

SUMMARY REPORT

ADEA Education Research Series
Issue 3, February 2022

Dentists of Tomorrow 2021:

An Analysis of the Results From the 2021 ADEA Survey of U.S. Dental School Seniors



THIS REPORT SUMMARIZES THE KEY FINDINGS OF THE ANALYSIS FROM the results of the American Dental Education Association (ADEA) Survey of Dental School Seniors, Class of 2021 (henceforth called “the ADEA 2021 survey” and the overall survey is called “the ADEA Senior Survey”). The study examines the journey of U.S. dental schools’ predoctoral senior class of 2021, from its influences and motivations to pursue careers in dentistry and the students’ perceptions of their dental school experience to their plans upon graduation and the investment in their careers. Whenever feasible, the analysis compares the answers of the 2021 survey respondents with their 2016 counterparts. Further, this research attempts to better understand the journey of predoctoral senior students of historically underrepresented race and ethnicity (HURE) groups by comparing the responses of the overall response sample with the responses of the HURE students. This research considers the following four race and ethnicity categories to be part of HURE: non-Hispanic African American, Hispanic or Latino of all races, non-Hispanic American Indian or Alaska Native and non-Hispanic Native Hawaiian or Other Pacific Islander.

The COVID-19 pandemic added a lot of uncertainty, making it even more difficult for dental schools and graduating students to find time to participate in external data collection efforts. ADEA surveyed the 66 U.S. dental schools with a graduating class in 2021. The data collection in 2021 took place between March 18 and June 18. As part of the process, ADEA sent a message with an access link to the survey to a designated school representative, who then emailed this initial message and subsequent reminders to the senior students. A total of 6,720 students received the survey and 2,975 responded. As a result, 44.3% of the senior students graduating in 2021 responded to the ADEA Senior Survey, compared with 77% for the 2016 graduating class. The response sample to the ADEA survey is representative of the overall senior student population at U.S. dental schools in 2021 (see Table A1 in the Methodological Appendix).

50% OF THE SENIOR STUDENTS RESPONDING TO THE ADEA 2021 SURVEY DECIDED TO BECOME A DENTIST BEFORE GOING TO COLLEGE

1

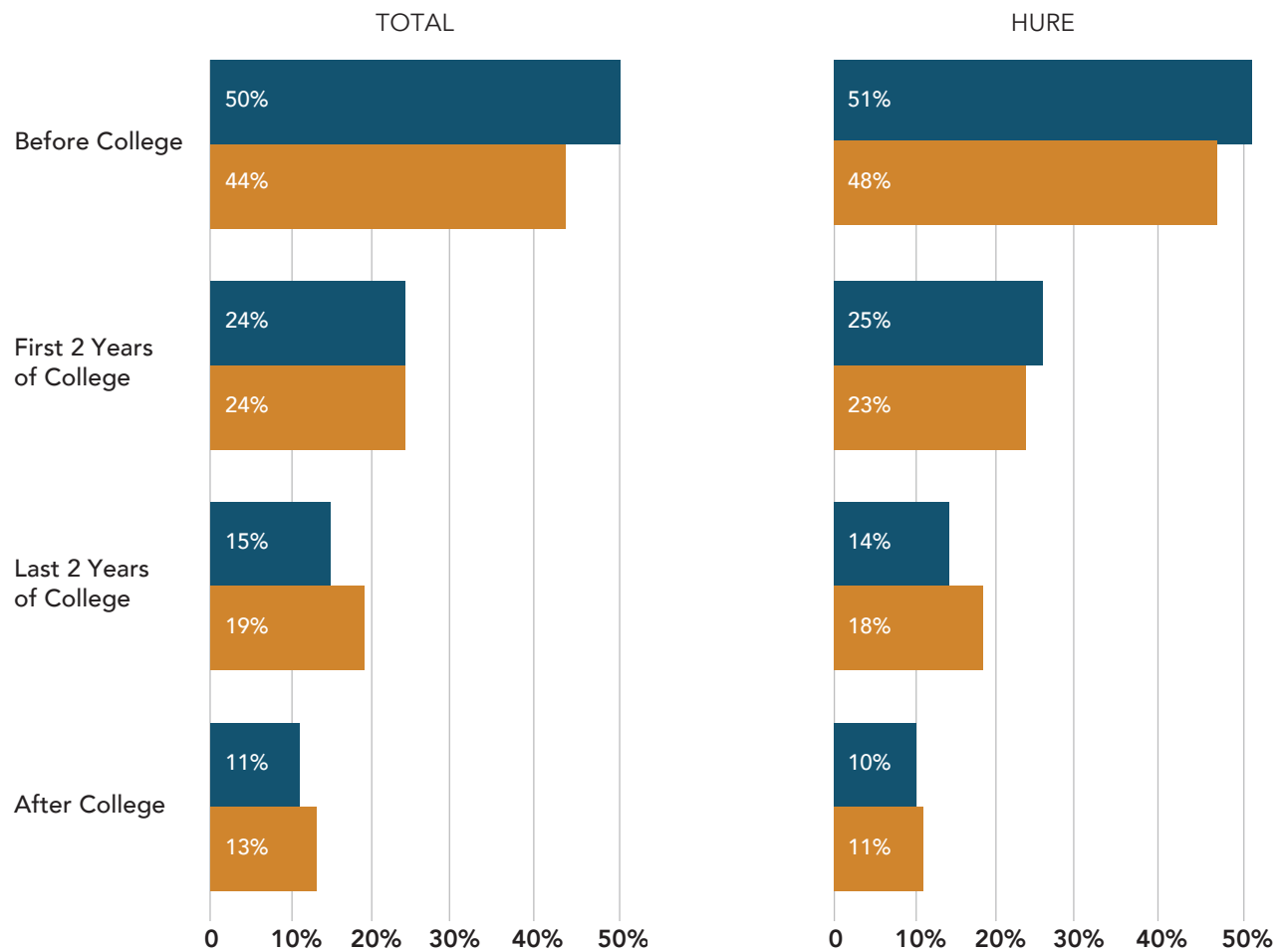
BETWEEN 2016 AND 2021, AN INCREASINGLY LARGER PROPORTION OF THE SENIOR STUDENTS RESPONDING TO THE ADEA ANNUAL SURVEY INDICATED THEY HAD DECIDED TO PURSUE A CAREER IN DENTISTRY BEFORE COLLEGE.

Half of the 2021 respondents (50%) decided to become a dentist before going to college, significantly more than the percentage (44%) in 2016 (Figure 1). The majority (51%) of HURE respondents to the ADEA 2021 survey indicated they decided to pursue a career in dentistry before college, not a statistically significant difference from five years before.

Academic reputation is the second most frequently cited selection criterion for attending the dental school from which the HURE respondents were graduating in 2021. While proximity to friends and family was featured as the most cited among the top three reasons for choosing a specific institution by the overall response group, a lower cost of attendance was the most mentioned reason for HURE respondents. Benefits of the location of the dental school, such as good weather, transit, cultural opportunities, etc., was the third most often named reason for picking a dental school by HURE respondents and academic reputation was the third most cited for the entire response group for the ADEA 2021 survey.

For access to the online storyboard, data and the ADEA Senior Student Dashboard 2021, visit:
[ADEA.org/Seniors2021](https://www.aede.org/Seniors2021)

FIGURE 1 Timing of Decision to Pursue a Career in Dentistry, Total and HURE, 2016 and 2021



Notes: The number of respondents to this question was 2,895 total and 343 for HURE students in 2021, and 4,466 total and 566 for HURE students in 2016.

Sources: American Dental Education Association (ADEA) Surveys of Dental School Seniors, Classes of 2016 and 2021.

**90% OF
RESPONDENTS
AGREED AND
STRONGLY
AGREED WITH THE
PREPAREDNESS
TO PRACTICE
STATEMENTS
IN THE ADEA
2021 SURVEY**

2 THE RESPONDENTS TO THE ADEA 2021 SURVEY INDICATED A HIGH LEVEL OF READINESS TO GO INTO THE PROFESSION.

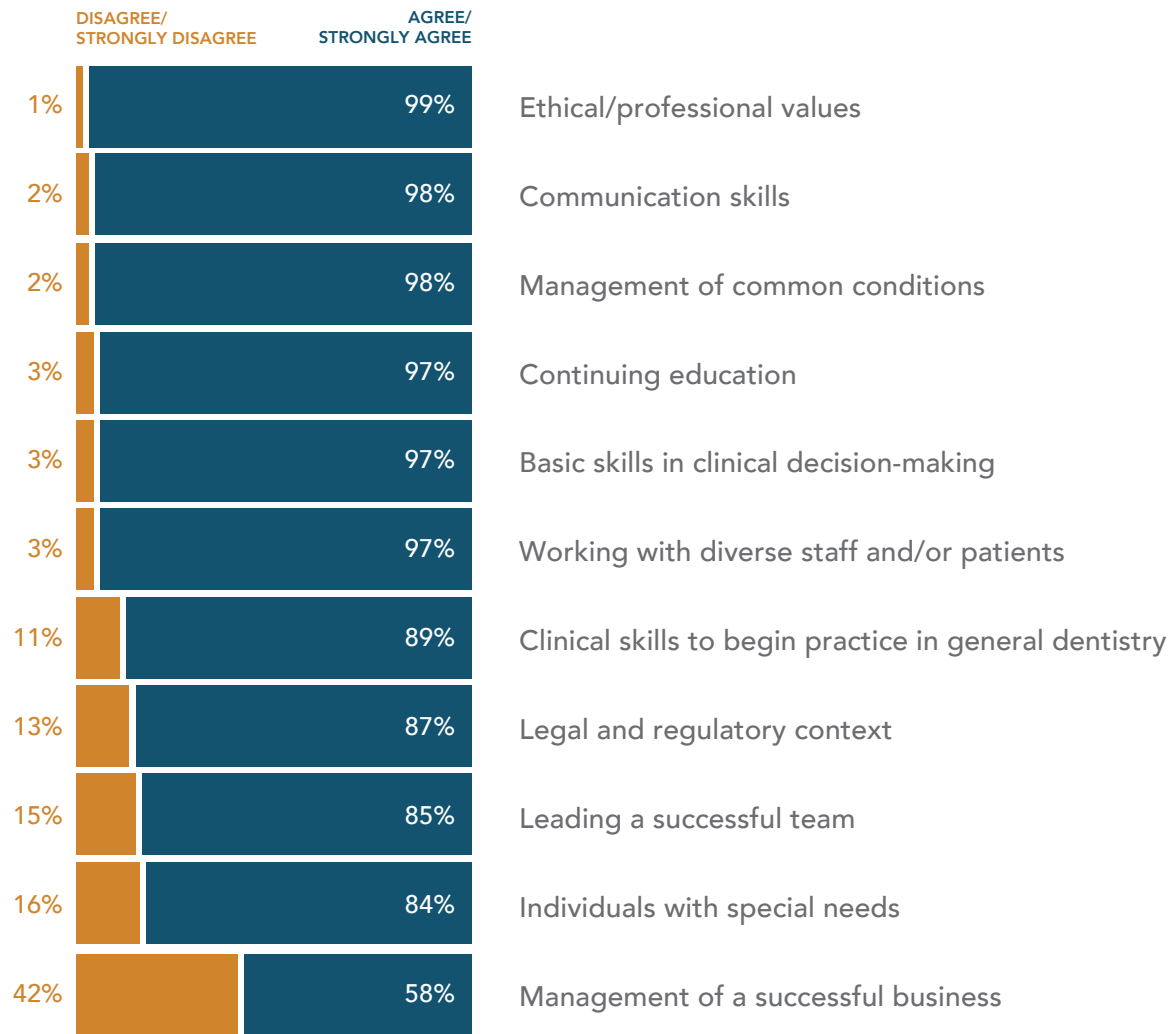
The ADEA 2021 survey asked participants to estimate the adequacy of clinical experience gained across 14 different areas of education. For 13 of the 14 categories, the majority of respondents reported receiving appropriate/excessive levels of clinical experience during dental school. Examination and diagnosis, preventive care and treatment planning were the top three clinical areas in terms of percentage of survey respondents indicating they had acquired an adequate level of clinical experience.

Most of the senior students responding to the ADEA 2021 survey stated high levels of confidence in their skills across the 15 clinical areas mentioned in the survey. On average, 77% of survey respondents were moderately or highly confident in their abilities gained across the 15 clinical areas included in the survey. In two clinical areas, confidence in skills exceeded 90%: ability to restore teeth and to conduct health promotion and disease prevention. Respondents felt the least confident in their skills to deal with hard and soft tissue surgery (52% stated being moderately or highly confident in their abilities gained in this area), as well as malocclusion and space management (51%).

Visit the ADEA Senior Student Dashboard 2021 for the full list of clinical areas and data:
[ADEA.org/Seniors2021](https://www.aede.org/Seniors2021)

FIGURE 2

Preparedness to Practice, Percent of Respondents, 2021



Notes: For the full text of the statements, please check Table A2 in the Methodological Appendix. The number of respondents to this question varied between 2,865 and 2,869, depending on the statement.

Sources: American Dental Education Association (ADEA) Survey of Dental School Seniors, Class of 2021.

The ADEA 2021 survey asked respondents’ level of agreement to 11 different statements that reflected a variety of abilities needed to enter dental practice (see Table A2 in the Methodological Appendix for the full text of the statements). On average, 90% of respondents agreed and strongly agreed with the preparedness to practice statements in the survey (Figure 2). Survey respondents felt most ready about understanding the ethical and professional values that are expected of the profession. Clinical skills factored high for 2021 graduating senior students. The survey participants expressed confidence in their basic skills in clinical decision-making (97%) and clinical skills needed to practice (89%). Only one area received less than 80% agreement: 58% felt prepared to manage a successful business.

**48% OF HURE
RESPONDENTS
INDICATED PLANS
TO ENROLL
IN ADVANCED
EDUCATION IN
2021, UP FROM
38% FIVE YEARS
EARLIER**

3 ALMOST TWO OUT OF FIVE SENIOR PREDOCTORAL STUDENTS RESPONDING TO THE ADEA 2021 SURVEY PLANNED TO ATTEND ADVANCED DENTAL EDUCATION PROGRAMS UPON GRADUATION.

Between 2016 and 2021, the share of survey respondents who expressed plans to enter advanced education immediately after graduation increased from 34% to 39% (see Figure 3). In 2021, almost half (48%) of HURE respondents indicated plans to enroll in advanced education, up from 38% five years earlier. The ADEA 2021 survey allowed respondents to select any or all the delineated types of advanced education they were interested in pursuing, such as general dentistry programs, approved specialties and specialties not approved by the National Commission on Recognition of Dental Specialties and Certifying Boards (NCRDSB). More than half (58%) of the students planning to pursue graduate dental programs were interested in general dentistry programs, both general practice residency (GPR) and advanced education in general dentistry (AEGD). Approved specialties were the second most cited advanced education by students planning to further their education.

Entering private practice remained the favorite professional choice for senior predoctoral students responding to the ADEA 2021 survey. The majority of 2021 respondents (51%) planned to work in a private practice upon graduation. Only 39% of 2021 HURE survey participants stated they planned to join a private practice upon graduation. Almost a third of the 2021 overall respondents (28%) and HURE survey participants (30%) who planned to go into private practice immediately upon graduation intended to join a DSO.

HURE students planning to join a private practice upon graduation differed in some of their choices to the overall response group. They were more likely to be unsure if they would join a DSO-affiliated or non-DSO-affiliated practice (43% of the HURE respondents who were planning to enter private practice vs. 27% for overall response group who were planning to join a private practice), unsure if the practice would have single or multiple locations (24% of HURE respondents vs. 17% overall response group) and they were less likely to have a solo practice upon graduation (17% of HURE respondents vs. 24% overall response group).

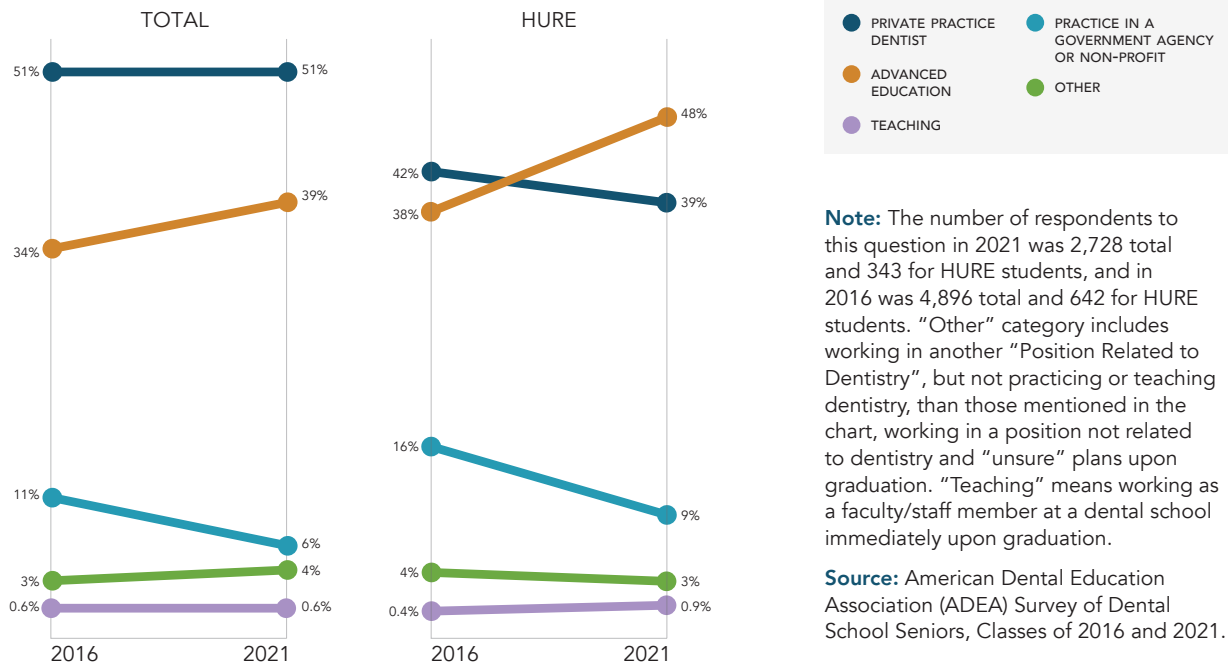
**30% OF THE
2021 HURE
RESPONDENTS
WHO PLANNED
TO GO INTO
PRIVATE PRACTICE
IMMEDIATELY UPON
GRADUATION
INTENDED TO JOIN
A DENTAL SERVICE
ORGANIZATION
(DSO)-AFFILIATED
PRACTICE**

Practicing dentistry for a government agency or a nonprofit was selected less by the 2021 students than their 2016 counterparts. Overall, HURE students were more likely to select it as a career path upon graduation—a trend maintained over the past five years. The percentage of survey respondents intending to practice dentistry in government service or nonprofit almost halved from 11% of the 2016 respondents to 6% in 2021. For HURE students, the percentage declined from 16% to 9% over the same period. Interest in practicing dentistry in the federal government service dropped by half for overall respondents, largely due to a decline in plans to join the U.S. Public Health Service Commissioned Corps and the military. The proportion of HURE students planning to work for the federal government upon graduation also dropped over the past five years, mainly due to a loss of interest in serving as a uniformed services dentist.

A small percentage of respondents (0.6%) planned to teach in a dental program immediately upon graduation in 2021, the same proportion as in the 2016 graduating class.

FIGURE 3

Immediate Professional Plans Upon Graduation, Percent of Respondents Total and HURE, 2016 and 2021

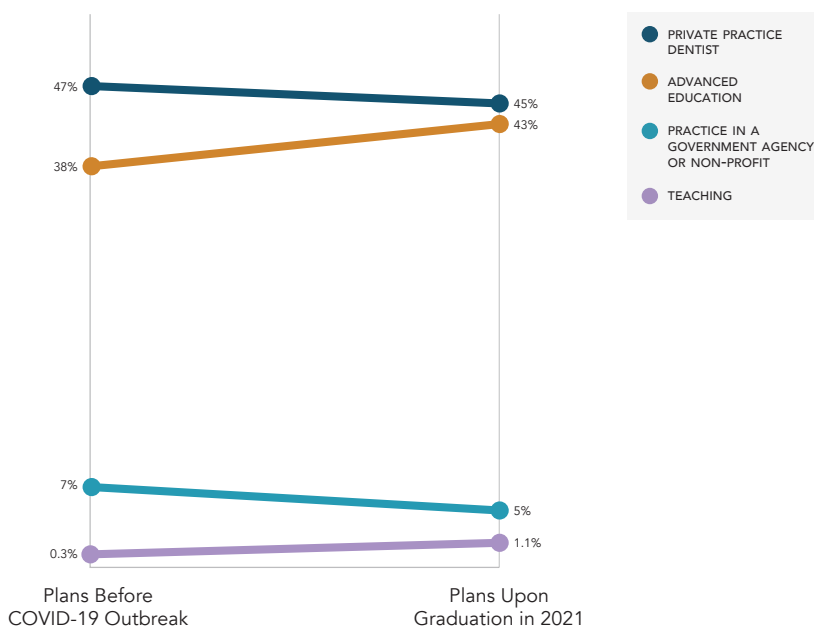


Note: The number of respondents to this question in 2021 was 2,728 total and 343 for HURE students, and in 2016 was 4,896 total and 642 for HURE students. "Other" category includes working in another "Position Related to Dentistry", but not practicing or teaching dentistry, than those mentioned in the chart, working in a position not related to dentistry and "unsure" plans upon graduation. "Teaching" means working as a faculty/staff member at a dental school immediately upon graduation.

Source: American Dental Education Association (ADEA) Survey of Dental School Seniors, Classes of 2016 and 2021.

FIGURE 4

Changes of Immediate Professional Plans Upon Graduation Because of the COVID-19 Pandemic, Percent Responses of the Survey Participants Who Reported Changes Because of the COVID-19 Outbreak



Notes: The total number of respondents who reported changes to their professional plans immediately upon graduation and mentioned their plans before and after is 619. Besides the categories presented in the chart, there is an "Other" category selected by 6% of respondents in 2016 and 2021. This category includes working in another position related to dentistry (but not practicing or teaching dentistry) than those mentioned in the chart, working in a position not related to dentistry and "unsure" plans upon graduation. "Teaching" means working as a faculty/staff member at a dental school immediately upon graduation. The changes are not statistically significant at 90% confidence interval, except for "teaching."

Source: American Dental Education Association (ADEA) Survey of Dental School Seniors, Class of 2021.

**23% OF THE
2021 SURVEY
PARTICIPANTS
REPORTED THAT
THE COVID-
19 PANDEMIC
AFFECTED THEIR
IMMEDIATE
PROFESSIONAL
PLANS AFTER
GRADUATION**

4 THE COVID-19 PANDEMIC CHANGED THE PROFESSIONAL PLANS OF CLOSE TO A QUARTER OF THE ADEA 2021 SURVEY RESPONDENTS AND TILTED THEM TOWARDS ADVANCED EDUCATION.

Twenty-three percent (23%) of the 2021 survey participants reported they changed their immediate professional plans upon graduation because of the COVID-19 pandemic. Sixty percent (60%) of the respondents who reported changes planned to practice dentistry before the COVID-19 outbreak and 39% were thinking of attending advanced education program (Figure 4). The pandemic skewed their preferences towards going into advanced education. Upon graduation in 2021, 43% of this group of respondents who changed their plans because of the pandemic chose to do an advanced education program and 56% selected to practice dentistry. While the changes are not statistically significant at 90% confidence interval, they do show a potential impact of COVID-19 pandemic on the plans of graduating predoctoral students in 2021.

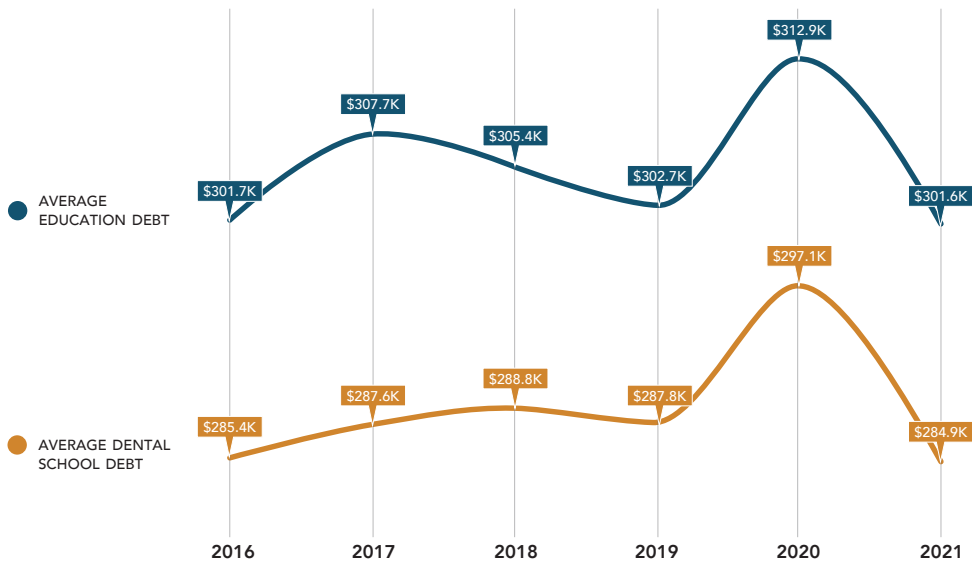
A fifth of respondents planning to join a private practice upon graduation in 2021 mentioned that their plans changed because of the COVID-19 pandemic. Out of this group, 17% were thinking before the COVID outbreak they would join a dental service organization (DSO)-affiliated practice. Upon graduation in 2021, 32% mentioned planning to work in a DSO-affiliated practice.

94% OF AVERAGE
OUTSTANDING
EDUCATION DEBT
FOR GRADUATING
STUDENTS IN 2021
WAS COMPRISED
OF DENTAL
SCHOOL LOANS,
ON AVERAGE

5 AVERAGE EDUCATION DEBT REACHED \$301,583 FOR STUDENTS GRADUATING WITH DEBT AND RESPONDING TO ADEA THE 2021 SURVEY.

When counting for inflation, this amount was practically unchanged from what the 2016 respondents reported. Annual average education debt amounts varied between 2016 and 2021 given different cohorts and various response rates to the debt question to the ADEA survey over the years (see Figure 5). Most of the average education debt that predoctoral students reported in the ADEA 2021 survey was from dental school loans (94%). Only 6% of the 2021 average education debt was debt for previous education that the predoctoral graduating students reported still outstanding upon entering dental school.

FIGURE 5 Average Education and Dental School Debt, as Stated by Respondents Graduating With Debt, 2016–2021, in 2021 dollars



Notes: The response rates for this survey question vary between 35% in 2020 and 75% in 2017. A response rate reflects the number of respondents for the debt question relative to the senior student population in that academic year. Education debt is an aggregate of the dental education debt and the debt for previous education that the predoctoral graduating students reported still outstanding upon entering dental school.

Source: American Dental Education Association (ADEA) Survey of Dental School Seniors, Classes of 2016 to 2021.

U.S. DENTAL
SCHOOLS
CONTINUED
THEIR MISSION
TO TRAIN
AND EDUCATE
ORAL HEALTH
PROFESSIONALS
AND PROVIDE
ORAL HEALTH
CARE THROUGH
THEIR CLINICS
TO LOCAL
COMMUNITIES

The percentage of respondents graduating with debt declined slightly between 2016 and 2021, but not statistically significant. While in 2016 85% of respondents reported graduating with education debt, by 2021 the proportion dropped by 2 percentage points. Dental school debt recorded a similar drop, between 83% in 2016 and 81% in 2021.

Federal loans persisted as the top source of funding for doctoral education degree between 2016 and 2021. On average, ADEA 2021 survey respondents financed almost two-thirds of their dental education through loans (65%), the rest covered to a large degree by a combination of financial support from close ones (19%) and scholarships (10%). Respondents to the 2016 ADEA survey reported a proportion of loans close to 2021 (66%) and less grants and scholarships (9%) than their 2021 counterparts. While 2016 respondents used in a higher percentage their savings, the 2021 respondents reported a larger percentage of gifts and/or financial support from close ones.

2021 was a year full of uncertainty but also hope as dental schools adapted to the COVID-19 pandemic on campus, in clinics and in communities. In these uncertain times, a new generation of dentists graduated from 66 accredited U.S. dental schools in the 2020–21 academic year. U.S. dental schools stood steady in their mission to train and educate oral health professionals and provide oral health care through their clinics to local communities.

METHODOLOGICAL APPENDIX

TABLE A1 Senior Class Population at U.S. Dental Schools and 2021 ADEA Senior Survey Response Sample by Type of School, Census Region Where the School Is Located and Gender of the Students, 2020–21 Academic Year

	2020–21 SENIOR STUDENT POPULATION		2021 ADEA SENIOR STUDENT SURVEY RESPONSE SAMPLE	
BY TYPE OF SCHOOL	COUNT	%	COUNT	%
PRIVATE	2,980	44%	1,012	34%
PRIVATE/ STATE-RELATED	334	5%	308	10%
PUBLIC	3,404	51%	1,655	56%
BY CENSUS REGION OF THE DENTAL SCHOOL	COUNT	%	COUNT	%
MIDWEST	1,458	22%	772	26%
NORTHEAST	1,869	28%	711	24%
SOUTH	1,915	29%	797	27%
WEST	1,476	22%	695	23%
BY GENDER OF SENIOR STUDENT	COUNT	%	COUNT	%
MEN	3,244	48.3%	1,119	38%
WOMEN	3,466	51.6%	1,478	50%
OTHER	8	0.1%	378	13%
TOTAL NUMBER OF U.S. DENTAL SCHOOLS WITH A PREDOCTORAL SENIOR CLASS	66	–	66	–
TOTAL SIZE OF SENIOR CLASS	6,718	100%	2,975	100%

Notes: Percentages may not total 100% because of rounding. Senior students in dental doctoral degrees at U.S. dental schools include the third-year students at the University of Pacific, Arthur A. Dugoni School of Dentistry (Dugoni School) and the fourth-year students at the remainder of U.S. dental schools. Dugoni School has a three-year dental doctoral degree program. The senior student population figures reflect senior student enrollment at the beginning of the academic year. The ADEA Survey of Dental School Seniors is conducted at the end of the academic year. The “other” gender category for the ADEA survey response sample includes respondents who did not respond to this question, do not wish to report their gender identity, are non-binary, transgender men and other gender identities.

U.S. Census region according to the U.S. Census Bureau “Region and Division Codes and Federal Information Processing System (FIPS) Codes for States.” U.S. Census Bureau, Population Division, Internet Release Date: May 2018.

Source: Analysis of American Dental Education Association (ADEA) Survey of Dental School Seniors, Class of 2021; American Dental Association, Health Policy Institute, 2020–21 Survey of Dental Education data.

TABLE
A2

Preparedness to Practice Statement and Abbreviated Form, 2021

ABBREVIATED STATEMENT	FULL STATEMENT OF PREPAREDNESS TO PRACTICE
Ethical/professional values	I understand the ethical and professional values that are expected of the profession.
Communication skills	I have the communication skills necessary to interact with patients and health professionals.
Management of common conditions	I have a fundamental understanding of common conditions and their management.
Continuing education	I believe that continuing education requirements are necessary for practitioners.
Basic skills in clinical decision-making	I have basic skills in clinical decision-making and the application of evidence-based information to dental practice.
Working with diverse staff and/or patients	I believe I am adequately prepared to work with diverse, multicultural staff and/or patients.
Clinical skills to begin practice in general dentistry	I am confident that I have acquired the clinical skills required to begin practice in general dentistry.
Legal and regulatory context	I understand the legal and regulatory context within which dental care services may be provided.
Leading a successful team	I am prepared to lead a successful team; I can hire and retain staff, create a positive work culture, manage conflicts, etc.
Individuals with special needs	I can assess the treatment needs of individuals with special needs.
Management of a successful business	I am prepared to manage a successful business; I can manage finances, enact a business plan, ensure efficient scheduling and billing, obtain appropriate credentialing, etc.

Source: American Dental Education Association (ADEA) Survey of Dental School Seniors, Class of 2021.

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