

Owner or employee? The practice ownership intentions of pediatric dentistry residents

William Alexander

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Committee:

Zheng Xu

Joel Berg

Roger Sanger

JoAnna M. Scott

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William Alexander

University of Washington

Abstract

Owner or employee? The practice ownership intentions of pediatric dentistry residents

William Alexander

Chair of the Supervisory Committee:

Zheng Xu

Department of Pediatric Dentistry

Purpose: This study aimed to investigate the interest in practice ownership among pediatric dentistry residents and influencing factors, particularly educational debt.

Methods: An invitation to participate in an anonymous survey was sent to 933 pediatric dentistry residents training in the United States in the spring of 2020. The response rate was 33%.

Results: Of the respondents, 61% reported being extremely or very interested in practice ownership and 50% anticipated becoming a practice owner within five years of graduation. An inverse relationship was seen between one's level of comfort in assuming a business loan to acquire a practice and having an educational debt burden of \$400,000 or greater ($P = 0.002$). Practice management preparation was the most common concern related to future practice ownership. Those feeling completely, very, or moderately prepared to manage a dental practice were 44% more likely to be extremely or very interested in practice ownership than were those who felt slightly or not at all prepared ($P < 0.001$).

Conclusions: There appears to be broad interest in practice ownership among pediatric dentistry residents. Relatively high educational debt may negatively influence future practice ownership, but it may be less influential than other factors.

Introduction

Over the last few decades there have been growing trends in the dental marketplace, as it moves away from the sole proprietor dentist as the primary model for care delivery. Many of these changes are especially pronounced among younger practitioners. In 1999 nearly two in three dentists in private practice were solo practitioners, but by 2019 this had decreased to one in two.¹ Likewise, there has been a marked drop in practice ownership. Between 2005 and 2019 the percentage of all dentists in private practice who were practice owners declined from 84.7% to 76.1%, while the decline for dentists under the age of 35 was from 49.0% to 30.7%.² Concurrently, there has been a consolidation of the dental marketplace with an accelerating expansion of large group practices (LGPs) and practices associated with dental service organizations (DSOs).³⁻⁶ Dentists who have practiced less than 10 years are three times as likely to be part of an LGP than are dentists who have practiced more than 10 years.⁶ By 2019, 20.4% of dentists between the ages of 21 and 34 were affiliated with a DSO, compared to only 10.4% of all dentists.⁷

It has been argued that changes in new dentist characteristics favor employment over practice ownership.⁸ Notably among these changes, new graduates are increasingly burdened by student loans, and employment allows them to earn money immediately and predictably. From 1990 to 2017, educational debt for graduating dental students increased 233% when adjusted for inflation.⁹ Similarly, between 1996 and 2010, the debt-to-income ratio for dental school graduates increased from approximately 0.70 to 0.97.¹⁰ This accumulation of debt is not occurring in a vacuum, but rather it likely has far reaching consequences. In a 2013 survey, 38% of responding dental school deans reported feeling that educational debt greatly affects students' ability to buy a dental practice.¹¹ It has been observed that every \$10,000 increase in student loan debt is associated with a 0.9% increase in the likelihood of a dentist joining a DSO as opposed to entering solo practice.¹² Dental school graduates with relatively high educational debt are also less likely to pursue specialty training or to enter academia or government

service, but no association between educational debt and practice ownership has been conclusively identified.¹³

How might these changes in practice patterns affect patients or the dental profession? It has been shown that patients' trust in healthcare providers strongly correlates with patients having a dental home.¹⁴ An increasing number of dentists are taking what is inherently more transitory employment as opposed to owning their own practice, and such work arrangements might be less conducive to the establishment of trusting patient-doctor relationships. For dental professionals, practice setting does appear to have a significant influence on various aspects of career satisfaction, and it is possible that one's career satisfaction might affect the delivery of care and ultimately the patient experience.¹⁵ Further research is required to evaluate how the rapidly changing practice landscape impacts the dental home concept as originally proposed, as well as its effect on patient care outcomes.¹⁶

In 2016 three-quarters of all pediatric dentists worked in private practice and nearly half reported there were three or more dentists in their primary work setting, while in 2019 12.4% of all pediatric dentists were affiliated with a DSO.^{7, 17, 18} Given that the pediatric dentist workforce increased 80% from 2001 to 2016, and that it is projected to continue expanding faster than is demand, a better understanding of how new graduates are likely to become integrated into the marketplace is needed.^{17, 18} The primary objectives of this study were to investigate the interest in practice ownership among pediatric dentistry residents training in the United States and the factors influencing their practice ownership intentions, particularly educational debt.

Methods

This survey-based study was reviewed by the University of Washington Human Subjects Division and it was determined to be exempt from federal human subjects regulations, including the requirement for institutional review board approval (study identification number STUDY00009592).

A roster of pediatric dentistry residents enrolled in postdoctoral training programs in the United States was obtained from the American Academy of Pediatric Dentistry (AAPD). Of these 937 individuals, 935 had a registered email address. An anonymous web-based survey comprised of 20 multiple-choice questions with some optional free response fields was administered using REDCap electronic data capture tools hosted at the Institute of Translational Health Sciences (REDCap at ITHS is supported by the National Center for Advancing Translational Sciences of the National Institutes of Health under award number UL1 TR002319). The survey inquired about demographic information, level of interest in practice ownership and anticipated time to becoming a practice owner, prior practice experience and future practice plans, and factors influencing career decisions, including educational debt. The full survey can be found in Appendix 1.

On April 13, 2020, an invitation to participate in the study including a link to the survey was sent to all 935 available resident email addresses, and of these invitations 933 were deliverable. A second invitation was sent on April 28, 2020 encouraging participation from those that had yet to do so, and the survey was closed to further responses on May 26, 2020. A total of 307 survey submissions were received, yielding a response rate of 32.9%, and 281 of these were completed in their entirety. No survey was excluded. All missing responses were included in descriptive statistics, but were excluded from tests of association. Statistical analysis was completed using Chi-squared and Fisher's exact tests where appropriate. Attention was focused on residents' level of interest in practice ownership, anticipated time to practice ownership following graduation, and total educational debt.

To incentivize participation, the residents were informed that for every completed survey \$1.00, up to \$500.00, would be donated to the AAPD Foundation (a donation of \$307.00 was made on July 11, 2020 by the author). Additionally, on April 30, 2020 an email describing this study and its goals was sent to pediatric dentistry residency program directors in the United States asking them to encourage their residents' participation, while maintaining the study's voluntary nature. An effort was made to locate the contact information for every program director through individual program websites and the American Dental Education Association's Postdoctoral Application Support Service online program search engine. 94 emails were sent to program directors and two of these messages were returned as undeliverable.

Results

The complete descriptive statistics for the survey can be found in Table 1, and Tables 2, 3, and 4 show the analysis of responses based upon level of interest in practice ownership, anticipated time to practice ownership, and educational debt, respectively. Of the 307 study participants, 61.2% indicated they were extremely or very interested in practice ownership and 49.8% anticipated becoming an owner within five years of graduation from residency (Table 1, Figures 1 and 2).

Demographics

With regards to respondent demographics, 69.1% identified as female and 28.7% as male, while 45.6% reported being 29 years old or younger and 54.4% were 30 or older (Table 1). Gender was found to be associated with both one's level of interest in practice ownership and anticipated time to practice ownership. Residents identifying as male were more likely to report being extremely or very interested in practice ownership than were females (Table 2, 78.4% versus 55.0%, $P = 0.001$), and male residents were more likely to anticipate becoming a practice owner within five years of graduation from residency (Table 3, 73.9% versus 41.2%, $P < 0.001$). Additionally, age was associated with anticipated time to practice ownership, as individuals 30 years old and older were more likely than those 29 and younger to anticipate becoming a practice owner within five years of graduation (Table 3, 59.9% versus 38.1%, $P < 0.001$). No significant relationships were observed related to residents' race or year in residency.

Educational Debt and Finances

Among participating residents, 17.3% expected to have no educational debt at the completion of residency, 59.6% estimated owing up to \$399,999, and 22.1% reported owing \$400,000 or more (Table 1, Figure 3). Residents who attended a private dental school for their doctoral education were more likely to report having a student loan balance of \$400,000 or higher at the completion of residency than were

those who attended a public institution (Table 4, 38.2% versus 11.6%, $P < 0.001$). Individuals who indicated their educational debt did not influence or only slightly influenced their immediate post-graduation employment plans were significantly less likely to have student loans totaling \$400,000 or more than were residents who reported a moderate influence and those reporting educational debt very much or completely influenced their post-graduation employment plans (Table 4, 13.2% versus 22.1% and 27.2%, $P = 0.011$). Those feeling completely or very comfortable assuming a loan to acquire a practice were less likely to have an educational debt burden of \$400,000 or more compared to residents feeling moderately comfortable and to residents feeling slightly or not at all comfortable or that had no intentions of ever owning a dental practice (Table 4, 11.5% versus 22.6% and 29.3%, $P = 0.002$). Similarly, residents who reported feeling completely or very comfortable assuming a business loan were more likely to be extremely or very interested in practice ownership (Table 2, 85.1% versus 67.4% and 42.1%, $P < 0.001$), and they were more likely to anticipate becoming a practice owner within five years of graduation (Table 3, 74.7% versus 62.8% and 25.6%, $P < 0.001$).

Practice History, Plans, and Perceptions

Level of interest in and anticipated time to practice ownership were significantly associated with residents' past practice experience, future practice plans, and perception of practice management preparation. Those with practice experience prior to residency were less likely to report being extremely or very interested in practice ownership than were those who started residency upon graduation from dental school (Table 2, 54.0% versus 68.8%, $P = 0.027$). However, of the 152 respondents with practice experience prior to starting residency, residents with a history of working in private practice were more likely to be extremely or very interested in practice ownership than were those without such experience (Table 2, 67.1% versus 41.8%, $P = 0.003$). A substantial majority of study participants, 75.9%, anticipated practicing to some degree in private practice immediately after completing their residency, while 20.5% expected to do so with a DSO (Table 1). Individuals planning to work in private practice immediately

following their graduation were more likely to be extremely or very interested in practice ownership compared to those not planning to work in private practice (Table 2, 68.1% versus 40.5%, $P < 0.001$), and they were also more likely to anticipate becoming a practice owner within five of graduation (Table 3, 56.9% versus 28.4%, $P < 0.001$). Whereas residents planning to practice in a DSO immediately following graduation were less likely to report being extremely or very interested in practice ownership than were those not planning to affiliate with a DSO (Table 2, 50.0% versus 64.3%, $P = 0.037$). Half of survey respondents indicated they believed that managing the business operations of dental practice today is significantly more challenging than it was 20 years ago (Table 1). Only 5.5% reported feeling completely or very prepared to manage the business operations of a practice, while 24.1% felt moderately prepared to do so and 69.7% felt slightly or not at all prepared (Table 1). Those who reported feeling completely, very, or moderately prepared to manage the business operations of dental practice were more likely to be extremely or very interested in practice ownership compared to those who felt slightly or not at all prepared (Table 2, 78.0% versus 54.2%, $P < 0.001$), and they were more likely to anticipate becoming an owner within five years of completing residency (Table 3, 78.0% versus 54.2%, $P < 0.001$).

The most cited concerns or considerations related to practice ownership, in order of frequency of selection, were level of practice management preparation, predictable work-life balance, complexity or competitiveness of the dental marketplace, income potential, professional autonomy, and educational debt (Table 1, Figure 4). When asked, residents who selected educational debt as one of their four primary concerns or considerations pertaining to practice ownership were more likely to report having an educational debt of \$400,000 or more at graduation compared to those that did not choose educational debt (Table 4, 34.5% versus 15.2%, $P < 0.001$). Individuals who cited income potential as a primary concern or consideration were more likely to report being extremely or very interested in practice ownership compared to those that did not select income potential (Table 2, 72.9% versus 51.8%, $P < 0.001$), and they were more likely to anticipate becoming a practice owner within five years of graduation (Table 3, 60.7%

versus 41.0%, $P < 0.001$). Residents who reported guaranteed salary and benefits as a primary concern or consideration pertaining to practice ownership were less likely to report being extremely or very interested in practice ownership compared to those that did not (Table 2, 46.0% versus 68.9%, $P < 0.001$), and they were also less likely to report anticipating becoming a practice owner within five years (42.0% versus 53.9%, $P = 0.009$). Residents who indicated that professional autonomy was a primary concern or consideration regarding practice ownership were more likely to be extremely or very interested in practice ownership than were those that did not chose professional autonomy (Table 2, 82.6% versus 48.7%, $P < 0.001$), and they were more likely to anticipate becoming a practice owner within five years of graduation (Table 3, 66.0% versus 44.0%, $P < 0.001$). Those selecting a desire to work part-time were less likely to report being extremely or very interested in practice ownership compared to those that did not (Table 2, 46.9% versus 65.3%, $P = 0.012$), and they were also less likely to anticipate becoming a practice owner within five years of graduation from residency (Table 3, 32.8% versus 54.6%, $P = 0.001$).

Discussion

Interest in Practice Ownership

Prompted by declining dental practice ownership and rising educational debt, this survey-based study investigated the interest in practice ownership among pediatric dentistry residents. Based upon the responses received, there appears to be broad interest in practice ownership, as over 60% of participating residents reported being either extremely or very interested in ownership and half anticipated becoming an owner within five years of graduation from residency. The survey was administered shortly after the onset of the SARS-CoV-2 pandemic, during a time when much of the country was under strict quarantine. It is possible the subsequent social and economic fallout weighed on the minds of participants as they contemplated their willingness to assume the risks of starting or acquiring a dental practice, and it could be reasonably speculated that this interest in practice ownership might have been marginally higher absent the pandemic's influence. Much work will be required to more fully understand the long-term effects of COVID-19 on the practice of dentistry.

Educational Debt

Many factors ultimately go into the decision to become a practice owner, whether that might be one's preferred work-life balance or desired level of professional autonomy. Not the least of these considerations are financial in nature. Starting a dental practice or purchasing an established office comes at a significant cost, and assuming further financial obligations in addition to existing educational debt will undoubtedly give many pause. This study's findings validate the preceding assumption, as an inverse relationship was seen between one's level of comfort in assuming a business loan to acquire a dental practice and having an educational debt burden of \$400,000 or greater. However, no significant relationship was observed between educational debt and interest in practice ownership. Other investigators who have examined the effects of educational debt in dentistry have found this burden to

be less influential than practitioner demographics on several career choices and outcomes.^{12, 13} It has been noted that female dentists are less likely to specialize or own a practice and that they are more likely to join a DSO or LGP.^{12, 13} Consistent with what has been previously reported, here it was found that residents identifying as male were over 40% more likely to report being extremely or very interested in practice ownership than were their female counterparts, and males were nearly 80% more likely to anticipate becoming a practice owner within five years of graduation from residency.

Practice Management and Administration

When study participants were asked to select their chief concerns pertaining to practice ownership, educational debt was only the sixth most cited. In fact, level of practice management preparation was the most frequently cited concern or consideration. Half of the survey respondents reported feeling that it is significantly more challenging to manage a dental practice today compared to 20 years ago, yet scarcely more than 5% reported feeling completely or very prepared to manage the business operations of a practice. Unsurprisingly then, those feeling completely, very, or moderately prepared to manage the operations of dental practice were over 40% more likely to be extremely or very interested in practice ownership than were those who felt slightly or not at all prepared to do so. Practice experience prior to residency in general was inversely associated with level of interest in practice ownership, while experience in private practice specifically was positively associated with this interest. This raises the question, was there something about these experiences that made respondents feel more or less prepared to administratively manage an office? In a 2017 survey of senior dental students in the United States, nearly a third felt that inadequate time was dedicated to practice administration in their school's curriculum and barely half felt prepared to oversee a practice.⁹ It appears that practice management and administration may be an area of dental education that is widely lacking. Additionally, without an adequate background in the subject, it is rightly asked if practitioners can make informed career decisions in today's dynamic practice environment.¹⁹

Return on Investment

While the forces suspected of driving the decline in dental practice ownership and likewise the expansion of LGPs and DSOs will continue to be debated and scrutinized, it is undeniable that the cost of a dental education is presently on an unsustainable trajectory. In this survey of pediatric dentistry residents, over 20% of respondents expected to finish residency with a student loan balance of \$400,000 or more, and this is representative of recent dental school graduates as a whole.⁹ The year-over-year increases in tuition and fees can only go on so long as prospective dental students believe that they will see a positive return on their investment.^{10, 20 - 22} Beyond this inflection point there will almost certainly be a collapse in the number and quality of dental school applicants, posing an existential threat to dental schools.^{10, 20 - 22} Academic institutions would be wise to preempt the bursting of this bubble by controlling further increases in their cost of attendance before the popping sound otherwise makes news headlines, as similar events and conditions did in the 1970s and 1980s when several dental schools shuttered their doors.^{10, 20 - 23}

Study Limitations and Future Research

The results of this study have added to the body of evidence that educational debt does have an influence on dentists' career and life choices, however these findings only allude to the magnitude of this effect relative to other pertinent factors. Due to the potential for non-response bias manifested in the study's findings, these findings may not be generalizable to all pediatric dentistry residents. Also, a significant limitation of this study is that it examined a subjective interest in dental practice ownership, not actual practice ownership. A follow up study is indicated to evaluate the real practice ownership by this cohort in the future and the factors that were behind the decision to become an owner or to remain an employee. Additionally, research is needed to explore the current state of practice management education in dental

school and residency and what might be improved to better prepare graduates for the increasingly complex business environment that awaits them.

Conclusions

1. There appears to be broad interest in practice ownership among pediatric dentistry residents in the United States.
2. Relatively high educational debt may negatively influence future practice ownership due to an increased apprehension and reluctance to assume further financial obligations.
3. Educational debt may be less influential on practice ownership than other factors, such as level of practice management preparation and gender.

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Appendix 1.

Survey Questions

1. What is your age?

- Under 25
- 25 to 29
- 30 to 34
- 35 to 39
- 40 and above

2. With which gender do you self-identify?

- Female
- Male
- Other
- Prefer not to state

2B. You answered "other" above, please specify.

(Free response)

3. With which race(s) do you self-identify? Select all that apply.

- American Indian or Alaska Native
- Asian
- Black or African American
- Hispanic or Latino
- Native Hawaiian or other Pacific Islander
- White
- Other
- Prefer not to state

3B. You answered "other" above, please specify.

(Free response)

4. What is your year in residency?

- R1
- R2 or R3

5. Did you attend a public or private dental school for your doctoral education?

- Public
- Private

6. Did you practice dentistry prior to starting your residency? If yes, in which clinical setting(s)? Select all that apply.

- No
- Yes, private practice
- Yes, Dental Service Organization (DSO) or corporate owned office
- Yes, Federally Qualified Health Center (FQHC) or nonprofit public health clinic
- Yes, academic institution
- Yes, military or other government agency
- Yes, other
- Yes, completed other dental residency

6B. You answered "other" above, please specify.

(Free response)

7. In which state do you anticipate practicing immediately after graduation?

- Alabama
- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia
- Florida
- Georgia
- Hawaii
- Idaho
- Illinois
- Indiana
- Iowa
- Kansas
- Kentucky
- Louisiana
- Maine
- Maryland
- Massachusetts
- Michigan
- Minnesota
- Mississippi
- Missouri
- Montana
- Nebraska
- Nevada
- New Hampshire
- New Jersey
- New Mexico

- New York
- North Carolina
- North Dakota
- Ohio
- Oklahoma
- Oregon
- Pennsylvania
- Puerto Rico
- Rhode Island
- South Carolina
- South Dakota
- Tennessee
- Texas
- Utah
- Vermont
- Virginia
- Washington
- West Virginia
- Wisconsin
- Wyoming
- Outside of the United States

8. In which clinical setting(s) do you anticipate practicing immediately after graduation? Select all that apply.

- Private practice
- Dental Service Organization (DSO) or corporate owned office
- Federally Qualified Health Center (FQHC) or nonprofit public health clinic
- Academic institution
- Military or other government agency
- Other
- Unsure or undecided

8B. You answered "other" above, please specify.

(Free response)

9. What is your opinion of large Dental Service Organizations (DSOs), such as Aspen Dental, Heartland Dental, and Pacific Dental Services?

- Very positive
- Positive
- Neutral
- Negative
- Very negative

10. What is your level of interest in owning or partially owning a dental practice?

- Extremely interested

- Very interested
- Moderately interested
- Slightly interested
- Not at all interested

11. How soon after graduation are you likely to become a practice owner?

- Within 5 years
- Within 10 years
- Within 15 years
- More than 15 years
- No intentions of ever owning a dental practice

12. In your opinion, how challenging is managing the business operations of a dental practice today compared to how it was for practitioners 20 years ago?

- Significantly more challenging
- Moderately more challenging
- Equally challenging
- Moderately less challenging
- Significantly less challenging

13. How prepared do you feel to manage the business operations of a dental practice?

- Completely prepared
- Very prepared
- Moderately prepared
- Slightly prepared
- Not at all prepared

14. What will be your estimated total student loan debt at the completion of your residency?

- No educational debt
- Up to \$49K
- \$50K to \$99K
- \$100K to \$149K
- \$150K to \$199K
- \$200K to \$249K
- \$250K to \$299K
- \$300K to \$349K
- \$350K to \$399K
- \$400K to \$449K
- \$450K to \$499K
- \$500K to \$549K
- \$550K to \$599K
- \$600K or more

15. Does your residency program charge tuition and does it pay a stipend?

- Charges tuition and pays a stipend

- Charges tuition and does not pay a stipend
- Does not charge tuition and pays a stipend
- Does not charge tuition and does not pay a stipend

16. To what degree has your educational debt or lack thereof influenced your immediate post-graduation employment plans?

- Completely influenced
- Very much influenced
- Moderately influenced
- Slightly influenced
- Not at all influenced

17. To what degree has your educational debt or lack thereof influenced your intentions of owning or partially owning a dental practice?

- Completely influenced
- Very much influenced
- Moderately influenced
- Slightly influenced
- Not at all influenced

18. To what degree has your educational debt or lack thereof influenced other major financial decisions and life choices, such as buying a home or getting married?

- Completely influenced
- Very much influenced
- Moderately influenced
- Slightly influenced
- Not at all influenced

19. How comfortable would you feel assuming loans to finance the acquisition or partial acquisition of a dental practice?

- Completely comfortable
- Very comfortable
- Moderately comfortable
- Slightly comfortable
- Not at all comfortable
- No intentions of ever owning a dental practice

20. As you consider whether or not to become a practice owner, what are your four (4) greatest concerns or considerations?

- Level of practice management preparation
- Desire to maintain geographic flexibility
- Complexity or competitiveness of the dental marketplace
- Educational debt
- Desire to work part-time
- Predictable work-life balance

- Guaranteed salary and benefits
- Professional autonomy
- Family obligations
- Income potential
- Other

20B. You answered "other" above, please specify.

(Free response)

Table 1.

Descriptive Statistics, N (%)

Total N = 307

Demographics

Gender		
	Female	212 (69.1%)
	Male	88 (28.7%)
	Other	1 (0.3%)
	Prefer not to state	2 (0.7%)
	Missing	4 (1.1%)
Age		
	Under 25	0 (0.0%)
	25 to 29	140 (45.6%)
	30 to 34	124 (40.4%)
	35 to 39	33 (10.8%)
	40 and above	10 (3.3%)
Race		
	White	172 (56.0%)
	Asian	54 (17.6%)
	Black or African American	22 (7.2%)
	Hispanic or Latino	18 (5.9%)
	American Indian or Alaska Native	0 (0.0%)
	Native Hawaiian or other Pacific Islander	1 (0.3%)
	Other	33 (10.8%)
	Missing	7 (2.3%)
Year in Residency		
	R1	150 (48.9%)
	R2 or R3	157 (51.1%)

Educational Debt and Finances

Type of Dental School Attended		
	Public	183 (59.6%)
	Private	124 (40.4%)
Estimated Total Educational Debt at Completion of Residency		
	No educational debt	53 (17.3%)
	Up to \$49K	9 (2.9%)
	\$50K to \$99K	20 (6.5%)
	\$100K to \$149K	14 (4.6%)

\$150K to \$199K	22 (7.2%)
\$200K to \$249K	34 (11.1%)
\$250K to \$299K	24 (7.8%)
\$300K to \$349K	40 (13.0%)
\$350K to \$399K	20 (6.5%)
\$400K to \$449K	19 (6.2%)
\$450K to \$499K	15 (4.9%)
\$500K to \$549K	9 (2.9%)
\$550K to \$599K	11 (3.6%)
\$600K or more	14 (4.6%)
Missing	3 (1.0%)
Residency Program Tuition and Stipend	
Charges tuition and pays a stipend	100 (32.6%)
Charges tuition and does not pay a stipend	29 (9.5%)
Does not charge tuition and pays a stipend	176 (57.3%)
Does not charge tuition and does not pay a stipend	1 (0.3%)
Missing	1 (0.3%)
Comfort Level Assuming Loans to Finance Dental Practice Acquisition	
Completely comfortable	34 (11.1%)
Very comfortable	53 (17.3%)
Moderately comfortable	86 (28.0%)
Slightly comfortable	70 (22.8%)
Not at all comfortable	46 (15.0%)
No intentions of ever owning a dental practice	17 (5.5%)
Missing	1 (0.3%)
Level of Influence of Educational Debt on Immediate Post-graduation Employment Plans	
Completely influenced	50 (16.3%)
Very much influenced	108 (35.2%)
Moderately influenced	69 (22.5%)
Slightly influenced	28 (9.1%)
Not at all influenced	49 (16.0%)
Missing	3 (1.0%)
Level of Influence of Educational Debt on Practice Ownership Intentions	
Completely influenced	36 (11.7%)
Very much influenced	82 (26.7%)
Moderately influenced	81 (26.4%)
Slightly influenced	38 (12.4%)
Not at all influenced	68 (22.2%)
Missing	2 (0.7%)

Level of Influence of Educational Debt on Major Financial Decisions and Life Choices

Completely influenced	43 (14.0%)
Very much influenced	98 (31.9%)
Moderately influenced	69 (22.5%)
Slightly influenced	47 (15.3%)
Not at all influenced	49 (16.0%)
Missing	1 (0.3%)

Practice History, Plans, and Perceptions

Level of Interest in Owning or Partially Owning a Dental Practice

Extremely interested	101 (32.9%)
Very interested	87 (28.3%)
Moderately interested	62 (20.2%)
Slightly interested	34 (11.1%)
Not at all interested	22 (7.2%)
Missing	1 (0.3%)

Anticipated Time to Practice Ownership After Graduation

Within 5 years	153 (49.8%)
Within 10 years	99 (32.3%)
Within 15 years	12 (3.9%)
More than 15 years	3 (1.0%)
No intentions of ever owning a dental practice	39 (12.7%)
Missing	1 (0.3%)

Practice Settings Prior to Residency*†

Private practice	73 (48.0%)
Dental Service Organization (DSO) or corporate owned office	45 (29.6%)
Federally Qualified Health Center (FQHC) or nonprofit public health clinic	26 (17.1%)
Academic institution	11 (7.2%)
Military or other government agency	18 (11.8%)
Completed other dental residency	3 (2.0%)
Other	32 (21.1%)

Anticipated Practice Setting(s) After Graduation*

Private practice	233 (75.9%)
Dental Service Organization (DSO) or corporate owned office	63 (20.5%)
Federally Qualified Health Center (FQHC) or nonprofit public health clinic	55 (17.9%)

Academic institution	47 (15.3%)
Military or other government agency	7 (2.3%)
Other	7 (2.3%)
Unsure or undecided	30 (9.8%)
Anticipated Practice Location Following Graduation (By AAPD District)	
Northeastern	61 (19.9%)
Southeastern	55 (17.9%)
North Central	46 (15.0%)
Western	62 (20.2%)
Southwestern	63 (20.5%)
Outside of the United States	14 (4.6%)
Missing	6 (2.0%)
Opinion of Large Dental Service Organizations	
Very positive	3 (1.0%)
Positive	15 (4.9%)
Neutral	119 (38.8%)
Negative	134 (43.7%)
Very negative	36 (11.7%)
Perceived Level of Preparedness to Manage Business Operations of Dental Practice	
Completely prepared	4 (1.3%)
Very prepared	13 (4.2%)
Moderately prepared	74 (24.1%)
Slightly prepared	105 (34.2%)
Not at all prepared	109 (35.5%)
Missing	2 (0.7%)
Perceived Challenge of Managing Business Operations of Dental Practice Today Compared to 20 Years Ago	
Significantly more challenging	155 (50.5%)
Moderately more challenging	123 (40.1%)
Equally challenging	25 (8.1%)
Moderately less challenging	3 (1.0%)
Significantly less challenging	0 (0.0%)
Missing	1 (0.3%)
Greatest Concerns or Considerations Regarding Practice Ownership*	
Level of practice management preparation	200 (65.2%)
Predictable work-life balance	179 (58.3%)
Complexity or competitiveness of the dental marketplace	150 (48.9%)
Income potential	140 (45.6%)

Professional autonomy	115 (37.5%)
Educational debt	113 (36.8%)
Guaranteed salary and benefits	100 (32.6%)
Family obligations	81 (26.4%)
Desire to work part-time	64 (20.9%)
Desire to maintain geographic flexibility	50 (16.3%)
Other	13 (4.2%)

**Respondent could choose multiple options. Will not sum to 100%.*

†Out of 152 who had practice experience prior to residency.

Table 2.

Associations with Interest in Practice Ownership

	Extremely or Very Interested in Practice Ownership, N (%)	P-value*†
Gender		0.001
	Female 116 (55.0%)	
	Male 69 (78.4%)	
	All others 3 (42.9%)	
Age		0.359
	29 and under 86 (61.9%)	
	30 and above 102 (61.1%)	
Race		0.057‡
	White 114 (66.7%)	
	Asian 30 (55.6%)	
	Black or African American 13 (59.1%)	
	Hispanic or Latino 9 (50.0%)	
	All others 20 (58.8%)	
	Missing 2 (28.6%)	
Year in Residency		0.793
	R1 94 (62.7%)	
	R2 or R3 94 (60.3%)	
Type of Dental School Attended		0.531
	Public 115 (63.2%)	
	Private 73 (58.9%)	
Estimated Total Educational Debt at Completion of Residency		0.120
	No educational debt 31 (58.5%)	
	Up to \$199K 35 (53.9%)	
	\$200K to \$399K 82 (69.5%)	
	\$400K or more 38 (55.9%)	
	Missing 2 (100.0%)	
Residency Program Charges Tuition		0.810
	No 109 (61.6%)	
	Yes 79 (61.2%)	
Residency Program Pays a Stipend		0.375
	No 16 (53.3%)	
	Yes 172 (62.3%)	
Comfort Level Assuming Loans to Finance Dental Practice Acquisition		<0.001

Completely or very comfortable	74 (85.1%)	
Moderately comfortable	58 (67.4%)	
Slightly or not at all comfortable, or no intentions of ever owning a dental practice	56 (42.1%)	
Level of Influence of Educational Debt on Immediate Post-graduation Employment Plans		0.625
Completely or very much influenced	96 (60.8%)	
Moderately influenced	41 (59.4%)	
Slightly influenced or not at all influenced	50 (64.9%)	
Missing	1 (50.0%)	
Level of Influence of Educational Debt on Practice Ownership Intentions		<0.001
Completely or very much influenced	80 (67.8%)	
Moderately influenced	52 (64.2%)	
Slightly influenced or not at all influenced	56 (52.8%)	
Missing	0 (0.0%)	
Level of Influence of Educational Debt on Major Financial Decisions and Life Choices		0.441
Completely or very much influenced	91 (64.5%)	
Moderately influenced	37 (53.6%)	
Slightly influenced or not at all influenced	60 (62.5%)	
Anticipated Time to Practice Ownership After Graduation		<0.001
Within 5 years	131 (85.6%)	
Within 10 years	55 (55.6%)	
Within 15 years, more than 15 years, or no intentions of ever owning a dental practice	2 (3.7%)	
Practice Experience(s) Prior to Residency		0.027
No	106 (68.8%)	
Yes	82 (54.0%)	
Practice Settings Prior to Residency§		0.003
<i>Private practice</i>		
No	33 (41.8%)	
Yes	49 (67.1%)	
<i>Dental Service Organization (DSO) or corporate owned office</i>		0.845
No	59 (55.1%)	
Yes	23 (51.1%)	
<i>Federally Qualified Health Center (FQHC) or nonprofit public health clinic</i>		0.132
No	68 (54.0%)	
Yes	14 (53.9%)	
<i>Academic institution</i>		0.841‡

	No	76 (53.9%)	
	Yes	6 (54.6%)	
<i>Military or other government agency</i>			0.594‡
	No	73 (54.5%)	
	Yes	9 (50.0%)	
<i>Completed other dental residency</i>			0.058‡
	No	82 (55.0%)	
	Yes	0 (0.0%)	
<i>Other</i>			
	No	68 (55.7%)	0.102
	Yes	14 (46.7%)	
Anticipated Practice Setting(s) After Graduation			
<i>Private practice</i>			<0.001
	No	30 (40.5%)	
	Yes	158 (68.1%)	
<i>Dental Service Organization (DSO) or corporate owned office</i>			0.037
	No	157 (64.3%)	
	Yes	31 (50.0%)	
<i>Federally Qualified Health Center (FQHC) or nonprofit public health clinic, academic institution, military or other government agency, or other</i>			0.106
	No	134 (65.4%)	
	Yes	54 (53.5%)	
<i>Unsure or undecided</i>			0.398
	No	173 (62.7%)	
	Yes	15 (50.0%)	
Anticipated Practice Location Following Graduation (By AAPD District)			
			0.857‡
	Northeastern	31 (51.7%)	
	Southeastern	32 (58.2%)	
	North Central	30 (65.2%)	
	Western	40 (64.5%)	
	Southwestern	42 (66.7%)	
	Outside U.S.	9 (64.3%)	
	Missing	4 (66.7%)	
Opinion of Large Dental Service Organizations			
			0.077
	Very positive, positive, or neutral	74 (54.4%)	
	Negative or very negative	114 (67.1%)	
Perceived Level of Preparedness to Manage Business Operations of Dental Practice			
			<0.001

Completely, very, or moderately prepared	71 (78.0%)	
Slightly or not at all prepared	116 (54.2%)	
Missing	1 (100.0%)	
Perceived Challenge of Managing Business Operations of Dental Practice Today Compared to 20 Years Ago		0.509
Significantly or moderately more challenging	170 (61.2%)	
Equally, moderately less, or significantly less challenging	18 (64.3%)	
Greatest Concerns or Considerations Regarding Practice Ownership		
<i>Level of practice management preparation</i>		0.882
No	67 (63.2%)	
Yes	121 (60.5%)	
<i>Predictable work-life balance</i>		0.277
No	83 (65.4%)	
Yes	105 (58.7%)	
<i>Complexity or competitiveness of the dental marketplace</i>		0.799
No	93 (59.6%)	
Yes	95 (63.3%)	
<i>Income potential</i>		<0.001
No	86 (51.8%)	
Yes	102 (72.9%)	
<i>Professional autonomy</i>		<0.001
No	93 (48.7%)	
Yes	95 (82.6%)	
<i>Educational debt</i>		0.658
No	121 (62.7%)	
Yes	67 (59.3%)	
<i>Guaranteed salary and benefits</i>		<0.001
No	142 (68.9%)	
Yes	46 (46.0%)	
<i>Family obligations</i>		0.766
No	140 (62.2%)	
Yes	48 (59.3%)	
<i>Desire to work part-time</i>		0.012
No	158 (65.3%)	
Yes	30 (46.9%)	
<i>Desire to maintain geographic flexibility</i>		0.192
No	163 (63.7%)	
Yes	25 (50.0%)	

**Missing values excluded from tests of association.*

†Calculated using a Chi-square test except where indicated by ‡.

‡Calculated using a Fisher's Exact test.

§Out of 152 respondents with practice experience prior to residency.

Table 3.

Associations with Time to Practice Ownership

	Anticipate Becoming an Owner Within 5 Years of Graduation, N (%)	P-value*†
Gender		<0.001
	Female	87 (41.2%)
	Male	65 (73.9%)
	All others	1 (14.3%)
Age		<0.001
	29 and under	53 (38.1%)
	30 and above	100 (59.9%)
Race		0.285‡
	White	86 (50.3%)
	Asian	28 (51.9%)
	Black or African American	13 (59.1%)
	Hispanic or Latino	8 (44.4%)
	All others	16 (47.1%)
	Missing	2 (28.6%)
Year in Residency		0.658
	R1	71 (47.3%)
	R2 or R3	82 (52.6%)
Type of Dental School Attended		0.611
	Public	91 (50.0%)
	Private	62 (50.0%)
Estimated Total Educational Debt at Completion of Residency		0.487
	No educational debt	29 (54.7%)
	Up to \$199K	33 (50.8%)
	\$200K to \$399K	62 (52.5%)
	\$400K or more	27 (39.7%)
	Missing	2 (100.0%)
Residency Program Charges Tuition		0.808
	No	86 (48.6%)
	Yes	67 (51.9%)
Residency Program Pays a Stipend		0.250
	No	19 (63.3%)
	Yes	134 (48.6%)
Comfort Level Assuming Loans to Finance Dental Practice Acquisition		<0.001
	Completely or very comfortable	65 (74.7%)

Moderately comfortable	54 (62.8%)	
Slightly or not at all comfortable, or no intentions of ever owning a dental practice	34 (25.6%)	
Level of Influence of Educational Debt on Immediate Post-graduation Employment Plans		0.075
Completely or very much influenced	68 (43.0%)	
Moderately influenced	36 (52.2%)	
Slightly influenced or not at all influenced	48 (62.3%)	
Missing	1 (50.0%)	
Level of Influence of Educational Debt on Practice Ownership Intentions		0.009
Completely or very much influenced	57 (48.3%)	
Moderately influenced	47 (58.0%)	
Slightly influenced or not at all influenced	49 (46.2%)	
Missing	0 (0.0%)	
Level of Influence of Educational Debt on Major Financial Decisions and Life Choices		0.850
Completely or very much influenced	69 (48.9%)	
Moderately influenced	34 (49.3%)	
Slightly influenced or not at all influenced	50 (52.1%)	
Practice Experience(s) Prior to Residency		<0.001
No	62 (40.3%)	
Yes	91 (59.9%)	
Practice Settings Prior to Residency§		
<i>Private practice</i>		0.010
No	45 (57.0%)	
Yes	46 (63.0%)	
<i>Dental Service Organization (DSO) or corporate owned office</i>		0.401
No	61 (57.0%)	
Yes	30 (66.7%)	
<i>Federally Qualified Health Center (FQHC) or nonprofit public health clinic</i>		0.253
No	76 (60.3%)	
Yes	15 (57.7%)	
<i>Academic institution</i>		0.830‡
No	85 (60.3%)	
Yes	6 (54.6%)	
<i>Military or other government agency</i>		0.941‡
No	80 (59.7%)	
Yes	11 (61.1%)	
<i>Completed other dental residency</i>		0.063‡

	No	91 (61.1%)	
	Yes	0 (0.0%)	
<i>Other</i>			0.004
	No	81 (66.4%)	
	Yes	10 (33.3%)	
Anticipated Practice Setting(s) After Graduation			
<i>Private practice</i>			<0.001
	No	21 (28.4%)	
	Yes	132 (56.9%)	
<i>Dental Service Organization (DSO) or corporate owned office</i>			0.066
	No	130 (53.3%)	
	Yes	23 (37.1%)	
<i>Federally Qualified Health Center (FQHC) or nonprofit public health clinic, academic institution, military or other government agency, or other</i>			0.003
	No	113 (55.1%)	
	Yes	40 (39.6%)	
<i>Unsure or undecided</i>			0.016
	No	145 (52.5%)	
	Yes	8 (26.7%)	
Anticipated Practice Location Following Graduation (By AAPD District)			Too few observations
	Northeastern	21 (35.0%)	
	Southeastern	29 (52.7%)	
	North Central	25 (54.4%)	
	Western	37 (59.7%)	
	Southwestern	31 (49.2%)	
	Outside U.S.	7 (50.0%)	
	Missing	3 (50.0%)	
Opinion of Large Dental Service Organizations			0.177
	Very positive, positive, or neutral	60 (44.1%)	
	Negative or very negative	93 (54.7%)	
Perceived Level of Preparedness to Manage Business Operations of Dental Practice			<0.001
	Completely, very, or moderately prepared	71 (78.0%)	
	Slightly or not at all prepared	116 (54.2%)	
	Missing	1 (100.0%)	
Perceived Challenge of Managing Business Operations of Dental Practice Today Compared to 20 Years Ago			0.344‡

Significantly or moderately more challenging	135 (48.6%)	
Equally, moderately less, or significantly less challenging	18 (64.3%)	
Greatest Concerns or Considerations Regarding Practice Ownership		
<i>Level of practice management preparation</i>		0.312
No	59 (55.7%)	
Yes	94 (47.0%)	
<i>Predictable work-life balance</i>		0.252
No	66 (52.0%)	
Yes	87 (48.6%)	
<i>Complexity or competitiveness of the dental marketplace</i>		0.385
No	74 (47.4%)	
Yes	79 (52.7%)	
<i>Income potential</i>		<0.001
No	68 (41.0%)	
Yes	85 (60.7%)	
<i>Professional autonomy</i>		<0.001
No	84 (44.0%)	
Yes	69 (60.0%)	
<i>Educational debt</i>		0.408
No	102 (52.9%)	
Yes	51 (45.1%)	
<i>Guaranteed salary and benefits</i>		0.009
No	111 (53.9%)	
Yes	42 (42.0%)	
<i>Family obligations</i>		0.180
No	106 (47.1%)	
Yes	47 (58.0%)	
<i>Desire to work part-time</i>		0.001
No	132 (54.6%)	
Yes	21 (32.8%)	
<i>Desire to maintain geographic flexibility</i>		0.179
No	134 (52.3%)	
Yes	19 (38.0%)	

*Missing values excluded from tests of association.

†Calculated using a Chi-square test except where indicated by ‡.

‡Calculated using a Fisher's Exact test.

§Out of 152 respondents with practice experience prior to residency.

Table 4.

Associations with Educational Debt

		Student Loans of \$400,000 or More, N (%)	P-value*†
Gender			0.392
	Female	51 (24.4%)	
	Male	16 (18.2%)	
	All others	1 (14.3%)	
Age			0.865
	29 and under	29 (21.0%)	
	30 and above	39 (23.5%)	
Race			0.780‡
	White	41 (24.3%)	
	Asian	14 (25.9%)	
	Black or African American	3 (13.6%)	
	Hispanic or Latino	3 (16.7%)	
	All others	6 (17.7%)	
	Missing	1 (14.3%)	
Year in Residency			0.922
	R1	35 (23.3%)	
	R2 or R3	33 (21.4%)	
Type of Dental School Attended			<0.001
	Public	21 (11.6%)	
	Private	47 (38.2%)	
Residency Program Charges Tuition			0.069
	No	45 (25.7%)	
	Yes	23 (17.8%)	
Residency Program Pays a Stipend			0.457
	No	9 (30.0%)	
	Yes	59 (21.5%)	
Comfort Level Assuming Loans to Finance Dental Practice Acquisition			0.002
	Completely or very comfortable	10 (11.5%)	
	Moderately comfortable	19 (22.6%)	
	Slightly or not at all comfortable, or no intentions of ever owning a dental practice	39 (29.3%)	
Level of Influence of Educational Debt on Immediate Post-graduation Employment Plans			0.011
	Completely or very much influenced	43 (27.2%)	
	Moderately influenced	15 (22.1%)	

Slightly influenced or not at all influenced	10 (13.2%)	
Missing	0 (0.0%)	
Level of Influence of Educational Debt on Practice Ownership Intentions		0.074
Completely or very much influenced	30 (25.4%)	
Moderately influenced	18 (22.5%)	
Slightly influenced or not at all influenced	20 (19.1%)	
Missing	0 (0.0%)	
Level of Influence of Educational Debt on Major Financial Decisions and Life Choices		0.468
Completely or very much influenced	31 (22.0%)	
Moderately influenced	17 (25.0%)	
Slightly influenced or not at all influenced	20 (21.1%)	
Anticipated Time to Practice Ownership After Graduation		0.315
Within 5 years	27 (17.9%)	
Within 10 years	25 (25.3%)	
Within 15 years, more than 15 years, or no intentions of ever owning a dental practice	16 (29.6%)	
Practice Experience(s) Prior to Residency		0.041
No	40 (26.3%)	
Yes	28 (18.4%)	
Practice Settings Prior to Residency§		
<i>Private practice</i>		0.197
No	15 (19.0%)	
Yes	13 (17.8%)	
<i>Dental Service Organization (DSO) or corporate owned office</i>		0.018
No	14 (13.1%)	
Yes	14 (31.1%)	
<i>Federally Qualified Health Center (FQHC) or nonprofit public health clinic</i>		0.131‡
No	22 (17.5%)	
Yes	6 (23.1%)	
<i>Academic institution</i>		0.092‡
No	28 (19.9%)	
Yes	0 (0.0%)	
<i>Military or other government agency</i>		0.004‡
No	28 (20.9%)	
Yes	0 (0.0%)	
<i>Completed other dental residency</i>		0.125‡
No	26 (17.5%)	
Yes	2 (66.7%)	

<i>Other</i>			0.183
	No	21 (17.2%)	
	Yes	7 (23.3%)	
Anticipated Practice Setting(s) After Graduation			
<i>Private practice</i>			0.315
	No	20 (27.0%)	
	Yes	48 (20.9%)	
<i>Dental Service Organization (DSO) or corporate owned office</i>			0.188
	No	49 (20.3%)	
	Yes	19 (30.7%)	
<i>Federally Qualified Health Center (FQHC) or nonprofit public health clinic, academic institution, military or other government agency, or other</i>			0.894
	No	44 (21.7%)	
	Yes	24 (23.8%)	
<i>Unsure or undecided</i>			0.231
	No	58 (21.2%)	
	Yes	10 (33.3%)	
Anticipated Practice Location Following Graduation (By AAPD District)			Too few observations
	Northeastern	18 (30.0%)	
	Southeastern	10 (18.5%)	
	North Central	9 (20.0%)	
	Western	18 (29.0%)	
	Southwestern	10 (15.9%)	
	Outside U.S.	0 (0.0%)	
	Missing	3 (50.0%)	
Opinion of Large Dental Service Organizations			0.409
	Very positive, positive, or neutral	35 (25.9%)	
	Negative or very negative	33 (19.5%)	
Perceived Level of Preparedness to Manage Business Operations of Dental Practice			0.547
	Completely, very, or moderately prepared	20 (22.2%)	
	Slightly or not at all prepared	48 (22.5%)	
	Missing	0 (0.0%)	
Perceived Challenge of Managing Business Operations of Dental Practice Today Compared to 20 Years Ago			0.277
	Significantly or moderately more challenging	59 (21.4%)	
	Equally, moderately less, or significantly less challenging	9 (32.1%)	

Greatest Concerns or Considerations Regarding Practice Ownership

<i>Level of practice management preparation</i>			0.202
	No	27 (25.7%)	
	Yes	41 (20.6%)	
<i>Predictable work-life balance</i>			0.037
	No	36 (28.4%)	
	Yes	32 (18.1%)	
<i>Complexity or competitiveness of the dental marketplace</i>			0.078
	No	41 (26.3%)	
	Yes	27 (18.2%)	
<i>Income potential</i>			0.925
	No	36 (21.8%)	
	Yes	32 (23.0%)	
<i>Professional autonomy</i>			0.227
	No	41 (21.7%)	
	Yes	27 (23.5%)	
<i>Educational debt</i>			<0.001
	No	29 (15.2%)	
	Yes	39 (34.5%)	
<i>Guaranteed salary and benefits</i>			0.473
	No	48 (23.5%)	
	Yes	20 (20.0%)	
<i>Family obligations</i>			0.937
	No	49 (21.9%)	
	Yes	19 (23.8%)	
<i>Desire to work part-time</i>			0.893
	No	55 (22.8%)	
	Yes	13 (20.6%)	
<i>Desire to maintain geographic flexibility</i>			0.035
	No	53 (20.9%)	
	Yes	15 (30.0%)	

*Missing values excluded from tests of association.

†Calculated using a Chi-square test except where indicated by ‡.

‡Calculated using a Fisher's Exact test,

§Out of 152 respondents with practice experience prior to residency.

Figure 1. Level of interest in practice ownership

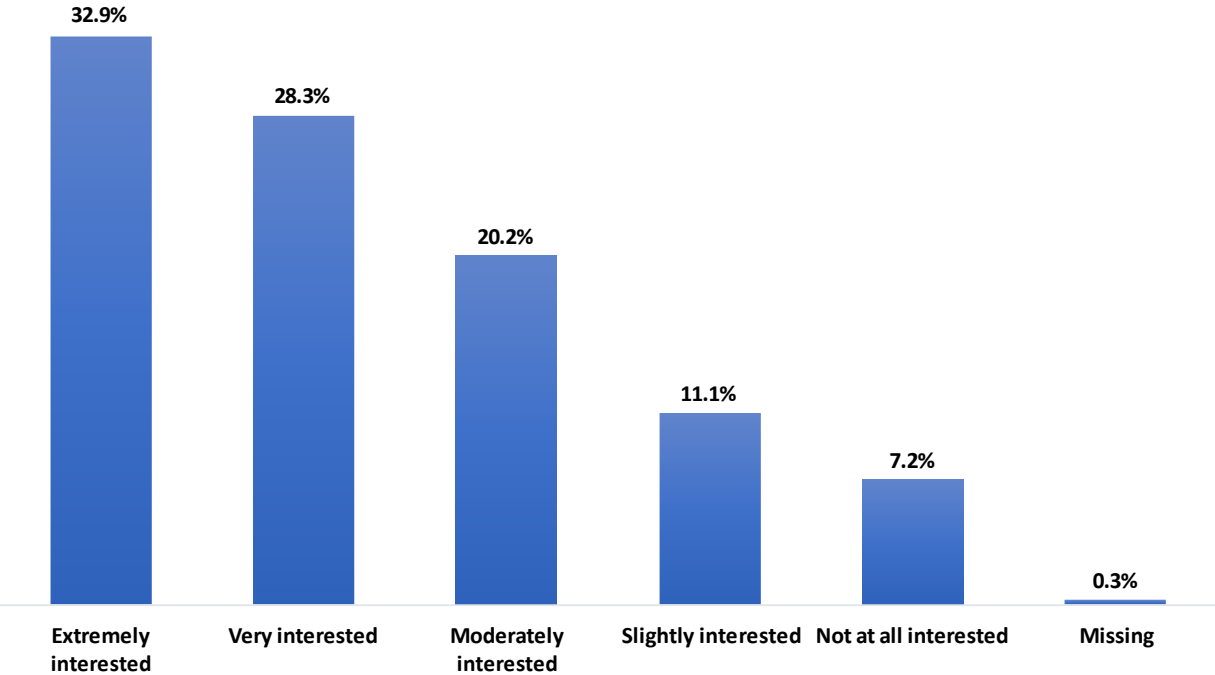


Figure 2. Anticipated time to practice ownership after graduation from residency

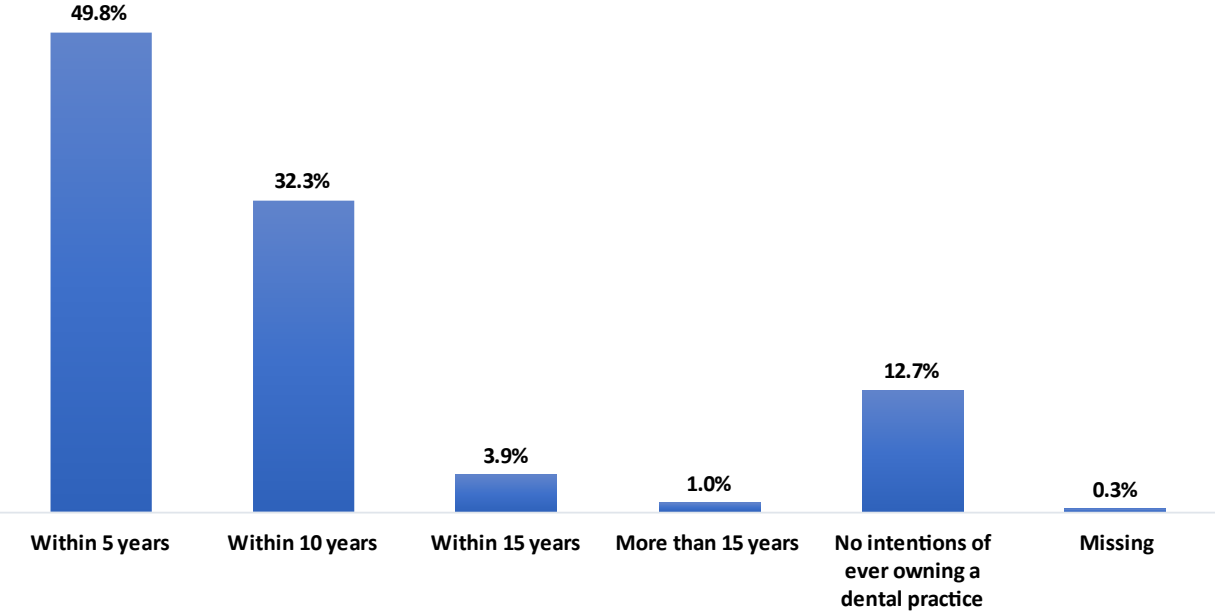


Figure 3. Anticipated educational debt upon graduation from residency

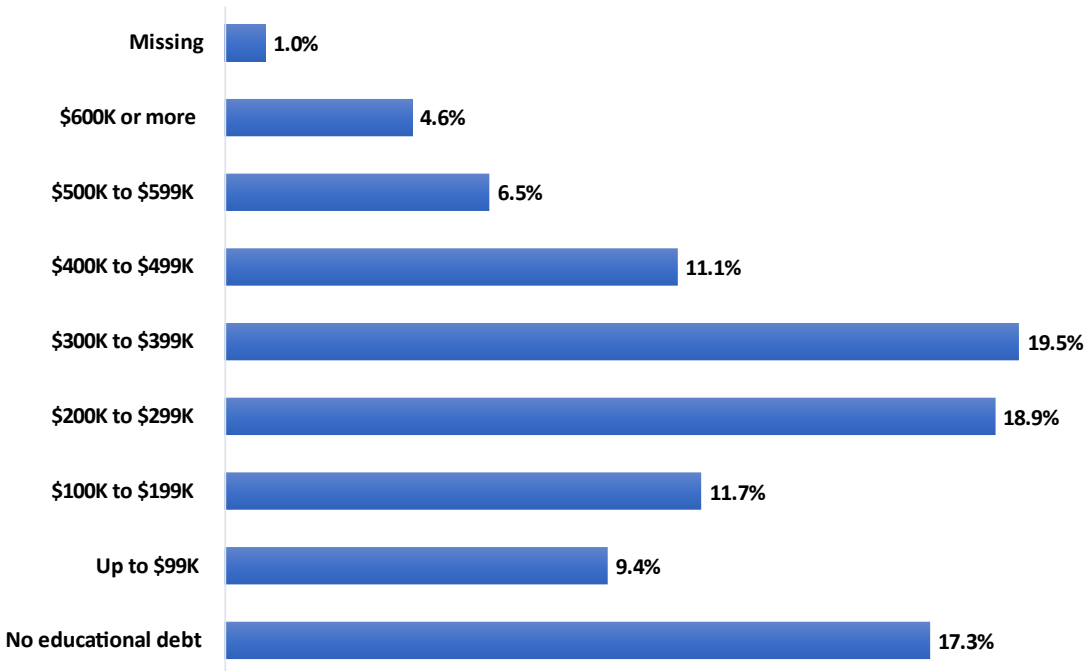


Figure 4. Primary concerns or considerations regarding practice ownership*

*Respondents could choose multiple options. Will not sum to 100%.

