

# Career Plans of Graduates of a Canadian Dental School: Preliminary Report of a 5-year Survey

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**Correction:** Revisions were made to the number of speciality programs available in Canada and updated in Table 1, as of July 8, 2016.

## Abstract

**Objective:** Comprehensive data on the characteristics and opinions of graduating dental students in Canada are lacking. Specifically, only minimal information is available on graduates' immediate career plans and factors that may influence their decisions regarding these plans. Our aim was to gather such data to allow better understanding of this issue and improve the design of future studies on this topic.

**Methods:** The Career Development Committee at the school of dentistry, University of Alberta, designed a short survey to be administered to graduating students over 5 years to gain insight into their immediate career plans and opinions on career services at the school. Preliminary results from 2012–2014 are reported here.

**Results:** With a response rate of close to 90% ( $n = 99/111$ ), the data reveal considerable differences in immediate career plans between the surveyed students and those in other schools in Canada and the United States. Of the students, 89% were planning to work in a general dental practice and only 9% were planning to enroll in advanced education, including general practice residency training.

**Conclusion:** More research is needed to better understand the factors affecting career path decisions of students.

Data on the career decisions of graduating dental students in Canada are scarce. In the United States, the American Dental Education Association (ADEA) has conducted and published surveys on selected characteristics of graduating dental school seniors since 2001.<sup>1-9</sup> Through tables and graphs, these surveys provide a wide range of information, such as reasons for pursuing dentistry, debt and expenses, student opinion on education, demographics, career choices, future plans and postdoctoral education. Although Canadian schools have accreditation and educational programs similar to those in the United States, no comprehensive data exist on the future education or career plans of graduating students in Canada.

According to the website of the Commission on Dental Accreditation of Canada, only 30 specialty programs are available in Canada, and the faculty

of dentistry at the University of Toronto is the only school that teaches all specialties (Table 1).<sup>10</sup> The University of Alberta has an orthodontics specialty program and a newly established program in oral medicine.

Because of the limited number of specialty programs and the lack of vital information on graduating classes in Canadian dental schools, including student interest and motivation to pursue graduate studies, it is difficult to ensure that adequate career information is provided to undergraduate students. Thus, it is important to collect and discuss such data and create a career path database of available graduating student education as well as graduate studies education. Hence, the aim of this study was to explore the immediate career plans of students graduating from the doctor of dental surgery (DDS) program at the University of Alberta and to explore whether current career services play a role in those career plans and decisions.

## Methods

The Career Development Committee at the school of dentistry, University of Alberta, obtained approval from the university's Research Ethics Board (study ID Pro00030409) to conduct a 5-year survey to determine graduating students' immediate career plans and how they obtained information related to these plans during their undergraduate years. The 9-question survey has now been administered to 3 classes, 2012, 2013 and 2014.

The University of Alberta's DDS program has 35–40 dental students in each class. Currently, the students are given 2 lectures on careers in their first and second years as part of a course. Students can further explore future career paths by requesting a 1-to-1 meeting with a mentor or advisor and by attending the annual careers event that is offered by the dental school. This event consists of short presentations by educators and clinicians on their career experience. To ensure diversity, the invited speakers usually include general dentists, specialists and current general practice residency (GPR) and orthodontics residents. Attendance at this event is not mandatory, but encouraged. In 2014 and 2015, nearly 35% of the first, second and third year classes of DDS students attended the event (38/108).

## Results

The response rate was close to 90% (In 2012: 34/38 replied, 2013: 31/35 replied, 2014: 34/38 replied). As

**Table 1:** Specialty programs at Canadian dental schools.

School	Specialties	
	No.	Programs
University of British Columbia	6	Endodontics, Orthodontics, Pediatric dentistry, Periodontics, Prosthodontics, Oral medicine and oral pathology
University of Alberta	2	Orthodontics, Oral medicine and oral pathology
University of Saskatchewan	0	
University of Manitoba	4	Oral and maxillofacial surgery, Orthodontics, Pediatric dentistry, Periodontics
University of Toronto	9	Dental public health, Endodontics, Oral pathology and oral medicine, Oral and maxillofacial radiology, Oral and maxillofacial surgery, Orthodontics, Pediatric dentistry, Periodontics, Prosthodontics
University of Western Ontario	2	Orthodontics, Oral and maxillofacial surgery
McGill University	1	Oral and maxillofacial surgery
Université de Montréal	2	Orthodontics, Pediatric dentistry
Université Laval	2	Oral and maxillofacial surgery, Periodontics
Dalhousie University	2	Oral and maxillofacial surgery, Periodontics

**Table 2** shows, 89% of the students surveyed were beginning work in a general private practice, while 9% planned for advanced education. Only 1 student in the 3 surveyed classes was starting specialty training right after graduation and none planned to pursue a master's or PhD degree or any academic position.

A mentor or educator, followed by a family member, had the greatest influence on career decision (**Table 3**). However, these influencing factors varied sharply from year to year. Debt ranked lower in the list of factors.

**Table 4** shows the percentage of students who attended careers events and sought other career information. No clear relation could be found between attendance at the careers event and seeking more information from an educator or the percentage of students who believed they had sufficient knowledge about career choice.

## Discussion

### Immediate Career Plans and Influencing Factors

Student responses over the 3 years of the survey indicate that most graduates (89%) were planning to start their professional life as a general practitioner, and 99% of these students planned to work as an associate in a general private practice (**Table 2**). In contrast, in the United States, only 52% of dental seniors in 12 selected years between

1985 and 2008 were starting in general practice.<sup>8</sup> This percentage dropped slightly to 50.5% for 2013 seniors.<sup>9</sup> In Canada, a 2007 study reported that 51.6% of students surveyed at the University of British Columbia were going to work in a general practice, 29% were going to specialize and 3.2% were considering becoming educators.<sup>11</sup>

An earlier Canadian study in 2004 showed that, although 77% of students surveyed nationwide were considering working in a general private practice, only 12% would keep that choice if debt was not a factor.<sup>12</sup> In that study, 33% of students considered that debt level influenced their career choice, which is the same percentage reported by the 2013 United States seniors, who considered debt to have "very much" or "completely" influenced their choice of primary professional activity after graduation.<sup>9</sup>

At the University of Alberta, only 6–16% (~12% on average) of students considered debt an influence on their career choice. Although this percentage is much lower than that reported in the other 2 Canadian studies,<sup>11,12</sup> it may be related to the large proportion (89%) choosing to become associates in a general practice.

The high percentage of University of Alberta graduates favouring private practice, with educational debt having a low impact on decision-making, is the opposite of the findings of a Harvard School of Dental Medicine study, which reported that when student enrolment in postgraduate programs was very high (up to 87.6%), educational debt ranked low among factors influencing their future career choice.<sup>13</sup> Debt also ranked low in a survey on factors that influence the selection of a prosthodontics residency program.<sup>14</sup>

If the influence of an educator is the top factor affecting career decisions (**Table 3**) in a school with a small number of specialty programs, an initial speculation would be that advice came mainly from educators who are general dentists. Although this cannot be confirmed, it seems important to determine how students in other Canadian schools would respond to this survey question. The encouragement of students by general dentists may make more sense in Alberta, where, before the latest economic changes, dentists enjoyed successful and thriving practices. In that scenario, specializing may not be perceived

**Table 2:** Immediate plans of students graduating from the University of Alberta dental school by year.

Career plan	2012 class, % (n = 30/34)	2013 class, % (n = 27/31)	2014 class, % (n = 30/34)	Average, %
General private practice	88	87	91	89
Solo private practice	0	0	3	1
Associate in a private practice	88	87	88	88
Partner in a private practice	0	0	0	0
Advanced education	12	6	9	9
GPR or equivalent	12	6	6	8
Specialty training	0	0	3	1
Government services	0	6	0	2
Teaching/research/administration	0	0	0	0
Graduate studies (master's or PhD)	0	0	0	0

Note: GPR = general practice residency.

**Table 3** Factors that had the greatest influence on future career decision by year.

Influencing factor	2012 class, % (n = 30/34)	2013 class, % (n = 27/31)	2014 class, % (n = 30/34)
Mentor (instructor/professor/educator in dentistry)	53	26	47
Family member	8	35	29
Educational debt	15	16	6
Academic challenge	12	10	12
Other	12	13	6

**Table 4** Student attendance at career events and percentage seeking career information during their 4-year education.

Source/opinions regarding career information	2012 class, % (n = 30/34)	2013 class, % (n = 27/31)	2014 class, % (n = 30/34)
Attended career presentations	62	61	41
Sought information from a mentor within school	71	65	79
Sought information outside school	59	52	85
Believed they had sufficient knowledge on careers	79	55	53
Believed school provided sufficient knowledge	76	65	62
Thought they might consider teaching in the future	50	26	68

as a priority. In other provinces, the competitiveness of the market may force graduating dentists to think about alternatives. It will be interesting to track career path changes in Alberta resulting from the increased competition in private practice and the overall decrease in disposable income currently faced by Albertan families.

If the above speculation is true regarding advanced education, it is interesting to point out that in the national survey of Canadian schools in 2003–2004,<sup>12</sup> about 40% of students were considering specialty training compared with the current 1% at the University of Alberta (**Table 2**). In the United States, ADEA annual surveys show that a much higher percentage of dental seniors (23.6–39.6%) were considering postgraduate education, and a much higher percentage of students (~49%) actually applied to advanced programs especially GPR.<sup>9</sup>

Because of the lack of comprehensive data, the small number of postgraduate programs in Canada and/or the healthy economic situation in Alberta when the surveys were completed may be factors affecting the low student interest in specialty training. As seen from the list of specialty programs in Canadian schools (**Table 1**),<sup>10</sup> the absence of some postgraduate programs may deprive students of direct contact with and exposure to the aspects and advantages they could provide. Such lack of exposure may negatively affect student attitudes and knowledge and lead to a greater number of students declining advanced education. Further research is needed to develop a better understanding of this issue. A follow-up study of recent graduates up to 5 years into private practice may identify trends among those practitioners to seek advanced education once they have experienced private practice. Direct exposure to the possibility of specializing in an area of newly acquired interest could follow.

Regarding the remaining career options, no student in the survey planned to pursue any position in an academic setting, such as teaching or administration, nor pursue a master's or PhD program. Only 2 students were planning to join government services (Canadian armed forces) (**Table 2**).

The 2 factors that had the greatest influence on career decisions — mentors and family members — varied sharply from year to year in our survey: 61–76% (**Table 3**). At the Harvard School of Dental Medicine, where enrolment in postgraduate programs was very high, students who specialized were greatly influenced by clinical training, high volume of patients, opportunity to conduct research and advice from a mentor.<sup>13</sup> Although mentoring and increased exposure to prosthodontists may increase student interest in pursuing specialty training in prosthodontics,<sup>15,16</sup> the high percentage of University of Alberta seniors reporting the considerable influence of a mentor may have led to most students planning to work in private practice. This again emphasizes the need to study the

influence of the presence or absence of postgraduate programs on student perceptions and decision-making.

Understanding specific aspects of the University of Alberta DDS program may shed light on the possible reasons for student perceptions regarding career pathways and help design future studies on this topic. The University of Alberta DDS curriculum is a combined medical/dental one, where students spend most of their first 2 years in medical classes and start full-time dental education in third year only. However, as early as the end of the third year, students must apply to graduate programs, such as GPR, advanced education in general dentistry and specialty training in the United States. Based on their knowledge in third year, students may not have sufficient understanding to make such important decisions. By the time they acquire more knowledge and seek more information on career paths, they may realize that the most available option for them is to start working as a general dentist. In addition, in Canada, at least 1 year of private practice or GPR experience is often required before pursuing specialty training in highly desired specialties, such as oral surgery and orthodontics. Therefore, the current low interest in GPR education may be a clear indication of the lack of interest in specializing.

Another factor influencing students' decisions could be the nature of the clinical program. Over the last 10 years, the clinical curriculum at the University of Alberta has shifted gradually toward comprehensive care delivery (CCD) and is taught mainly by general practitioners. The leaders make significant clinical decisions regarding diagnosis, operative dentistry, fixed prosthodontics, periodontics and, to a lesser extent, removable prosthodontics. Although specialists are available in most clinics, most patient care falls to the full-time and part-time general practitioner leaders. It is also important to mention that most CCD leaders have practised for decades in private clinics before returning to teaching. With their considerable experience and knowledge, both clinically and professionally, these leaders could become role models for students and their main source of information on the profession.

Furthermore, as the clinic provides comprehensive care, it would not be surprising if students are led to focus their daily work in a manner that is very similar to general practice. It would be interesting to compare this clinic setting with those of other schools that have no combined medical/dental curriculum. It is reasonable to argue that the short, condensed nature of the clinical program resulting from its combined medical/dental curriculum leads to the creation of a general dentist outlook rather than that of a lifelong learner.

As the University of Alberta has had a graduate orthodontic program for more than 40 years, it is also interesting to note the inconsistency of applications to the program by the university's own students. The fact that these students

do not see specializing as a realistic or useful option may be a reflection of the fact that the vast majority of orthodontic graduate students are from out of province.

### Student Knowledge of Career Options

The percentage of students attending careers events varied in the 3 reported years, ranging from 41% to 62%. The reason for this variation in seeking information on careers is not clear. For example, although most students in the class of 2014 sought information from a mentor inside and outside the dental program, 53% thought they had sufficient knowledge about careers. Although this class had the lowest attendance at the career event (41%), 62% of students considered that the school provided sufficient knowledge about careers. In 2012, although fewer students sought information from a mentor, a much higher percentage mentioned that they had sufficient knowledge on careers (Table 4).

### Considering Academic Life as a Future Educator or Researcher

Similar to most other responses, the proportion of students considering teaching or research in the future varied considerably: 26–68% (Table 4). According to Chmar and colleagues,<sup>17</sup> lack of knowledge about academic career opportunities and lack of mentoring programs are obstacles to pursuing an academic career. This may not be the case in the current survey, as most students reported that they had sufficient knowledge about careers obtained from mentoring activities and seeking information from educators (Table 3). However, no student was planning to pursue an academic position immediately. A study by Rupp and co-workers<sup>18</sup> indicated that students in general do not have the knowledge or information needed to make an informed decision regarding a career in dental education; this can be resolved by curriculum reforms and the creation, for example, of opportunities for student research as part of educational curricula.<sup>19</sup>

It may be that practitioners, in general, do not necessarily use current scientific evidence in their decisions. If this was the case the mentor may not emphasize a research related path in their advice to students. The fact that the University of Alberta's orthodontics graduate program has been quite successful in publishing a significant amount of peer-reviewed research does not seem to have influenced any dental student to pursue an academic or research career.

### Limitations of the Study

There were insufficient data from other Canadian programs for comparisons with our survey results. It would be interesting to explore career plans of students studying in a school where all specialty programs are available.

Based on the data from this survey, it is difficult to find a relation between career education and career path decisions. The relatively small class size at the University of Alberta and the lack of research in this area made it hard to determine reasons for the survey results.

### Conclusions

The immediate career plans of graduating dental students at the University of Alberta varied considerably from those reported for students elsewhere in North America. Interest in career events and perception of knowledge about careers varied from year to year in the 3 classes surveyed. More information is needed about graduating students in other Canadian schools to establish a comprehensive knowledge base on aspects of education and future career plans of graduating students. More information is also required on the possible effects of in-house postgraduate programs on graduating students' decisions.

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