

Background and Perspectives of Periodontal Program Directors in the US: A Survey

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Abstract

Objectives: The purpose of this cross-sectional study was to survey the demographics and perspectives of periodontal program directors (PD) in the US. **Methods:** A 30-item web-based survey was distributed to 54 periodontal PDs via email starting September 2012. The data collected were analyzed, and percentages were calculated. **Results:** There was a 50% response rate. Most respondents (81.4%) were males, >46 years old (77.7%), who mostly used to be full-time faculty prior to holding the position of a PD. All PDs reported accepting residents with more than average academic achievements and clinical experiences or expertise. **Conclusion:** This survey reports on periodontal PDs' background and perspectives. Most periodontal PDs are confident with the level of knowledge, clinical training and research experience provided to graduating residents. An educational barrier exists between specialties within the same institute in terms of sharing knowledge and clinical experiences in addition to planning and management of treatment. Future and follow up studies are needed to determine program trends and long-term outcomes.

Key Words: Periodontal, Program directors, Education

Background

The American Dental Association (ADA) survey report of 2010/11 [1] identified 54 periodontal residency programs, each under the supervision of a program director (PD). Forty-eight programs were university-based, three were military-based and three were based within a Veterans' Administration (VA) hospital [2]. Although the Commission on Dental Accreditation (CODA) evaluate and regulates periodontal programs in the US to a set standard, it is important to view the PDs' perspectives on their programs and residents and to compare them with all other national programs [3]. This information would help to modify and advance existing advanced periodontal programs. Such data can be used to identify emerging educational goals and strengths, in addition to helping to support and improve the current periodontal residency programs. Minimal work has been done in the past to explore this educational aspect. In a recent publication by Carosino et al., a survey was sent to all 54 periodontal PDs asking them to describe the criteria for selecting an applicant to join their graduate program [4]. Another survey on periodontal residents' educational experiences prior to and during program enrollment was published, in addition to their future career plans [5]. Data on periodontal programs and directors' demographics and perspectives on their programs and residents are lacking.

The aims of this study were: 1) to determine periodontal PDs' demographics; 2) to identify their perspectives on their programs and graduate students; and 3) to compare periodontal residents educational background and performance with other specialty residents within the same dental institute.

Material and Methods

Approval for the study was obtained from the Institutional Review Boards at xxx xxx xxx. The survey used was based on the Bruner et al. 30-item survey, adapted and modified by two of the authors (HM and AF). Survey questions asked for

PDs' demographic information, educational experiences, and program- and resident-specific questions. The 30 items in the survey consisted of multiple-choice questions, short-answer questions, and items on a numerical priority scale (a reverse Likert-type scale) (Supplemental data). Before launching the survey nationwide, the survey was pilot-tested with five PDs of other dental specialties at xxx xxx xxx. No changes were required based on the pilot study.

We obtained names and addresses of program chairs/directors in all 54 US periodontal postgraduate programs from the American Academy of Periodontology (AAP) website and membership directories. All 54 PDs were then contacted and encouraged to participate in this survey, and a link to the Qualtrics web-based survey was provided. The survey was distributed to all the PDs on September 15th, 2012. Second and third follow-up emails were sent out on December 15th and March 15th, 2013. The survey included a feature to prevent any respondent from attempting to complete it more than once. To ensure privacy and anonymity, survey responses could not be linked to the subjects in any way. Survey responses that were missing at least one answer were eliminated from the study. Data collected were inserted into Microsoft Excel 2011 for Mac (Microsoft, Seattle, WA) and were descriptively and quantitatively analyzed for presentation as percentages, ranges, and frequencies for each question.

Results

This survey was distributed to 54 active PDs of 54 periodontal graduate programs. Forty-one PDs accessed the survey, and 27 directors fully completed all 30 questions, thus giving a response rate of 50%.

Six directors (22.2%) were 45 or younger, and 21 directors (77.7%) were 46 or older (*Table 1*). Twenty-two directors were male (81.4%), and only five were female (18.5%). All PDs held a Master's degree and all were board certified as required by CODA. Eight directors (29.6%) held an additional

Table 1. Demographic information on survey respondents, by number and percentage of total group.

	Responses	Frequency (N)	Percentages %
Age	35-45	6	22.2%
	46-55	10	37.0%
	>56	11	40.7%
Gender	Male	22	81.4%
	Female	5	18.5%
Qualification	Master	27	100.0%
	PhD	8	29.6%
	DMSc/DSc	1	3.7%
	ABOP	27	100.0%
Previous teaching experience	Full time faculty member	17	62.9%
	Part time faculty member	1	3.7%
	Private practice	3	11.1%
	Military	5	18.5%
	VA	1	3.7%

*DMSc, Doctorate of medical science; DSc, Doctorate of Science; ABOP, American Board of Periodontology; VA, Veterans affair facility.

PhD degree, and only one (3.7%) held an additional doctorate degree (DSc). Most PDs (62.9%) were previously full-time faculty members. Others were originally part-time faculty (3.7%), periodontists in the military (18.5%), practicing periodontics in a VA hospital (3.7%), or from private practice (11.1%).

A third of respondents had been PDs for 5-10 years (9/27; 33.3%); seven (25.9%) had held the position for less than 5 years, seven (25.9%) for 10-15 years, and two (7.4%) for 15-20 years. Three directors only had been in position for more than 30 years. In terms of academic title, five directors (18.5%) were Assistant Professors, eight (29.6%) were Associate Professors, and 14 (51.8%) were Full Professors.

On average, 45% (range 10-70%) of PD time was spent on teaching, 16.0% (range 0-35%) on clinical practice, 26% (range 10-50%) on administrative work, and 13.0% (range 5-25%) on research. Three PDs (11.1%) stated that clinical experience was the only goal of their program. However, the other 88.8% (24/27) indicated that their residents were trained to gain both clinical and research experiences.

Program-specific criteria

Most programs (19/27; 70.3%) had between three and five full-time faculty members. Two programs (7.4%) had only one full-time faculty member. In contrast, a majority of programs (16/27; 59.2%) had one to five part-time faculty members. Seven (25.9%) programs had 6-10 part-time members, and four programs (14.8%) had more than 10 part-time faculty members. When asked about any decline in the number of part-time faculty members in the last five years, 12 (44.4%) directors answered "yes."

All PDs were asked questions to evaluate their periodontal departments and compare them to other departments within the same dental institute (Table 2). Nineteen (70.3%) periodontal programs were standalone departments, the rest (8/27; 29.6%) being part of a bigger division including other departments. Most PDs indicated that their programs provided

Table 2. Overall periodontal programs educational performances as reported by PDs. Data represent frequency of reported answers (N=27 for each item).

Educational item	Strong	Adequate	Weak
Clinical exposure	25	2	0
Didactic	18	9	0
Research exposure	8	16	3
Treatment planning	22	5	0

strong clinical exposure (25/27; 92.5%), a strong didactic component (18/27; 66.6%), adequate research exposure (16/27; 59.2%), and strong comprehensive treatment planning of cases (22/27; 81.4%) for graduate students. In addition, PDs were asked to rank their departments in comparison to other departments within the same institute in terms of providing clinical experience and basic science (Table 3). The number of implants placed by periodontal residents was compared to other specialties (oral and maxillofacial surgery [OMFS], restorative, prosthodontics, endodontics and implant dentistry). Nineteen periodontal programs had fewer implants placed by their residents compared to OMFS and 15 fewer periodontal programs places for implants than prosthodontics (Table 4). When asked about hard tissue development of implant sites completed by other departments, OMFS (26/27) and implant dentistry (7/27) were the most frequently reported to be providing this procedure, along with the periodontal department (Figure 1). PDs were asked about the sharing of basic scientific knowledge, interdisciplinary seminars, and interdepartmental seminars between periodontal and other departments (OMFS, restorative, prosthodontics, endodontics, orthodontics, implant dentistry, and oral pathology). Periodontal programs tended to have a better overall educational relationship with OMFS, prosthodontics, dental implant departments. Asked which department within each institute carried the most political clout in administrative decision-making, responded that OMFS (15/27; 55.5%) and restorative dentistry (14/27; 51.8%) seemed to have the most power and authority (Figure 2).

Resident-specific criteria

Periodontal PDs had the overall impression that they were accepting residents with equal or better academic achievements or clinical experiences than those of other specialties such as OMFS and restorative dentistry. In terms of research background and community and leadership skills, new periodontal residents were at the same level as those in other specialties. Upon completion of the program, periodontal residents graduated for the most part with better academic achievements and equal or better clinical experiences than other residents. At graduation, periodontal residents also had higher background and community and leadership skills than residents in others specialties. Asked about the path chosen by periodontal graduates upon graduation, 18 PDs (66.6%) indicated that 10% of their graduates would apply for academic positions only. Thirteen PDs (48.1%) indicated that 90% of their graduates would seek only a private practice career and 18 PDs (66.6%) indicated that 10% would seek both.

Discussion

According to the ADA 2010/11 survey, there were 54 periodontal graduate programs, with 53 full-time PDs and one

Table 3. Comparison of periodontal graduate programs to other specialty programs within the same dental institute for clinical experiences and basic sciences provided to residents. Data represent frequency of reported answers (N=27).

Dental speciality	Item	PD is stronger	PD is at the same level	PD is weaker	Unable to asses
Oral and Maxillofacial surgery	Clinical experience	8	11	4	4
	Basic science	18	5	1	3
Restorative dentistry	Clinical experience	8	9	2	8
	Basic science	16	5	0	6
Prosthodontics	Clinical experience	7	11	3	6
	Basic science	16	7	0	4
Pediatric dentistry	Clinical experience	5	11	2	9
	Basic science	17	5	1	4
Endodontics	Clinical experience	8	12	2	5
	Basic science	11	14	0	2
Orthodontics	Clinical experience	5	13	1	8
	Basic science	12	10	1	4
Oral and Maxillofacial pathology	Clinical experience	9	6	0	12
	Basic science	6	9	0	12
Oral radiology	Clinical experience	7	7	0	13
	Basic science	8	7	0	12
Oral medicine	Clinical experience	10	4	0	13
	Basic science	10	6	0	11

*PD, periodontal department.

Table 4. Comparison of implant placement between periodontal programs and other specialty programs within the same dental institute. Data represent frequency of reported answers (N=27).

Dental speciality	Don't place implants	Place implants as many as periodontics	Place less implants	Place more implants than periodontics
Oral and Maxillofacial surgery	1	6	19	1
Restorative dentistry	17	0	9	1
Prosthodontics	10	1	15	1
Endodontics	17	0	10	0
Implant dentistry	13	5	7	2

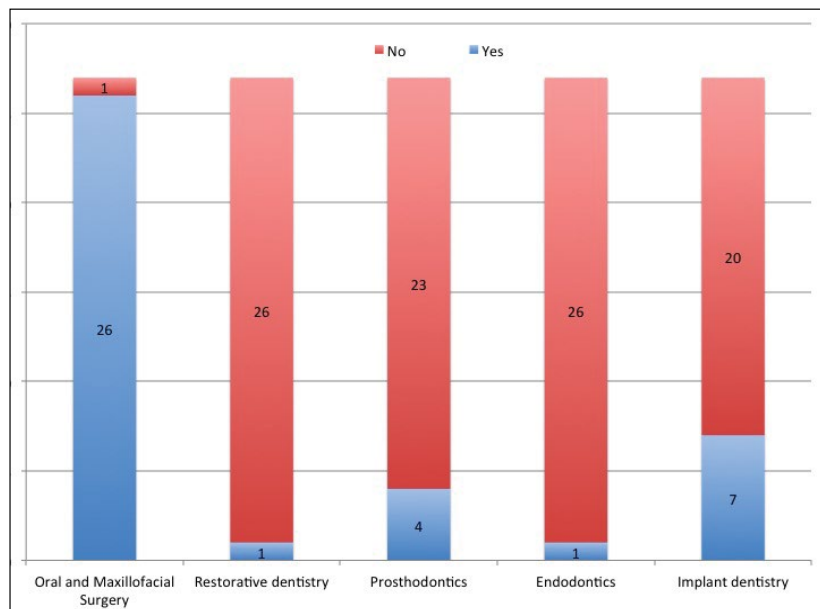


Figure 1. Implant-site hard tissue development performed by dental specialty programs (other than periodontal) within the same dental institute. Data represent frequency of answers reported (N=27).

part-time, of whom 52 PDs were boarded in periodontics [1]. Periodontics is a popular specialty for dental students overall. With the addition of one more accredited periodontal program in 2012/13 (making a total of 55 programs), the total number of applicants increased slightly to 2,062 applicants, of which 550 were accepted, compared to 1,990 applications previously reported in 2011/2012, of which 541 were accepted [6]. PDs in charge of graduate students play an important role in providing

the adequacy of periodontal training. However, there is a lack of knowledge on periodontal PDs' demographics and their perspective on their residents and program objectives. To the best of our knowledge, this is the first study to assess US periodontal PDs, periodontal program goals, and interschool relations with other departments. The current survey was designed to fill this gap and to provide data that can be used to improve national periodontal programs. With a response rate

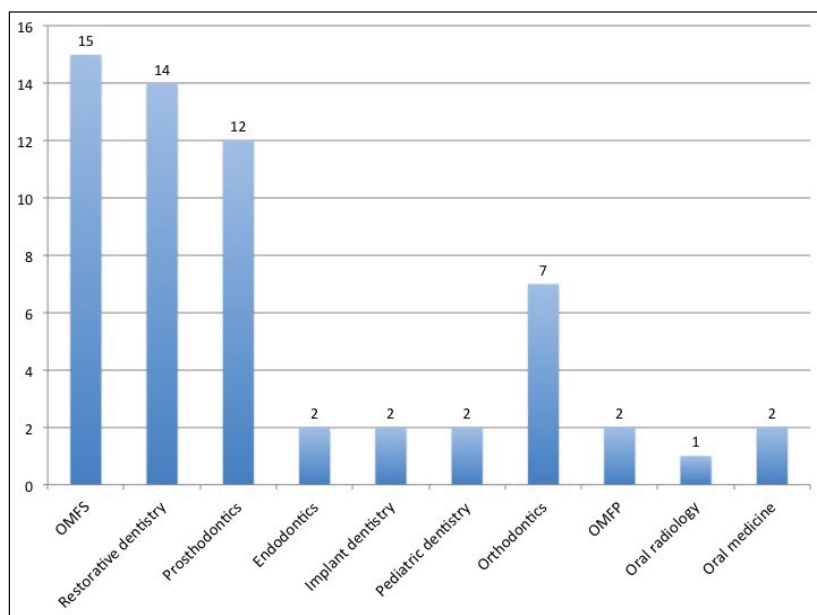


Figure 2. Political clout carried by different departments within each dental institute. Data represent frequency of reported answers. *OMFS, oral and maxillofacial surgery; OMFP, oral and maxillofacial pathology.

of 50%, it is assumed that most of the data obtained is valid and reliable and hence may be applied to other programs.

Most PDs in the present survey were older than 46 years (77.7%), and 17 had previously been full-time faculty members. By way of comparison, the average age of periodontal PDs in Nippon Dental School-Japan (NDS), for example, is only 41.5 years (range 38-47 years) [7]. This could be the result of a longer and more complicated system for academic promotion for faculty members in the US. Nineteen PDs (70.3%) in this survey have held the position for more than 5 years, and the mean number of years of teaching experience as a PD was 5.3 (range 3-7 years) [7]. Clinical and research experience are the main goals for periodontal programs, as stated by 88.8% of the PDs and substantiated by the fact that more than half of the directors' time was spent on teaching and research.

Program-specific criteria

Faculty members are an important component of any periodontal graduate program. In addition to teaching clinical skills, they provide guidance and research assistance to students. The number of part-time faculty members exceeds the number of full-time members. However, more than half of PDs indicated that both full-time and part-time faculty members had decreased in number in the last 5 years. This could be attributed to an increased desire on the part of periodontists to pursue a private practice career in order to achieve a higher income, while maintaining ties with academic teaching, as reported previously [5]. Other reasons may include flexibility and better control of personal lives, and less satisfaction in academia. This is supported by the fact that most PDs in this study indicated that 90% of the graduating residents would seek a private practice career, compared to 10% applying solely for a position in academia.

In this survey, most periodontal departments (70.3%) were standalone departments, the rest being part of a bigger division along with other departments such as oral medicine and oral pathology. Being standalone permits periodontal departments easier and more focused decision-making. Typically, and within all dental institutes, various dental specialty departments have a certain degree of interdepartmental interaction on many levels, whether

administrative, educational, or logistical. Historically, periodontal departments tend to have better interaction with specific departments such as OMFS, prosthodontics, dental implants, and endodontics. This is because these departments provide a similar surgical service, including dental implants and supportive dental surgical and non-surgical services. Thus, it is important to explore the nature of this relationship and how it impacts periodontal program goals and long-term plans. In terms of sharing basic scientific knowledge, interdisciplinary seminars, and interdepartmental seminars with other departments, most PDs indicated a minimal relation with OMFS and implant dentistry. One way to explain this finding is that most PDs are content with their residents being either at the same level or stronger in these areas than other specialty residents. The other possibility is the competitive nature of the dental institutes' environments, in which several programs may be providing similar clinical services. Some of these programs place as many or more total dental implants annually than periodontics. In addition, many OMFS and dental implant residents share and provide hard tissue development of implant sites with periodontal residents.

It is well known that one of the major challenges that periodontal residents face during their training is patient recruitment and the opportunity to perform as many surgical procedures as possible, in order to gain better clinical experience during their residency. Being in an institute where residents have to compete for patients with other departments' residents creates tensions among the residents, but also can be carried over to their departmental administrations, which can affect interdepartmental relations.

One additional factor is political clout in administrative decision-making within dental institutes. Many specialties in this survey have significant administrative power, OMFS departments being the most frequently reported in this context. On the other hand, there was more interaction in terms of interdisciplinary and interdepartmental seminars with departments of prosthodontics and endodontics. These departments do not necessarily compete with periodontics for patient recruitment, but rather provide supportive dental care and help in case treatment planning. These findings shed

light on one of the academic challenges that results from differences in political views between departments, which may in turn affect the learning experience opportunities for residents and the benefit to them of sharing and discussing clinical cases.

Resident-specific criteria

While the average length of periodontal graduate programs of 35 months is shorter than certain other specialty programs (54.1 months for OMFS) and longer than others (32 months for prosthodontics), periodontal residents are exposed to multiple educational opportunities through didactics, clinical skills, research, and case treatment planning [6]. Periodontal PDs had the impression they were deliberately choosing more highly skilled residents. As they go through the program, residents add to their clinical and leadership skills and are exposed to research. This may indicate that the length of the overall periodontal program is adequate in order to allow residents to acquire all the required knowledge and skills. The overall impression of PDs on periodontal graduates being less interested in Academia can be attributed to multiple reasons including enormous educational debt burden, lack of research and teaching experience as well as career satisfaction as reported before [8-10].

There were several limitations to this study. First, and despite the good response rate of 50%, generalizing from the results may be difficult. In addition, there may be a voluntary participation bias. Second, and even with survey pilot testing, certain questions may have elicited a bias. An example would be the question on the number of implants placed by periodontal residents compared to other specialty residents within the same institute. It was a surprise to discover that 19 periodontal programs placed fewer implants than OMFS and 15 programs placed fewer implants than prosthodontics. This may suggest that some respondents may have misinterpreted the question. Third, because of the anonymous design of this survey, we were not able to link individual respondents' answers to each question. As a result, our data are presented as numbers of responses and percentages, and no statistical

correlation was performed. Despite these limitations, these results can serve as a baseline for studying future trends.

The information collected in this study allows periodontal PDs to compare their programs to all other national programs and identify areas for improvement. The fact that most PDs were satisfied with the degree of clinical exposure, didactic component, and treatment planning of cases passed along to graduating residents, and to a lesser extent with research exposure, may indicate the need to reinforce these areas in resident training. Although such specialties as OMFS and implant dentistry provide similar services to those of periodontics, specialties tend to share less knowledge and clinical experiences in case treatment planning and management. This may be due to political competition at a higher level between departments. More effort is needed to bring departments together and to provide dental residents with a better opportunity to learn and share their knowledge and thus to set a high standard for the next generation of dental specialists.

Conclusion

Up to our knowledge, this is the first study to report on the demographics of current US periodontal PDs and their perspectives on their residents and programs. In addition, this report explores the inter-departmental relation within the same dental institute. Most periodontal PDs are confident with the level of knowledge, clinical training, and research experience provided and passed on to their graduating residents. An educational barrier exists between specialties within the same institute, preventing the sharing of knowledge and clinical experiences in case treatment planning and management. Future and follow-up studies will determine program trends and outcomes in the long term.

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