FUTURE PROVISION OF ORTHODONTIC CARE FOR PATIENTS WITH CRANIOFACIAL ANOMALIES AND CLEFT LIP AND PALATE

Objective: To determine whether Canadian and United States (US) orthodontic programs provide training in treating patients with cleft lip and palate (CLP) and craniofacial anomalies (CFA) and whether residents will treat these patients in their future practices. Methods: An email with a personalized link to an anonymous, multi-item, online questionnaire was sent to all 54 Canadian and 335 of the approximately 700 US orthodontic residents. The two questions asked were: “Do you plan to include the treatment of CLP and CFA patients in your practice?” and “Does your program contain formal training in treating patients with CLP and CFA?” Results: A total of 44 Canadian and 136 US residents responded. In Canada, 30% plan to treat patients with CLP and CFA after graduation, 14% said no, 48% said maybe, and 9% were unsure. In the US, 53% said yes, 7% said no, 36% said maybe, and 4% were unsure. When asked if their program offers formal training in the treatment of these patients, 45% of Canadian residents said yes, 34% said no, and 20% were unsure, whereas 82% of US residents said yes, 12% said no, and 5% were unsure. Conclusion: Most programs in the US and approximately half in Canada provide training in CLP and CFA, and more than half of US and almost one-third of Canadian residents plan to be involved in the care of patients with CLP and CFA, which is considerably less than those receiving training. Orthodontic programs need to increase the number of postgraduate students who are interested in providing care to CLP and CFA patients after becoming orthodontists. World J Orthod 2010;11:269–272.

Key words: orthodontic care, cleft lip and palate, craniofacial anomalies, postgraduate orthodontic programs, fellowship programs

There is a growing concern in North America that there may be a future deficiency in the provision of orthodontic care for patients with cleft lip and palate (CLP) and craniofacial anomalies (CFA). This concern may be due to the potentially increased complexity and difficulty of treatment, the long-term care that is needed, and often minimal financial benefit. Perhaps for this reason, there is a growing interest in the accreditation of orthodontic postgraduate fellowship training programs that specialize in the treatment of patients with CLP and CFA.

The purpose of this study was to investigate the extent that orthodontic specialty programs in Canada and the United States (US) provide formal training to residents in the treatment of patients with CLP and CFA and to explore whether the residents plan to treat these patients in their future practices.
METHODS

Ethics approval was obtained from the University Research Ethics Board to administer a questionnaire to orthodontic residents in Canada and the US. Orthodontic program chairs and directors (this was the same person in some of the programs) from each of the 5 Canadian and the 65 US accredited orthodontic programs were contacted by email for consent for their residents to participate in this survey. The questionnaire was included as an attachment to an email, and a request was made for permission to contact their residents by email and invite them to participate in the investigation anonymously. Program directors or chairs who did not respond were then contacted an additional three times by telephone.

An online program was used to send an email with a personalized online link to all 54 Canadian orthodontic residents in November 2006 and to a total of 335 residents from 37 orthodontic programs distributed throughout the US in May 2007. The personalized online link prevented respondents from completing the questionnaire more than once. To ensure privacy and anonymity, no personal information was collected, and this was clearly emphasized to all residents with each email communication. The questionnaire was divided into the following segments: demographics, reasons for choosing orthodontics, evaluation of the program, and future directions. Data were then compiled into a Microsoft Excel spreadsheet and categorized by demographic variables. Basic statistics and comparative analyses using chi-square analysis were undertaken by sex, age, and year of training.

The two questions relevant to the current publication that were asked were:

1. Do you plan to include the treatment of patients with cleft lip and palate and craniofacial anomalies in your practice?
2. Does your program contain formal training in treating patients with cleft lip and palate and craniofacial anomalies?

RESULTS

A total of 44 Canadian and 136 US orthodontic residents responded, giving a response rate of 81.5% and 40.6%, respectively. Chi-square analysis was undertaken for sex with no significance found ($P < .05$).

In Canada, 30% said they plan to treat patients with CLP and CFA after graduation, 14% said no, 48% said maybe, and 9% were unsure. In the US, 53% said yes, 7% said no, 36% said maybe, and 4% were unsure (Fig 1). When asked if their program offers formal training in the treatment of patients with CLP and CFA, 45% of the Canadian residents said yes, 34% said no, and 20% were unsure. In the US, 82% of the residents said yes,
12% said no, and 5% were unsure (Fig 2). Chi-square analysis found a significant difference between Canadian and US residents, with more US residents saying yes ($P = .045$).

**DISCUSSION**

This investigation is unique in that there has never been a questionnaire or study administered to orthodontic residents inquiring about the extent of training they receive in treating patients with CLP and CFA or if they plan on treating these patients after their graduation. These are important questions, as they can help predict future issues with access to care for patients with CLP and CFA.

A series of surveys of orthodontic programs in the US and Canada were previously sponsored by the American Association of Orthodontists Council on Education, but these were administered to program directors, not the orthodontic residents themselves.\textsuperscript{1-4} These studies, though extensive, did not ask program directors whether orthodontic residents received any training in the treatment of patients with CLP and CFA, nor did they ask if their residents had any clinical experience treating such patients.

According to the current study, most orthodontic programs in the US and only approximately half in Canada provide formal training in the treatment of patients with CLP and CFA. More than half of US residents and almost one-third of Canadian residents plan to be involved in the care of these patients after graduation. Disappointingly, this is considerably less than the number of residents who receive training. Numerous reasons may exist as to why residents who have received respective training are still not willing to treat these patients upon graduation. One reason might be that the extent of the training they received may have been too limited, so the residents may not feel prepared to treat more complex malocclusions. Another reason could be that residents may not have the desire to treat CLP/CFA patients because their malocclusions are very complex, which leads to an increased length of treatment time, which often translates to reduced financial benefits.

A limitation of this study is that the extent and scope of the training was not investigated. This additional information could be important to assist postgraduate orthodontic fellowship training programs in attaining accreditation. If a limited amount of training in graduate orthodontic programs exists, this would demonstrate a need for such fellowship programs, as they would guarantee orthodontists graduate with the specialized diagnostic and clinical skills necessary to treat patients with CLP and CFA.

This study demonstrated that issues with access to care for patients with CLP and CFA are likely to be more prevalent in Canada, with significantly fewer residents from Canada indicating that they will treat these patients in their future practice.
This may not only be a lack of willingness of Canadians to treat these patients, but may also be a function of residents from Canada not receiving enough postgraduate training, leaving them feeling unprepared to treat such patients.

According to the residents’ answers, most orthodontic training programs in the US, but only approximately half in Canada, provide formal training in treatment of patients with CLP and CFA. However, orthodontic programs need to have formal theoretical and practical training in the treatment of such patients. Some residents may later practice in locations where no orthodontist with special training is available and may find themselves as the orthodontic member of a cleft and craniofacial team. Further, programs should graduate residents who will treat patients with difficulties accessing care, which includes patients with CLP and CFA. Optimal orthodontic programs, therefore, should have multidisciplinary seminars and courses, hospital rotations, and even specialized craniofacial clinics so residents can acquire hands-on clinical experience. Residents should also be taught their limits when treating such patients and their responsibility to refer them to a consultant orthodontist in a craniofacial center. This type of education may stimulate more residents to become eager and proficient participants in the care of these patients after graduation, despite the challenges they may encounter in treatment.

Orthodontic programs also need to convey to their residents the personal rewards and fulfillment associated with developing a long-term relationship in the treatment of patients with CLP and CFA, as well as the satisfaction of being a member of a craniofacial team of diverse specialists. In addition, to ensure the future provision of care for these patients, orthodontic programs should accept students who express a genuine interest in the treatment of this segment of the population.

REFERENCES