

## ABSTRACT

**OBJECTIVE:** To evaluate the impact of dentists' gender, age, and other demographic and household characteristics on personal annual income from wages and/or self-employment.

**METHODS:** The analytic dataset (n=148,878 active dentists who worked ≥40 weeks/year, ≥350 hours/year) was drawn from the US Census Bureau's 2014-2018 American Community Survey. Data were weighted to be representative of the US population. Descriptive statistics and multilevel Poisson regressions (Prevalence Ratios [PR], 95% Confidence Intervals [95% CI]) were conducted to estimate associations between dentists' annual income (≤\$100,000 vs >\$100,000) and their sociodemographic and family factors, adjusting for employment characteristics.

**RESULTS:** Female dentists (31.1%) had a significantly lower average annual income than male dentists (\$157,509 vs \$210,097) and were proportionally more likely to earn ≤\$100,000 yearly (33.7% vs 22.4%). Female dentists aged 35+ were more likely to earn lower incomes than their male counterparts (PR=1.70, 95% CI=1.38-2.10). Black African American dentists (PR=1.39, 95% CI=1.11-1.73) were more likely to earn lower incomes than White non-Hispanic dentists. Dentists having ≥3 children and/or a non-dentist spouse/partner were less likely to have lower incomes than those without children and/or spouse/partner. Presence of older dependent(s) in the household was predictive of lower incomes (PR=1.25, 95% CI=1.10-1.42).

**CONCLUSIONS:** Dentists' gender, age, and racial disparities contribute to the likelihood of earning a lower income. These findings are similar to results from studies on dentistry and other professions. As dentistry continues to diversify and practice patterns undergo change, it is important to monitor these disparities and potentially identify strategies to reduce them.

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## INTRODUCTION

- The gender mix within dentistry is changing, with more women entering the profession
- As the dental workforce diversifies, disparities in dentists' personal annual income are revealed, making it imperative to identify strategies to address them
- This study examined the association between various personal, employment, and family factors and dentists' personal annual income, using data from the American Community Survey (ACS)

## METHODS

**Data Source:** The study used individual data on dentists and their household members from the 2014-2018 American Community Survey. The data was weighted using sample weights to ensure representativeness. We extracted data for 148,878 dentists who met the criteria for being active in dentistry.

**Variables:** Dentists' sociodemographic characteristics:

- Personal:** Gender, age, race/ethnicity, nativity, disability, and bilingualism
- Employment:** Work setting, weeks worked per year, hours worked per week, practice location, and commuting time to workplace
- Family:** Number of children, presence of older dependents, and spouse/partner's occupation-education level

**Study Outcomes:** Dentists' personal annual income

**Statistical Analyses:**

- Descriptive statistics (n, %, t-test, chi-square test) were used to compare dentists' personal annual income by gender
- Multilevel Poisson regression (Prevalence Ratios [PR], 95% Confidence Intervals [95%CI]) estimated the effect of gender by age cohorts on dentists' personal annual income, adjusting for the personal, employment, and family characteristics listed above (Level 2), and household indicator (Level 1)
  - Fixed effects for the state where the practice was located and the year of data collection were also included in the regression

## RESULTS

- Female dentists (31.1%) earned a significantly lower personal annual income on average than male dentists (\$157,509 vs \$210,097)
- Female dentists were proportionally more likely to earn ≤\$100,000 annually than male dentists (33.7% vs 22.4%)

## RESULTS (cont.)

**Table 1. Unadjusted Personal Annual Income of Dentists by Gender, 2014-2018**

Personal annual income	Female dentists		Male dentists		All dentists	
	n	%	n	%	n	%
Mean (range)	\$157,509 (\$1-\$902,215)		\$210,097 (\$1-\$1,093,079)		\$193,722 (\$1-\$1,093,079)	
≤\$100,000	17,296	37.3	26,092	25.4	43,388	29.1
\$100,001-\$150,000	11,815	25.5	19,973	19.5	31,788	21.4
\$150,001-\$200,000	7,112	15.3	14,302	14.0	21,414	14.4
\$200,001-\$250,000	3,040	6.6	9,289	9.1	12,329	8.3
>\$250,000	7,096	15.3	32,863	32.0	39,959	26.8
Total	46,359	100.0	102,519	100.0	148,878	100.0

- Dentists with 3 or more children were less likely (PR=0.76, 95%CI=0.62-0.93) to earn lower incomes than dentists without any children
- Dentists with older dependents in their household were more likely (PR=1.25, 95%CI=1.10-1.42) to earn lower incomes than dentists without any older dependents
- Dentists with a non-dentist spouse/partner were less likely to earn a lower income than dentists without a spouse/partner

**Table 2. Adjusted Associations for Dentists' Annual Income (Lower Income vs Higher Income) With Family Characteristics, 2014-2018**

Family Characteristics of Dentists	Prevalence ratio	95% Confidence interval		P-value
		Lower limit	Upper limit	
Children (reference: no children)				.04
1 child	0.91	0.79	1.06	.20
2 children	0.85	0.73	1.00	.05
3 or more children	0.76	0.62	0.93	.008
Older dependents (reference: no older dependents)				
1 or more	1.25	1.10	1.42	.001
Spouse/partner (reference: no spouse/partner)				.001
Spouse/partner is a dentist	0.95	0.78	1.15	.70
Spouse/partner with graduate education (other than dentist)	0.80	0.70	0.91	.001
Spouse/partner without graduate education	0.81	0.72	0.92	.001
Annual household income (reference: ≤\$100,000)				.10
\$100,001-\$150,000	0.92	0.80	1.05	.20
\$150,001-\$200,000	0.83	0.69	1.01	.06
\$200,001-\$250,000	0.94	0.75	1.18	.60
>\$250,000	0.85	0.71	1.01	.06

Results from a Multilevel Poisson Regression estimating the effect of gender by age cohorts, as described in the Methods section.

- Female dentists aged 35-44 were more likely (PR=1.70, 95% CI=1.38-2.10) to earn lower incomes than their male counterparts

## RESULTS (cont.)

- Black African American dentists were more likely (PR=1.39, 95% CI=1.11-1.73) to earn lower incomes than White non-Hispanic dentists

**Table 3. Adjusted Associations for Dentists' Annual Income (Lower Income vs Higher Income) With Personal Characteristics, 2014-2018**

Personal Characteristics of Dentists	Prevalence ratio	95% Confidence interval		P-value
		Lower limit	Upper limit	
Female age, y (reference: male age)				<.001
<35	1.21	0.99	1.48	.06
35-44	1.70	1.38	2.10	<.001
45-54	1.50	1.21	1.86	<.001
55-64	1.38	1.15	1.66	.001
≥65	1.43	1.04	1.98	.03
Race/ethnicity (reference: White, non-Hispanic)				.01
Black or African American, non-Hispanic	1.39	1.11	1.73	.004
Asian, non-Hispanic	1.07	0.92	1.25	.40
All other non-Hispanic	1.37	1.02	1.84	.04

Results from a Multilevel Poisson Regression estimating the effect of gender by age cohorts, as described in the Methods section.

## CONCLUSIONS

- On average, female dentists had lower personal annual incomes than male dentists, indicating the presence of a gender income gap
- Adjusting for dentists' characteristics, female dentists under 35 were more likely to earn lower personal annual incomes than male dentists
- Racial income disparities were uncovered, with Black African-American dentists more likely to earn lower personal annual incomes than their White counterparts
- Dentists with 3 or more children or a non-dentist spouse/partner were less likely to earn lower personal annual incomes than dentists without children or a spouse/partner, respectively
- Dentists' gender, age, and racial disparities contribute to the likelihood of earning a lower income

## REFERENCE & ACKNOWLEDGMENT

Langelier M, Surdu S, Gundavarapu SS, Sabounchi SS. *Evaluating the Impact of Dentists' Personal Characteristics on Workforce Participation*. Rensselaer, NY: Oral Health Workforce Research Center, Center for Health Workforce Studies, School of Public Health, SUNY Albany; December 2021.

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