

A National Study of Characteristics of Women in Dentistry and Potential Impacts on Access to Care for Underserved Communities

Simona Surdu, MD, PhD, Margaret Langelier, MSHSA, Yuhao Liu, MPA, Nubia Goodwin, MPH

Introduction/Background

Prior research has confirmed increasing gender diversity in dental education programs and dental workforce. While there is discussion that the increasing gender diversity in dentistry will affect practice models, work hours, and the availability of specialty dentists or dentists in less populated areas, there is limited research that describes variation in characteristics of dental practice by gender. The objective of this research was to describe trends in practice patterns by gender that might result in alterations in the dental services delivery system, the availability of dental services, or the distribution of dental professionals, especially in rural areas or for underserved communities. This study, completed by the Oral Health Workforce Research Center in cooperation with the American Dental Association (ADA), represents a unique opportunity to use the ADA Masterfile and Survey of Dental Practice (SDP) to describe gender diversity and to consider the overall impact for the future of the oral health workforce.

Methods

This research consisted of 3 major parts:

- (1) An extensive literature review of peer-reviewed journal articles and other published documents was conducted to better understand the impact of gender diversification in dentistry on dental services delivery.
- (2) A secondary data analysis of the ADA Masterfile data from 2010, 2012, 2014, and 2016 to describe trends in the demographics and practice characteristics of the US dental workforce across years. The ADA Masterfile compiles demographic, dental specialty, year of graduation, dental school of graduation, and practice type and location. The ADA updates the Masterfile annually.
- (3) A secondary data analysis of the ADA Survey of Dental Practice (SDP) conducted in 2017 to evaluate differences in the practice patterns of female and male dentists. The SDP surveys a nationally representative sample of professionally active licensed dentists in private practice, including general practitioners and specialists throughout the US. The SDP provides information about the characteristics of private dental practices, dentists and their patients in the year preceding survey completion.

The data analyses for this project used descriptive and multivariable statistical methods (eg, percentage change, chi-square test, t test, Mann-Whitney U test, multilevel logistic and Poisson regressions) to estimate differences in practice patterns between male and female dentists by age cohort. In addition, data analysis of the SDP was conducted using data from a subgroup of solo practitioners who were sole proprietors (ie, the only owners of their practice) and the only dentists in the practice treating patients. The estimates generated from the analysis of the SDP data were weighted to account for oversampling of specialists and potential nonresponse bias. All analyses were conducted in SAS v9.4 (SAS Institute Inc., Cary, North Carolina).

Conclusions and Policy Implications

- 1) Study findings suggest that female dentists are more likely to provide care for younger patients than male dentists and may work in practice settings with higher percentages of underserved patients.
- 2) It is important to continue to monitor differences in dental practice patterns by gender; future research should investigate the influence of other factors such as commuting time and family characteristics to better understand the effect of gender on availability of oral health services.
- 3) The results of this study will be useful for policymakers considering alternative workforce strategies such as integration of primary care with oral health, expanding scopes of practice for other dental professionals, use of mobile dentistry or teledentistry, and providing workforce incentives in order to address the oral health care needs of the growing and aging US population.

Findings

In 2010-2016, the proportion of female dentists increased from 24.5% to 29.8% (21.7% change). Overall, during the study period, female dentists were a more diverse group than male dentists were. In 2016, statistically significant higher proportions of female than male dentists were black or African American (6.0% vs 2.9%), Hispanic (7.9% vs 4.2%), or Asian (23.4% vs 12.1%).

The majority of female and male dentists were US-trained, did not complete an advanced dental education residency program, and worked as general practitioners. However, a statistically significant larger proportion of female than male dentists were foreign-trained (8.3% vs 4.4%), completed a dental residency (39.2% vs 32.0%), particularly in pediatric dentistry (15.6% vs 7.0%) and general practice dentistry (54.1% vs 41.1%), and worked as pediatric dentists (6.1% vs 2.8%).

The majority of female and male dentists owned their practice, worked full-time in private practice, and practiced in suburban or urban areas. However, the likelihood of female dentists working as employees or independent contractors and working part time was 1.5 to 4 times greater than male dentists in all age cohorts ≤ 65 years. In contrast, the likelihood of female dentists practicing in small towns or rural areas was 17% to 40% lower compared with male dentists. Findings were adjusted for dentists' race/ethnicity, location of training, residency, specialty, rurality of state where primary practice was located, and year of data.

From 2010 to 2016, there was an increase in the proportion of dentists who completed residencies (10.4% change for women; 16.6% change for men), worked in pediatric dentistry (44.3% change for women; 21.7% change for men), were employed (11.9% change for women; 19.8% change for men), and worked in metropolitan areas (6.1% change for women; 5.8% change for men).

In 2016, female dentists spent statistically significant less average hours per week in the dental office (34.3 vs 35.7) and hours per week treating patients (30.4 vs 31.4) than male dentists. In contrast, female dentists reported more patient visits per week (53.4 vs 50.9) than male dentists, although the difference was not statistically significant. A statistically significant larger proportion of female than male dentists reported being too busy to treat all of the people requesting care (7.6% vs 4.9%) or providing care to all who requested services but being overworked (20.3% vs 18.6%).

Among a subset of 825 solo practitioners, a statistically significant larger proportion of female than male dentists reported an increase in patient volume in their practice during 2016 (44.9% vs 31.1%). The likelihood of female dentists providing services to patients < 18 years of age was 16% to 53% higher compared with male dentists in all age cohorts ≤ 65 years. Similarly, the likelihood of female dentists providing services to patients covered by public dental insurance was 30% to 80% higher compared with male dentists. Findings were adjusted for dentists' race/ethnicity, location of training, residency, specialty, and rurality of state where primary practice was located.

Conclusions

The findings from this study suggest that trends in the diversification of the dental workforce should be monitored over time so that pipeline programs, policy advocates, and professional stakeholders can be proactive in responding to changes in practice preferences, especially those related to the geography of dental practices. This study found small differences in practice hours by gender but compensating differences in patient volume, suggesting that concerns about substantial changes in capacity within the dental delivery system may be unfounded.

Gender diversification of the dental workforce is only one aspect of our changing health care and oral health care delivery systems. Dental professionals and others are making personal choices about work in the context of a fast-changing policy environment, so it is difficult to attribute changes in workforce preferences to gender alone. Many factors, including generational differences, will continue to affect the practice configurations in dentistry. It is important to continually monitor the workforce in order to ensure the adequate supply and appropriate distribution of dental professionals to meet the needs of the growing, aging, and also changing US population.