Impact of Dental Hygiene Scope of Practice in 2016 on a Population Oral Health Outcome: A Multilevel Logistic Modeling Analysis

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ABSTRACT

Objectives: Dental hygienists are preventive oral health specialists trained to provide oral health promotion and disease prevention services. Legal scopes of practice for dental hygienists vary considerably in states, impacting access to preventive oral health services. This study sought to quantify differences in scope of practice and describe its effect on an oral health outcome for the population.

Methods: A numerical scope of practice index was created to quantify the regulatory environment for dental hygienists, the tasks permitted, levels of required supervision, and the availability of direct reimbursement by state. Exploratory and confirmatory factor analyses were used to establish index validity. Individual-level information on outcome and potential confounders was extracted from the Behavioral Risk Factor Surveillance System. State-level confounders were drawn from a variety of data sources. Multilevel logistic modeling was used to assess the adjusted association between index scores and no teeth removed due to decay or disease.

Results: The factor analyses found the variables in the index were valid measures of the construct of scope of practice (P<0.01). The multilevel logistic analysis found that scope of practice for dental hygienists and the supply of dentists in a state played important roles in access to services and the prevention of dental decay and disease. Scope of practice was strongly and positively associated (P<0.01) with having no teeth removed due to decay or disease.

Conclusions: This study provides strong quantitative evidence that increasing dental hygienists’ legal scope of practice can impact oral health outcomes in the US adult population.

RESULTS (cont.)

Multilevel logistic modeling using the 2014 DHPPI and population oral health surveillance data from the BRFSS and controlling for state and individual level variables found that SOP in a state was positively and significantly associated (P<0.05) with an improved oral health outcome for a state’s population, that of having no teeth removed due to decay or disease.

Emerging practice models including dental hygiene therapy and new technology were impacting DH practice such that the 2001 instrument was no longer a completely accurate measure. Five states scored at 95 or above in 2014, suggesting achievement of the ideal practice environment envisioned for DHs in 2001 when the DHPPI was created.

In 2016, a new DHPPI instrument was created to better capture aspects of DH SOP. Because the new instrument included some variables that described emerging practice for DHs that was not widely adopted in states it was expected that state scores in 2016 would be lower than in 2014. In 2016, state scores ranged from 7 in Mississippi to 86 in Maine and New Mexico. The mean score for states in 2016 was 48.9.

The 2016 state scores were sorted by quintile to describe practice environments for DHs as limiting, restrictive, satisfactory, favorable, or excellent based on DHPPI score.

CONCLUSIONS

SOP is an important consideration for legislative and regulatory bodies. Understanding the actual impact of the changing roles and functions of DHs is of great value for patients, clinicians, policymakers, and advocates as they attempt to identify strategies to increase access to services and improve population oral health. DH SOP is positively and significantly associated with an improved oral health outcome.

REFERENCES

