

Research Brief

How Did the COVID-19 Pandemic Affect Dentist Earnings?

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Key Messages

- *Our analysis is the first to estimate the impact of the COVID-19 pandemic on dentist net incomes through 2020. We find that for general practitioner dentists, the pandemic led to a 17.9 percent drop in net income in 2020 compared to 2019.*
- *Specialist dentists saw smaller declines in both net income and hours worked compared to general practitioner dentists.*
- *Female dentists saw a larger decline in net income and hours worked than their male colleagues. Our research adds to the growing empirical evidence that the economic impact of COVID-19 continues to affect women differently than men.*

Introduction

The COVID-19 pandemic has had a major impact on the health care sector. Dentistry was effectively closed for two months beginning in March 2020 with health organizations recommending dentists see emergency cases only.¹ By late May 2020, most states had resumed elective care.²

Today, there are few indications in the latest data that the pandemic is still hindering the daily operations of dental practices. As of August 2021, 99 percent of private practice dentists report that they have reopened and about two-thirds indicate that they are open with business as usual.³ Patient volume has nearly bounced back to pre-pandemic levels, with the latest data indicating it is at 89 percent.³ Patient confidence is high, with 97 percent of dental patients indicating they have either already been back to the dentist since the pandemic began or have no reservations about going back.⁴

Research Brief

By all these accounts, dentistry has weathered the COVID-19 pandemic remarkably well. But what about the financial impact to dental practices? To date, there has been no “big picture” look at the financial impact to dentists. Revenues declined as patient volume declined, but how much of this decline was made up with the re-opening and recovery? Expenses likely increased due to enhanced personal protective equipment (PPE) use, but by how much? How much revenue was replaced by the various government financial relief programs? How did all of this translate into dentist earnings? In this research brief, we focus only on dentist net income and present the first nationally representative analysis of the impact of the COVID-19 pandemic. Specifically, we compare dentist net incomes for the year 2020 to the previous year.

Results

As Figure 1 illustrates, general practitioner dentists saw a decline of 17.9 percent in their average annual net income in 2020 compared to 2019. (Throughout this brief, unless stated otherwise, we only discuss results that are significant at the 5 percent confidence level.) This means that the entirety of the year 2020, including the shutdown of non-emergency procedures and subsequent re-opening, took out just over one-sixth of average dentist earnings for general practitioners. For specialists, the decline was 6.9 percent, but this was not statistically significant ($P=.20$).

We examined the impact on dentist net income separately for female and male dentists as well as by age group (Figure 2). We did this for general practitioners only due to sample size limitations among specialist dentists. The data clearly show a larger drop in net income for female dentists compared to male dentists. On average, female general practitioners saw a 26.6 percent decline in net income in 2020 compared

to 2019 while for male general practitioners the decline was 14.7 percent. Similarly, older dentists saw larger declines in net income compared to younger dentists. General practitioners age 65 and older saw a 27.5 percent reduction in average net income compared to a 10.3 percent reduction (not statistically significant, $P=.07$) among general practitioners age 40 or younger.

Trends in hours worked shed light on why there are differing effects on net income by dentist specialty, age, and gender (Figure 3). In terms of total hours worked in the year, general practitioners worked 285 fewer hours in 2020, or 16.6 percent less, compared to 2019. For specialist dentists, the decline was 11.7 percent. The magnitude of the decline in hours worked and net income are very similar, suggesting that earnings declined because dentists worked fewer hours.

Similar to net income, we analyzed patterns in hours worked by age and gender for general practitioners. For hours worked, the same patterns emerge when it comes to differences by age and gender. Female general practitioners saw a much larger decline in hours worked (22.1 percent) compared to male general practitioners (14.5 percent). Older dentists saw the largest decline in hours worked (21 percent) while younger general practitioners saw the smallest (13.2 percent) (Figure 4).

Our data allowed us to analyze hours worked during the period when dentistry was shut down except for emergency cases compared to other periods of more typical operations in the year. This sheds light on how much dentists actually worked during the shutdown period. General practitioners and specialists averaged similar hours per week both within and outside of the shutdown period. They averaged between 11 and 12 hours per week during the shutdown and between 33 and 34 hours per week during the rest of the year. Specialists were open for emergencies only for slightly

Research Brief

fewer weeks than general practitioners, 6.8 compared to 7.5. For total hours worked in 2020, specialists averaged slightly more than general practitioners, 1,498.7 compared to 1,435.2 (Table 1).

As noted, the average general practitioner worked 285 fewer hours in 2020 compared to 2019. By comparing averages from both years, we found that the shutdown period accounted for about two-thirds of this decline in hours. The remainder of the decline is attributable to slight decreases in average hours per week and average weeks worked outside of the shutdown period. Similarly for specialists, they averaged 198 fewer hours worked in 2020 compared to 2019. The shutdown period accounted for about 80 percent of their decline in 2020 hours with the remainder due to a slight decrease in average hours per week outside of the shutdown period.

Earlier research estimated that 95 percent of dentists received some form of government financial assistance during the pandemic. Among Survey of Dental Practice respondents that are the basis of this current analysis, 86.6 percent received COVID-19-related relief funds. Among those who received relief funds, general practitioners' practices received an average of \$91,000 while specialists' practices received an average of \$109,000. On average, the relief funds were equivalent to about one-seventh of billings collected for all dentists (Table 2).

Discussion

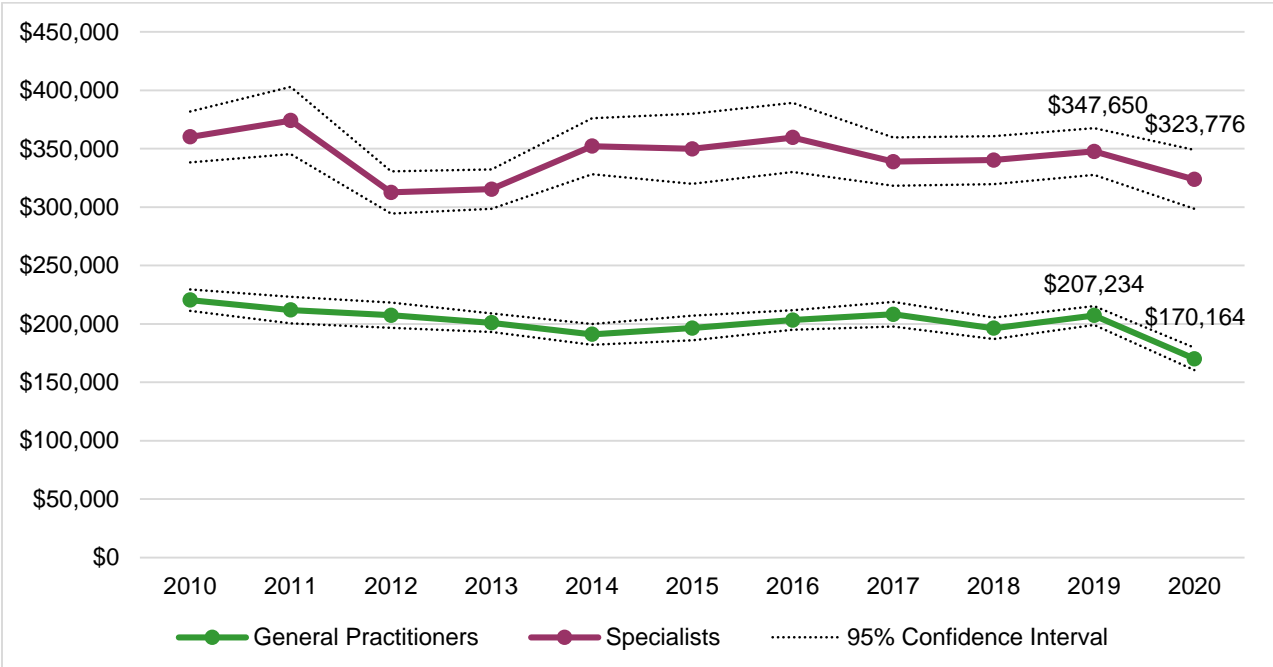
The COVID-19 pandemic brought major disruption to U.S. health care, including dentistry. Our analysis is the first to estimate the impact on dentist net incomes through 2020. For general practitioners, the pandemic led to a 17.9 percent drop in average net income in 2020 compared to 2019. Female dentists and older

dentists experienced especially large declines compared to male dentists and younger dentists. Our analysis shows that net income reduction was parallel to a drop in hours worked and here, too, the decline in hours worked was largest for female dentists and older dentists. Other HPI data indicate that through May 2021, older dentists have not retired or exited the workforce prematurely due to the pandemic.⁵ However, our analysis in this research brief confirms that they certainly curtailed their hours worked more than younger colleagues.

Our findings provide further evidence that the economic impact of COVID-19 continues to hit women harder than men. There is ample evidence of this in the general workforce as well as among professional occupations.^{6,7} Our analysis adds to this growing body of empirical research. It will be interesting to see if hours worked in 2021 rebound fully to pre-pandemic levels for both male and female dentists equally or whether there is some potential lingering impact of the pandemic. Either way, the data clearly show that female dentists bore a more significant economic impact than their male counterparts.

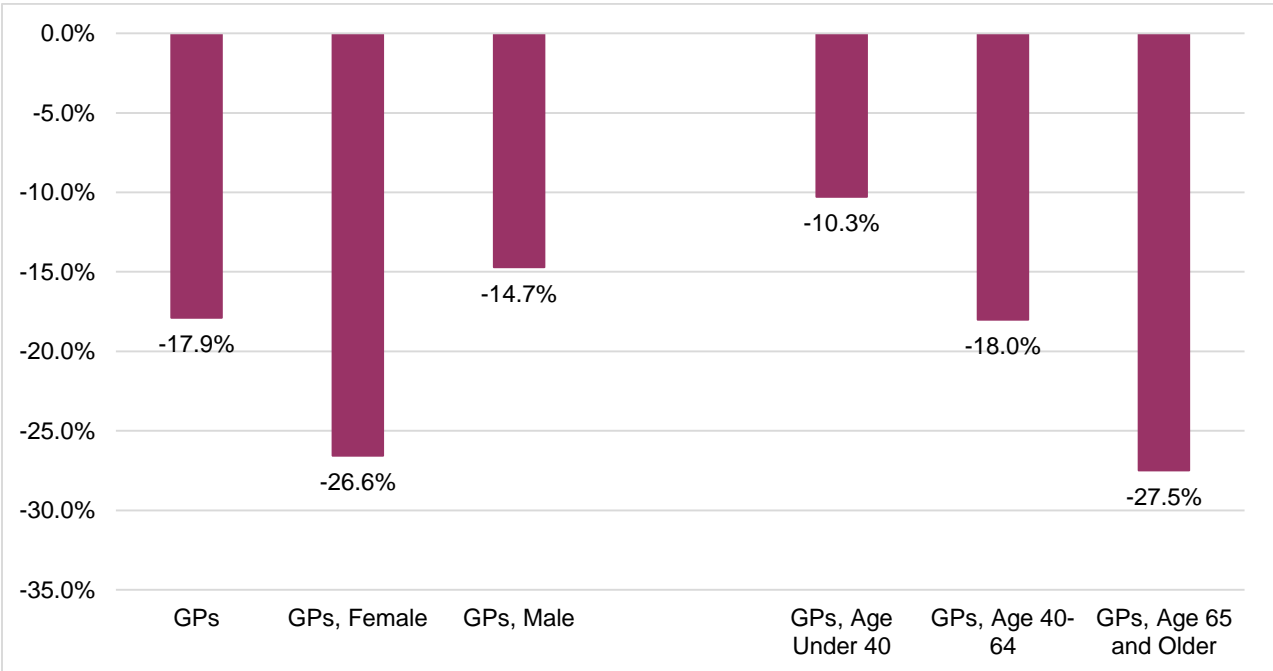
Our analysis is limited by the fact that it does not shed light on productivity changes post-COVID-19 that might result in increased billings per hour. Nor do our data allow for an in-depth analysis of expenses per patient or whether increased PPE use drove up variable costs. Our findings also need to be placed in context. By January 2021, patient volume had recovered to an estimated 80 percent of pre-pandemic levels. Thus, the data we analyze for 2020 will not capture the full financial impact of the pandemic on dental practices. The beginning of 2021 still saw patient volume lower than it is today. We will continue to track the financial impact in 2021.

Figure 1: Inflation-Adjusted Average Net Income, Dentists in Private Practice, 2010-2020



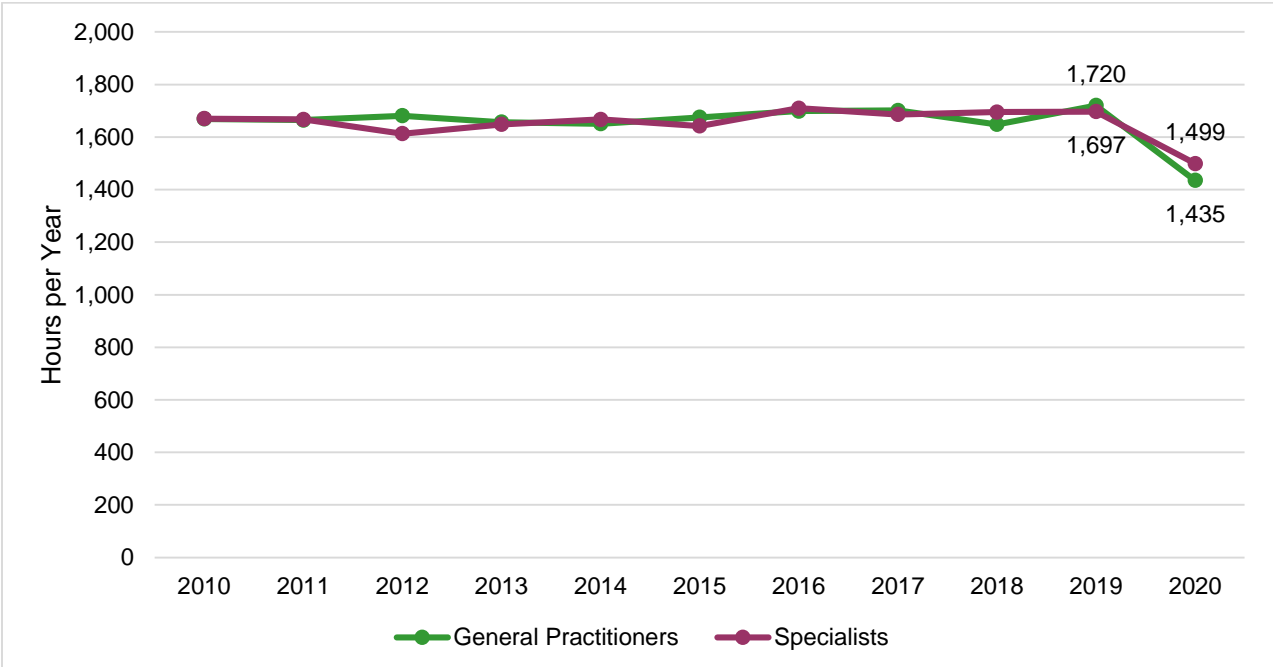
Source: ADA Health Policy Institute’s Survey of Dental Practice. **Notes:** Weighted to adjust for nonresponse bias. Dentist income is deflated using the All-Items Consumer Price Index. All values are in constant 2020 dollars. Data are for dentists in private practice.

Figure 2: Change in General Practitioner Dentist Average Net Income (Adjusted for Inflation), 2019-2020



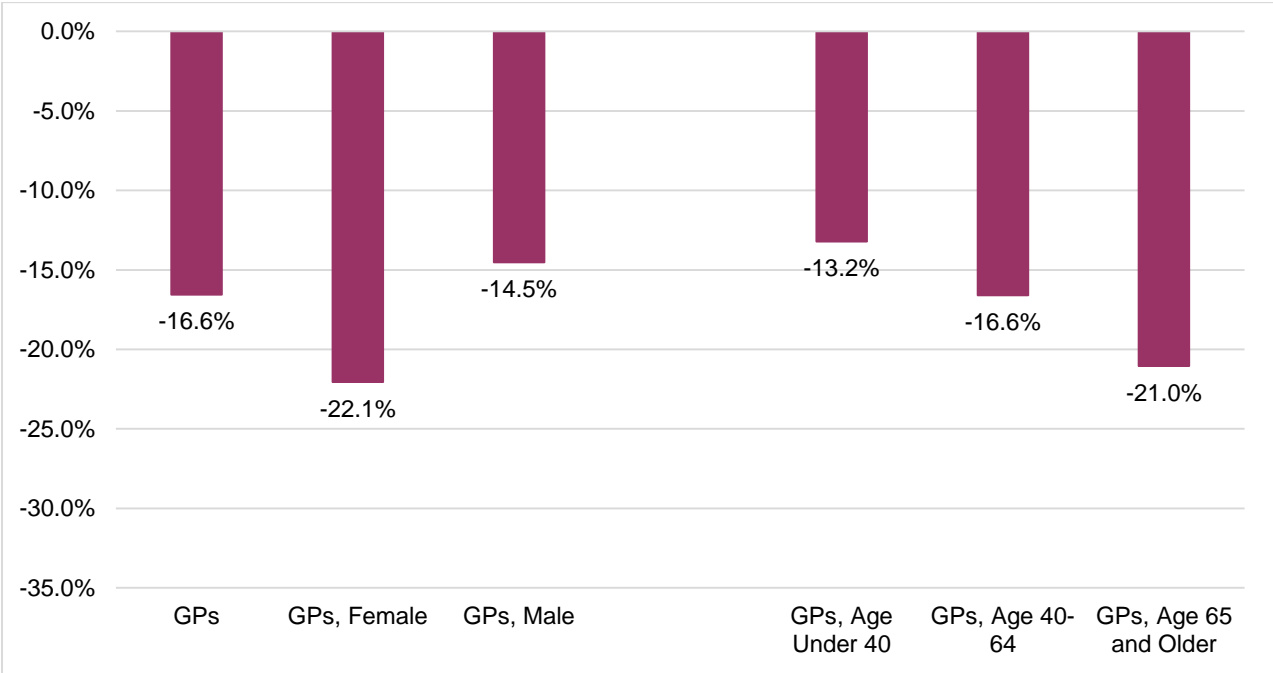
Source: ADA Health Policy Institute’s Survey of Dental Practice. **Notes:** Weighted to adjust for nonresponse bias. Data are for dentists in private practice.

Figure 3: Average Hours Worked per Year, Dentists in Private Practice, 2010-2020



Source: ADA Health Policy Institute’s Survey of Dental Practice. **Notes:** Weighted to adjust for nonresponse bias. Data are for dentists in private practice.

Figure 4: Change in General Practitioner Dentist Average Hours per Year, 2019-2020



Source: ADA Health Policy Institute’s Survey of Dental Practice. **Notes:** Weighted to adjust for nonresponse bias. Data are for dentists in private practice.

Table 1: Dentists’ Time Spent in Private Practice, 2020

	Weeks When Practice Was Open for Emergencies Only		Weeks When Practice Was Open for All or Most Procedures		Average Total Hours Worked
	Average Number of Weeks in 2020	Average Hours Per Week	Average Number of Weeks in 2020	Average Hours Per Week	
General Practitioners	7.5	11.2	39.4	33.2	1,435.2
Specialists	6.8	12.0	40.6	33.7	1,498.7

Source: ADA Health Policy Institute’s Survey of Dental Practice. **Notes:** Weighted to adjust for nonresponse bias. Data are for dentists in private practice.

Table 2: COVID-19 Related Relief Funds Received by Dentists’ Private Practices, 2020

	Percent Receiving COVID-Related Relief Funds	Among Those Receiving Relief Funds	
		Average Amount Received per Practice	Average Amount as a Percentage of Billings Collected
General Practitioners	86.6%	\$91,009	15.4%
Specialists	86.4%	\$109,386	13.0%
All Dentists	86.6%	\$95,333	14.9%

Source: ADA Health Policy Institute annual Survey of Dental Practice. **Notes:** Weighted to adjust for nonresponse bias. Relief funds are not counted as part of billings collected in our analysis. Average billings collected cannot be calculated from this table due to differing numbers of responses for the “COVID-related relief funds” and the “billings collected” questions. Data are for dentists in private practice.

Data & Methods

We relied on data from the ADA Health Policy Institute's Survey of Dental Practice. For the period represented in this analysis (2010-2020), this annual survey was sent to a nationally representative sample of 7,800 to 36,500 dentists in private practice.

According to the most recent data available, 92.8 percent of active dentists in the United States are in private practice.⁸ Response rates to the Survey of Dental Practice during the analysis period varied from 5.5 to 33.3 percent (5.5 percent in the most recent year). We used a stratified sampling technique to increase the number of responses from subgroups for analysis. During data cleaning, we screened and dropped outliers from the analysis where appropriate.

The survey asked dentists a variety of questions related to their practice, including their net income. Net

income is defined as for "you only" and is income left over after practice expenses and business taxes and includes salary, commission, bonus, practice distributions, dividends, and any payments made to a retirement plan on the dentist's behalf. We adjusted dentist earnings for inflation using the Consumer Price Index for All Items.

We weighted estimates to compensate for the stratified sampling design and to compensate for survey nonresponse bias with respect to dentist age, gender, specialty, ADA membership status, and county population corresponding to the dentist's location. We tested for statistically significant differences in averages using SAS Version 9.4, PROC SURVEYREG.

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References

¹ ADA News. COVID-19 and dentistry timeline. March 2021. Available from: <https://pages.ada.org/covid-19-and-dentistry-timeline>. Accessed August 9, 2021.

² American Dental Association. Economic impact of COVID-19 on the dental care sector: a look at week 3 of “reopening.” Health Policy Institute webinar. May 18, 2020. Available from: https://www.ada.org/-/media/project/ada-organization/ada/ada-org/files/resources/research/hpi/hpi_covid_webinar_may_2020_2.pdf. Accessed August 9, 2021.

³ American Dental Association. Economic impact of COVID-19 on dental practices: week of August 16, 2021. Results from private practice. Health Policy Institute. Available from: <https://www.ada.org/resources/research/health-policy-institute/impact-of-covid-19/private-practice-results>. Accessed August 9, 2021.

⁴ American Dental Association. What lies ahead for the dental industry. Health Policy Institute Webinar. July 13, 2021. Consumer data from Engagious, Sports & Leisure Research Group, and Rokk Solution’s Back-to-Normal Barometer 2021. More information available from: <https://sportsandleisureresearch.com/b-t-n-barometer/back-to-normal-barometer/>. Accessed August 26, 2021.

⁵ Munson B, Vujicic M. Projected supply of dentists in the United States, 2020-2040. Health Policy Institute Research Brief. American Dental Association. May 2021. Available from: https://www.ada.org/-/media/project/ada-organization/ada/ada-org/files/resources/research/hpi/hpibrief_0521_1.pdf. Accessed August 12, 2021.

⁶ Albansei S, Kim J. The gendered impact of the COVID-19 recession on the US labor market. National Bureau of Economic Research. Working paper. 28505. February 2021. Available from: https://www.nber.org/system/files/working_papers/w28505/w28505.pdf. Accessed August 12, 2021.

⁷ McKinsey & Company and Lean In. Women in the workplace: 2020. Available from: https://wiw-report.s3.amazonaws.com/Women_in_the_Workplace_2020.pdf. Accessed August 12, 2021.

⁸ Health Policy Institute analysis of ADA masterfile.

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