario and large urban population centres. A very small proportion of applicants and students declared having Aboriginal identity. Most applicants and students were born in Canada.

Further analysis of subsequent admission cycles could determine whether these proportions are stable or changing over time. In addition, it may be of interest to examine information from other physiotherapy programmes across Canada to see whether the future physiotherapy workforce applying to and entering these four Ontario education programmes is representative of Canada as a whole.

KEY MESSAGES

What is already known on this topic

Physiotherapy is historically and currently a female-dominated profession in Canada, but little else is systematically known about its demographics. Rural and remote regions, including northern Ontario and other northern regions in Canada, face greater challenges in regard to health care human resources than urban regions in the south. National commissions have called for health care workforces to be representative of the populations they serve, including, most recently, Canada's Truth and Reconciliation Commission with respect to Aboriginal peoples.

What this study adds

Applicants to, and students entering, Ontario's English-language physiotherapy education programmes over an 11-year period were predominantly female, although the female-to-male proportions were not as imbalanced as in previous eras. Relatively few applicants to these programmes were immigrants to Canada, and very few applicants self-identified as Aboriginal. Among Ontario-based applicants, the proportions from southern and northern Ontario were approximately proportional to the census-based populations in these regions. After Ontario, British Columbia was the most common source region for applicants to Ontario's English-language physiotherapy education programmes.

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