

Relationship between Ontario chiropractors' attitudes toward drug prescription rights and Canadian versus non-Canadian college of graduation: results from an online survey

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Objective: To investigate differences between chiropractors' attitudes toward drug prescription rights based on chiropractic college of graduation.

Methods: A secondary data analysis of a 2015 survey of chiropractors from Ontario, Canada was performed. The questionnaire included 14 items concerning chiropractors' knowledge and attitudes toward drug prescription including demographics.

Results: 960 of 2,677 deliverable questionnaires were completed (36% response rate). The majority of respondents favoured limited prescribing rights for chiropractors regardless of college of graduation. Respondents who graduated from Canadian institutions were significantly more in favour of these privileges compared to graduates from non-Canadian schools. Over three-quarters of all respondents opposed the idea of chiropractors having full prescribing rights. No significant association was found between respondents' philosophical orientation and school attended.

Objectif : Étudier les différences entre les attitudes des chiropraticiens à l'égard des droits de prescription de médicaments par les diplômés des collèges de chiropratique.

Méthodologie : Une analyse de données secondaires d'un sondage de 2015 de chiropraticiens de l'Ontario, Canada, a été réalisée. Le questionnaire comprenait 14 questions concernant les connaissances des chiropraticiens de la prescription de médicaments, leurs attitudes à cet égard, et des données démographiques.

Résultats : 960 questionnaires sur 2 677 ont été remplis (un taux de réponse de 36 %). La majorité des répondants se sont exprimés en faveur des droits de prescription limités pour les chiropraticiens, quel que soit leur niveau d'éducation. Les répondants diplômés des établissements canadiens étaient nettement plus favorables à ces privilèges par rapport aux diplômés des écoles en dehors du Canada. Plus de trois quarts de tous les répondants se sont opposés à l'idée de donner aux chiropraticiens les pleins droits de prescription. Aucun lien important n'a été trouvé entre l'orientation philosophique des répondants et l'établissement scolaire qu'ils ont fréquenté.

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Conclusion: Ontario chiropractors who graduated from Canadian chiropractic institutions were most interested in obtaining limited drug prescription rights for the profession compared to non-Canadian chiropractic institution graduates.

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KEY WORDS : chiropractic, attitudes, knowledge, drug prescription, cross-sectional survey

Introduction

The right to prescribe drugs continues to be a contentious issue for the chiropractic profession.¹⁻³ Regardless, recent reports indicate that a growing number of chiropractors in various jurisdictions may be interested in expanding their scopes of practice to include limited drug prescription for treating spine-related and other musculoskeletal conditions.⁴⁻⁸ Limited prescribing rights have already been incorporated into the chiropractic scopes of practice in Switzerland⁹ and New Mexico, USA¹⁰. Swiss chiropractors indicate that these privileges are an advantage for the profession in Switzerland;^{9,11} and they are also one of only two groups of medical professionals (including physicians) with primary care status for managing patients with musculoskeletal disorders in that country¹².

Some research suggests that the ongoing contention over prescribing rights in chiropractic may be related to philosophical divisions within the profession.^{8,13} For example, in a recent survey of chiropractors from Ontario, Canada⁸ over 90% of respondents who aligned themselves with a “broad” (or the often described ‘mixer’) scope of chiropractic practice favoured the idea of gaining limited prescriptive authority for prescribing over-the-counter (OTC) and prescription-based musculoskeletal medications. Conversely very few of those who classified themselves as practising within a “focused” (or the often described ‘straight’) scope of chiropractic practice felt the same. Interestingly, the majority (approximately 60%) of “middle scope” respondents in this study also favoured musculoskeletal prescribing rights, indicating that there is potential for unity among the majority of chiropractors

Conclusion : Les chiropraticiens de l’Ontario qui sont des diplômés des institutions chiropratiques canadiennes étaient les plus intéressés à obtenir des droits limités de prescription de médicaments pour la profession par rapport aux diplômés des institutions chiropratiques en dehors du Canada.

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MOTS-CLÉS : chiropratique, attitudes, connaissances, prescription de médicaments, sondage transversal

regarding limited drug prescription for the profession. Similar results regarding the association between philosophical ideologies and prescribing rights in chiropractic have also been shown by others.¹³

There is further evidence to suggest that differences in philosophical orientation among doctors of chiropractic may be reflective of graduation from particular chiropractic teaching institutions.¹⁴⁻¹⁶ For instance, in the United States (US) there are currently 15 chiropractic colleges that span the chiropractic ideological spectrum, from “conservative” (i.e. ‘straight’ colleges that believe in continuing the traditions of chiropractic as espoused by either D.D. or B.J. Palmer) to “liberal” (i.e. colleges that promote an evidence-based approach to the practice of chiropractic, focusing on the treatment of spine-related/musculoskeletal disorders).^{17,18} In Canada there are only two chiropractic educational institutions, the Canadian Memorial Chiropractic College (CMCC) and the Université de Québec à Trois Rivières (UQTR), both of which fall on the liberal/evidence-based end of the chiropractic spectrum.^{19,20} In 2010, Puhl and colleagues¹⁶ surveyed chiropractors across Canada and found that respondents who aligned themselves with an “unorthodox” (or ‘straight’) style of chiropractic were most likely to have graduated from one of the conservative chiropractic schools in the US. Chiropractors in this group were also more likely to exhibit professional attitudes and practice behaviours concerning treatment efficacy, use of radiographic imaging, and views toward vaccination, that were incongruent with current evidence-based practice.^{15,16} Several clinical guidelines endorse the use of mild anal-

gesics and/or anti-inflammatories in the management of various spine-related/musculoskeletal conditions.²¹⁻²³ Yet at present it is unknown if chiropractic educational institutions play a role in influencing chiropractors' general attitudes toward drug prescription.

The purpose of this study was to determine if there was a difference between attitudes toward drug prescription rights among a sample of chiropractors from Ontario, Canada⁸ based on chiropractic college of graduation. The relationship between educational programs and respondents' philosophical orientation / preferred style of practice was also explored.

Methods

The methods of this study have been described in detail elsewhere.⁸ Briefly, a 14-item online questionnaire was developed by the authors based on previous research on this topic and pilot tested on a random sample of 20 chiropractors registered with the Waterloo Regional Chiropractic Society. Twelve respondents completed the pilot testing, agreed on the face validity of the instrument, and provided feedback that led to revisions and creation of the final study instrument.

All active members of the College of Chiropractors of Ontario (CCO) who had a valid e-mail address listed in the CCO's electronic directory ($n = 2,847$) were invited to complete the questionnaire. Retired or inactive chiropractors and/or those who did not have an e-mail address listed on the CCO's electronic directory were ineligible to participate in the study.

Potential participants were contacted up to six times over six weeks including a pre-notification message, followed weekly for five weeks by a message including a cover letter and link to the survey instrument. The survey was distributed and administered online from February 2, 2015 to February 27, 2015 using SurveyMonkey®. Ethics approval for this study was obtained through the Anglo-European College of Chiropractic Research Ethics Sub-Committee (approval number E67/05/15). All data was collected anonymously and stored securely in a password protected electronic database.

The questionnaire was divided into four sections: Section 1 consisted of four questions asking about chiropractors' attitudes to drug prescription rights, Section 2 had two questions about OTC drug recommendations in chiropractic practice, Section 3 contained three questions

about chiropractors' knowledge of drug prescription, while Section 4 asked demographic questions including chiropractic educational institution of graduation and chiropractic philosophical orientation / preferred scope of practice.

Summary responses to all questions were analyzed using descriptive statistics and presented previously.⁸ In the current analysis inferential statistics were used to investigate differences between chiropractors who graduated from different chiropractic educational institutions in terms of their attitudes toward drug prescription rights. Differences between respondents' philosophical orientation and educational institution of graduation were also explored. Chiropractic institutions were divided into two categories: (i) 'Canadian' (graduates from the CMCC and the UQTR) and (ii) 'non-Canadian' (including graduates from programs within and outside the USA). It was hypothesized that graduates from non-Canadian chiropractic educational programs would hold more negative views toward drug prescription rights and be more frequently associated with a focused (or 'straight') chiropractic scope of practice compared to those who graduated from Canadian chiropractic educational institutions. Relationships between the educational program grouping variable and the various attitudinal response variables from Section 1 of the questionnaire including the scope of practice variable from Section 4 were explored using the chi-square test of independence.²⁴ Logistic regression was not performed. Statistical significance was set at $p < 0.05$, and all data analysis was carried out using SPSS (IBM SPSS Statistics ©, Version 20).

Results

Deliverable questionnaires were sent to 2,677 chiropractors in Ontario and 960 were completed for a 35.9% response rate. The mean age of the respondents was 44.1 (SD [standard deviation] 10.5) years, 70.4% were male, and the average time in practice for all respondents was 16.6 (SD 10.6) years. With respect to chiropractic college of graduation, nearly three-quarters (72.7%) of respondents were Canadian graduates (72.4% CMCC, 0.3% UQTR), just over one-quarter (25.7%) graduated from US colleges, and the remaining 1.6% (15/952) of respondents graduated from chiropractic schools outside North America. A demographic comparison between the study sample

Table 1.

Comparison of Ontario chiropractors' attitudes to drug prescription rights based on chiropractic college of graduation

College of graduation	Agree or Strongly Agree %	Neutral %	Disagree or Strongly Disagree %
Attitudes to chiropractors prescribing OTC MSK medications*			
CMCC / UQTR	68.3 (472/691)	5.6 (39/691)	26.0 (180/691)
USA / outside USA	56.5 (147/260)	7.3 (19/260)	36.2 (94/260)
Attitudes to chiropractors prescribing prescription-based MSK medications†			
CMCC / UQTR	64.3 (442/687)	5.8 (40/687)	29.8 (205/687)
USA / outside USA	54.7 (141/258)	4.3 (11/258)	41.1 (106/258)
Attitudes to chiropractors prescribing any and all medications‡			
CMCC / UQTR	11.4 (79/690)	11.7 (81/690)	76.8 (530/690)
USA / outside USA	11.9 (31/260)	12.3 (32/260)	75.8 (197/260)
Attitudes to chiropractors counselling patients on MSK medication use§			
CMCC / UQTR	71.7 (493/688)	10.5 (72/688)	17.9 (123/688)
USA / outside USA	59.1 (153/259)	11.6 (30/259)	29.3 (76/259)

OTC = over-the-counter, MSK = musculoskeletal, CMCC = Canadian Memorial Chiropractic College, UQTR = Université de Québec à Trois Rivières, USA = United States of America.

* $\chi^2_{2df} = 11.57; P = 0.003$. † $\chi^2_{2df} = 10.90; P = 0.004$. ‡ $\chi^2_{2df} = 0.12; P = 0.944$. § $\chi^2_{2df} = 16.36; P < 0.001$.

Table 2.

Comparison of Ontario chiropractors' philosophical orientation based on chiropractic college of graduation

College of graduation	Philosophical orientation*		
	Broad scope %	Middle scope %	Focused scope %
CMCC / UQTR	32.1 (222/691)	55.7 (385/691)	12.2 (84/691)
USA / outside USA	31.0 (80/258)	52.3 (135/258)	16.7 (43/258)

CMCC = Canadian Memorial Chiropractic College, UQTR = Université de Québec à Trois Rivières, USA = United States of America.

* $\chi^2_{2df} = 3.32; P = 0.190$.

and the general population of Ontario chiropractors has been previously presented by the authors.⁸

Comparisons between Ontario chiropractors' attitudes to drug prescription rights and chiropractic college of graduation are displayed in Table 1. The majority of respondents were in favour of incorporating limited drug prescription rights into their scope of practice regardless of their college of graduation. However, a statistically significant greater proportion of respondents who graduated from the two Canadian chiropractic schools agreed that Ontario chiropractors should be able to prescribe OTC and prescription-based medications for musculoskeletal conditions (i.e. 68.3% for OTC medications and 64.3% for prescription-based medications) compared to those

who graduated from schools within and outside the USA (i.e. 56.5% and 54.7% respectively). Respondents from the Canadian colleges also agreed significantly more so than those from the non-Canadian college graduates (71.7% versus 59.1%) with the idea that chiropractors with limited prescriptive authority could counsel patients on medication use for musculoskeletal conditions. With respect to the issue of full prescribing rights, no statistically significant difference in opinion was found between chiropractors who graduated from different chiropractic colleges.

Comparisons between Ontario chiropractors' philosophical orientation / preferred scope of practice and educational institution of graduation are displayed in Table 2.

A greater proportion of respondents who graduated from chiropractic colleges within and outside the US were associated with the 'focused' chiropractic scope of practice group compared to those who graduated from the two Canadian chiropractic schools (i.e. 16.7% versus 12.2%, respectively) but this difference was not statistically significant.

Discussion

This study found that Ontario chiropractors who responded to this survey and graduated from a Canadian chiropractic institution were significantly more in favour of incorporating limited drug prescription rights into their scope of practice compared to respondents who graduated from US colleges including schools outside the USA. Two-thirds of Canadian institution graduates agreed that chiropractors should be permitted to prescribe OTC and prescription-based anti-inflammatories, analgesics, and muscle relaxants, whereas just over half (approximately 56%) of graduates from schools outside of Canada felt the same way. Nearly three-quarters of respondents from the Canadian schools also felt that with limited prescriptive authority chiropractors could help counsel patients against overuse and over-reliance on musculoskeletal medications while less than 60% from non-Canadian chiropractic colleges similarly agreed. This difference in opinion between the two groups (Canadian graduates versus non-Canadian) is comparable to the findings of previous surveys of Canadian chiropractors¹⁴⁻¹⁶ in which various professional attitudes and practice characteristics differed between respondents matriculating from US chiropractic schools compared to graduates of the CMCC. Chiropractors who graduated from institutions outside of Canada in the present study may have been less favourable towards drug prescription than Canadian institution graduates partly because of the longstanding history of division over chiropractic prescribing rights among the profession in the USA.¹ The difference between these two groups could be a reflection of CMCC's curriculum which is evidence-based¹⁹ and includes a greater number of hours in pharmacology education²⁵ compared to that typically required of other chiropractic institutions²⁶. Regardless, results from previous surveys¹⁴⁻¹⁶ together with the findings of the current study reiterate that the chiropractic educational system may be contributing to multiple identities among chiropractors within the profession¹⁶. Unlike

the methodology used by Puhl and colleagues^{15,16} however, the current study did not differentiate between individual US colleges. It is unclear whether respondents who held more negative views toward prescribing rights graduated from so-called "conservative"¹⁷ (versus "liberal") programs in the US. In spite of this, the majority of respondents from both the Canadian and non-Canadian educated groups still favoured the idea of limited prescribing rights for chiropractors regardless of their college of graduation.

Concerning the issue of limited chiropractic prescribing rights, there is evidence from several surveys including that in the present study to indicate that there may be a growing interest among Canadian chiropractors towards gaining limited drug prescription privileges for the profession. For instance, in surveys involving Canadian chiropractors from 2004¹³, 2007⁶, 2011⁶, and 2015⁸, increasing majorities of respondents (i.e. 54%, 55%, 61%, and 68% respectively) indicated at least some level of support for chiropractic prescribing rights for OTC and/or prescription-based musculoskeletal medications. An even greater majority among Ontario chiropractors graduating from Canadian chiropractic institutions favouring these privileges in the current study suggests that chiropractors may not be as divided on this topic in Canada as previously thought.¹⁻³ Arguably a nationwide survey of chiropractors from all Canadian provinces is warranted in order to confirm these findings.

If obtained by the profession limited drug prescription rights would have the potential to change the present role of chiropractors and to positively influence public health. For instance, with a limited formulary chiropractors would gain access to an additional evidence-based modality for managing patients with spine-related and other musculoskeletal complaints.²¹⁻²³ These privileges would also give chiropractors the authority to counsel patients against overusing anti-inflammatory and analgesic medications (e.g. opioids). This notion is supported by evidence from Switzerland where chiropractors tend to prescribe medications significantly less frequently than asked for by their patients.¹¹ In the present study the majority of respondents, including almost three-quarters of graduates from the two Canadian chiropractic institutions, expressed interest in limited prescription rights because of this potential role for the profession. Musculoskeletal prescribing rights could also help pave the way for

chiropractors to become 'first-contact' (or primary) spine care providers within the healthcare system,^{7,27,28} however other implications would first need to be considered²⁹ including changes to chiropractic education and legislation.

Another finding of the present study was that a large majority of respondents, regardless of college affiliation, were opposed to the idea of chiropractors having full prescribing rights. For instance, more than three-quarters of Canadian and non-Canadian chiropractic institution graduates disagreed with chiropractors being able to gain an expanded scope of practice to allow for the prescription of any and all medications, including controlled substances. This finding is consistent with previous chiropractic surveys^{8,13,30,31} where respondents were generally opposed to chiropractors writing drug prescriptions for non-musculoskeletal conditions.

Although Canadian chiropractic institution graduates in the current study were less frequently associated with a focused (or 'straight') chiropractic scope of practice compared to those graduating from schools within and outside the USA, this difference was not statistically significant. Over 12% of Canadian (most of which were CMCC) graduates identified themselves as 'straight' chiropractors while less than 17% of those who graduated from non-Canadian (mostly American) chiropractic institutions did the same. These results are inconsistent with the findings of previous studies^{14,16} where significant associations were found between chiropractors' philosophical orientation and affiliation with non-CMCC / "conservative" chiropractic colleges in the US. A possible explanation for this difference is that no differentiation was made in the present study between "conservative" and "liberal" US chiropractic colleges among the non-Canadian graduates. It is possible that a significant association may have been found regarding ideology and academic affiliation among these respondents had these two sub-groupings of US chiropractic colleges been investigated. Regardless, this study's findings indicate that despite matriculating from an evidence-based curriculum¹⁹ more than one out of every 10 graduates from the CMCC currently practising in Ontario align themselves with a focused (or 'straight') style of chiropractic. It is plausible that clinicians' philosophical views may be preconceived prior to entering chiropractic college (and never change) or are influenced sometime after graduation. Whatever the reason(s), this ideology continues to create negative physician attitudes

toward the profession as well as barriers to medical-chiropractic collaboration both locally and internationally.³²⁻³⁴

Limitations

The main limitations of this study were that it had a relatively low response rate (36%) and it excluded retired chiropractors and those who did not have an e-mail address listed with the CCO. When comparing demographic characteristics however, the study sample was shown to be representative of the general population of practising chiropractors in Ontario.⁸ Nevertheless, a 64% non-response rate suggests that these survey results should be interpreted with caution as respondents' views toward drug prescription rights obtained may not be generalizable to those of all Ontario chiropractors.

Conclusion

This study found that Ontario chiropractors who graduated from Canadian chiropractic educational institutions favoured the idea of gaining limited prescribing rights more so than chiropractors who graduated from schools within and outside the USA. Over three-quarters of respondents were opposed to chiropractors having full prescribing rights regardless of college affiliation. No statistically significant differences were found between respondents' philosophical orientation and educational institution of graduation. A nationwide survey is warranted to further explore Canadian chiropractors' attitudes toward gaining limited drug prescription rights for the profession.

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