Health Workforce Policy Brief

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A Dental Hygiene Professional Practice Index by State, 2014

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I. Introduction/Background

State based laws and regulations define legal scopes of practice (SOP) for health professionals and describe allowable services, the circumstances for service provision, and permitted settings. In 2001, the Center for Health Workforce Studies, with support from the Health Resources and Services Administration developed a numerical SOP index for the dental hygiene profession called the Dental Hygiene Professional Practice Index (DHPPI). The DHPPI scored state-specific dental hygiene SOP and provided a useful tool for comparative analysis of SOP across states. The range of possible composite scores was 0 to 100. Higher scores on the DHPPI were associated with greater autonomy for dental hygienists to provide educational, preventive, and prophylactic oral health services in public health settings in states. In 2014, researchers from the Oral Health Workforce Research Center **(**OHWRC) rescored state-specific SOP for dental hygienists in 2014, using the DHPPI.

II. Methods

Statistical analyses of the 2001 and 2014 DHPPI state scores were conducted to determine whether or not the variable categories in the DHPPI index (regulatory, supervision, tasks, and reimbursement) constituted a valid construct for measuring SOP. Multilevel logistic modelling was then completed to assess the impact of contextual factors including dental hygiene SOP, the supply of dentists and dental hygienists in a state, community water fluoridation, urban/rural geography, and personal demographics on oral health outcomes in a state. A total of 10 multilevel modelling equations were run using the 2001 and 2014 composite DHPPI scores and each of the four constituent parts of the index.

Exploratory and confirmatory factor analyses validated that the four groupings of variables in the DHPPI were dimensions of a single overarching concept of SOP. Reliability estimates remained high in all models in the multi-level logistic modelling (over 90%), and the chi-square values for each of the 10 models were highly statistically significant, indicating an excellent model fit. In the scope of practice multilevel modelling equations, DH scope of practice exerted a positive and significant impact on oral health outcomes in the population holding constant all relevant state and individual-level factors in both 2001 ($p<.001$) and in 2014 ($p=.02$).

III. Findings

SOP for dental hygienists broadened in many states between 2001 and 2014 but remained relatively unchanged in others. High scoring states in 2001 continued to show high scores in 2014. Some states made noticeable

Conclusions and Policy Implications

1) This study found that authorizing dental hygienists to work to the full extent of their professional competencies facilitates access to oral health services.

2) Dental hygiene SOP exerts a significant positive impact on oral health outcomes in a state's population.

3) Dental hygiene practice is evolving in some states to include basic restorative services after extra training and competency testing for dental hygienists.

4) A new emphasis in states on enabling team based oral health service delivery and the expansion of allowable tasks for dental hygienists suggests the need to build a modified index. A modified index would be useful to appropriately measure emerging SOP for the profession.

5) There is a need to engage in further research to better understand the relationship between dental hygiene SOP and population oral health outcomes.

advances in SOP for dental hygienists over the time period while several lower scoring states in 2001 showed little change in dental hygiene SOP in 2014.

Table 1. DHPPI Scores by State, 2001, 2014

State	Total Composite Score		State	Total Composite Score		State	Total Composite Score	
	2001	2014		2001	2014		2001	2014
Alabama	18	18	Kentucky	18	53	North Dakota	32	36
Alaska	35	54	Louisiana	41	40	Ohio	38	43
Arizona	45	75	Maine	56	98	Oklahoma	31	49
Arkansas	27	60	Maryland	36	49	Oregon	88	96
California	86	95	Massachusetts	34	82	Pennsylvania	42	71
Colorado	97	97	Michigan	35	54	Rhode Island	33	40
Connecticut	75	83	Minnesota	64	85	South Carolina	45	51
Delaware	32	36	Mississippi	15	18	South Dakota	42	53
District of Columbia	32	41	Missouri	74	74	Tennessee	39	43
Florida	33	41	Montana	41	89	Texas	41	42
Georgia	23	24	Nebraska	44	77	Utah	53	48
Hawaii	32	39	Nevada	65	78	Vermont	39	47
Idaho	45	45	New Hampshire	39	69	Virginia	17	68
Illinois	36	39	New Jersey	37	40	Washington	96	94
Indiana	37	42	New Mexico	86	87	West Virginia	10	70
Iowa	36	51	New York	50	57	Wisconsin	44	58
Kansas	39	63	North Carolina	29	33	Wyoming	34	42

Table 2. SOP Exerted a Significant Impact on Oral Health Outcomes in States in 2001, 2014

Variable	2001 Model		2014 Model	
	Odds Ratio	P-value	Odds Ratio	P-value
STATE LEVEL				
Intercept	0.921216	0.011	0.921065	0.016
Scope of Practice Index	1.005161	<0.001**	1.002744	0.011*
Dental Hygienist Rate	1.004925	0.009**	1.003614	0.057
Dentist Rate	1.003856	0.040*	1.003154	0.215
% Fluoridated Water	1.002542	0.039*	1.001726	0.053
Per Capita Income	0.999978	0.006**	0.999988	0.05*
% Urban	1.004195	0.098	1.004863	0.028*

IV. Conclusion

The findings of this research suggest that dental hygienist scope of practice exerts an influence on oral health outcomes in a state's population. The areas of health promotion, risk assessment, and disease prevention are considered core competencies for dental hygienists who function as preventive oral health specialists and play an important role in the prevention of dental decay and disease. The update revealed that the ideal practice environment envisioned in 2001 has nearly been achieved in some states and that dental hygiene practice has moved beyond recognized boundaries in that year. A new emphasis in states on enabling team based oral health service delivery and on expansion of allowable tasks for dental hygienists suggests the need to build a modified index to appropriately measure emerging SOP for the profession.

V. Policy Implications

Prevailing concerns about the sufficiency and the distribution of the current oral health workforce, especially dentists, is driving interest in the potential impact of expanding scope of practice for dental hygienists on access to services. Creating new practice opportunities for dental hygienists to work remotely is a strategy to increase access to services in communities where dentists are unavailable or in limited supply. Team based approaches to care delivery that maximize use of oral health professionals' skills and competencies appear to contribute to increased capacity in clinics and private practices thereby increasing the availability of oral health services.

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