





WHAT PREDICTS ATTITUDES TOWARD NEW WORKFORCE MODELS AMONG UNDERREPRESENTED MINORITY DENTISTS?

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Background

- In 2000, the Surgeon General's report on Oral Health noted significant deficiencies with the oral health workforce and access to care.
- In 2003, the SG's call to action noted a need to increase the diversity, flexibility and capacity of the oral health workforce.
- Since then:
 - The RWJ Pipeline program stimulated increased attention at diversifying the dental workforce through recruitment of minority students
 - Scope of practice for dental hygienists and assistants has been expanded and two new workforce models have been deployed:
 - Dental Therapist (DT)
 - Community Dental Health Worker (CDHW)



Research Overview

Broad Study Goals

- The goal of our study was to assess the outcomes of efforts to improve the diversity of the dental workforce and the relationship of these efforts to improvements in:
 - access to care
 - reductions in oral health disparities
- Research Team
 - UCSF and the Bronx-Lebanon Hospital Center, in partnership with the NDA, HDA, SAID, & ADEA.



Specific Study Objectives

- This analysis examines predictors of Underrepresented Minority Dentists' (URM) attitudes toward DTs and CDHWs.
 - New workforce has been focused on serving underserved populations
 - Minority providers have historically disproportionately served the underserved
 - New models could enhance these practices or be seen as a threat
- Using 2013 nationally representative survey data sampled from 4386 Black, Hispanic and American Indian/Alaska Native dentists, we sought to examine what factors predict SUPPORT and/or OPPOSITION to these two models
- Data included 1489 respondents (34% response rate) and survey included 150 questions



Methodology

- Responses to the following statements were recorded on a 5-point Likert Scale (Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree)
 - A well-trained, licensed mid-level provider such as a dental therapist should be developed as part of the dental team
 - A well-trained dental community health worker should be developed as part of the dental team
- Providers' attitudes toward DTs and CDHWs were recoded as a binary variables
 - Support: Strongly Agree + Agree = 1, all other = 0
 - Oppose: Strongly Disagree + Disagree = 1, all other = 0
- Independent variables of theoretical relevance were tested for correlation followed by logistic regression

Independent Variables: Demographics

	All	Hispanic	Black	AI/AN
Variable Name	n(%)	n(%)	n(%)	n(%)
Sample weighted n	<u>10,873</u>	<u>5095</u>	<u>5368</u>	<u>410</u>
Age (mean)	49	48	50	46
Gender				
Male	6376	3133	2807	286
	59%	61%	55%	70%
Female	4497	1963	2288	123
	41%	39%	45%	30%
US Born				
Yes	7353	2502	4450	402
	68%	49%	83%	98%
No	3460	2570	882	8
	32%	51%	17%	2%

Independent Variables: Demographics

	All	Hispanic	Black	AI/AN
Variable Name	n(%)	n(%)	n(%)	n(%)
Take Public Insurance				
Yes	6389	2754	3434	200
	64%	58%	70%	57%
No	3616	1989	1473	154
	36%	42%	30%	43%
ADA Member				
Yes	5954	3105	2559	291
	55%	61%	48%	71%
No	4919	1990	2809	119
	45%	39%	52%	29%
Work Collaboratively (total count)	<u>10528</u>	<u>4942</u>	<u>5187</u>	<u>399</u>
Collaborates with none	1705	897	743	66
	16%	18%	14%	16%

Independent Variables: Regional Distribution

	All	Hispanic	Black	AI/AN
Variable Name	n(%)	n(%)	n(%)	n(%)
Region				
East North Central	1146	391	719	37
	11%	8%	13%	9%
East South Central	603	63	534	7
	6%	1%	10%	2%
Mid-Atlantic	1223	595	629	-
	11%	12%	12%	-
Mountain	599	394	165	40
	6%	8%	3%	10%
New England	279	154	122	4
	3%	3%	2%	1%
Pacific	1755	1302	352	102
	16%	26%	7%	25%
South Atlantic	3531	1345	2108	78
	32%	26%	39%	19%
West North Central	295	137	136	22
	3%	3%	3%	5%
West South Central (referent)	1441	716	603	122
	13%	14%	11%	30%



Census Regions and Divisions of the United States



Dependent Variables: Attitudes

	All	Hispanic	Black	AI/AN
Variable Name	n(%)	n(%)	n(%)	n(%)
Support DT	2286	847	1352	87
	22%	18%	27%	22%
Oppose DT	4719	2327	2182	209
	46%	49%	42%	54%
Support CDHW	4360	1677	2539	144
	43%	35%	50%	37%
Oppose CDHW	2276	1224	917	135
	22%	26%	18%	35%



	Support for Dental Therapist		Opposition to Dental Therapist	
Independent Variables	OR	95% Cl	OR	95% Cl
Age (continuous)	1.000	(0.980-1.020)	0.984	(0.971-0.998)
Gender (0=Male, 1=Female)	0.909	(0.572-1.447)	1.156	(0.839-1.593)
Race: Black (Referent)				
Hispanic	0.708	(0.447-1.120)	1.237	(0.904-1.792)
American Indian/Alaska Native	1.176	(0.528-2.618)	1.204	(0.698-2.077)
Census Region: West South Central (Referent)				
East North Central	0.724	(0.328-1.600)	1.581	(0.882-2.833)
East South Central	1.200	(0.417-3.451)	0.984	(0.407-2.378)
Mid Atlantic	1.032	(0.463-2.300)	1.439	(0.760-2.728)
Mountain	0.421	(0.182-0.973)	2.256	(1.214-4.193)
New England	0.715	(0.270-1.893)	1.280	(0.636-2.574)
Pacific	0.689	(0.335-1.415)	1.004	(0.590-1.710)
South Atlantic	0.707	(0.367-1.362)	1.164	(0.700-1.936)
West North Central (Contains MN)	0.579	(0.231-1.450)	3.986	(2.045-7.770)
Born in the US (0=No, 1=Yes)	-	-	1.651	(1.161-2.347)
Attended a CODA School (0=No, 1=Yes)	-	-	-	-
Member of the ADA (0=No, 1=Yes)	0.455	(0.301-0.688)	2.179	(1.611-2.946)
Currently has no dental school loans (0=No, 1=Yes)	1.707	(1.025-2.842)	-	-
Practice serves primarily underserved (0=No, 1=Yes)	1.747	(1.095-2.787)	-	-
Collaboration Index (0-7 types of providers)	-	-	0.906	(0.839-0.977)
Accepts Public Insurance (0=No, 1=Yes)			0.747	(0.547-1.019)
Quartiles of Patients on Public Insurance				
(1=0-25; 2=25-50; 3=50-75; 4=75-100)	0.767	(0.621-0.948)	-	-
Degree of discrimination experienced in dental career	4.024	(4.005.4.050)		
(Range U times to 32+ times)	1.031	(1.005-1.058)	-	-
		=914		= 1152
	F(17,897)		F(16, 1136)	=5.21
	Prob > F = 0.0004		Prob > F = 0.0000	

	Support for Community Dental Health Worker		Opposition to Community Dental Health Worker	
Independent Variables	OR	95% CI	OR	95% CI
Age (continuous)	1.014	(0.999-1.029)	0.997	(0.982-1.013)
Gender (0=Male, 1=Female)	1.013	(0.731-10402)	1.105	(0.748-1.634)
Race: Black (Referent)				
Hispanic	0.531	(0.384-0.733)	1.617	(1.080-2.421)
American Indian/Alaska Native	0.586	(0.344-1.025)	2.239	(1.203-4.167)
Census Region: West South Central (Referent)				
East North Central	1.065	(0.573-1.978)	1.189	(0.596-2.375)
East South Central	0.803	(0.326-1.979)	1.264	(0.483-3.306)
Mid Atlantic	0.836	(0.441-1.585)	0.859	(0.403-1.830)
Mountain	0.863	(0.468-1.588)	1.350	(0.696-2.621)
New England	1.300	(0.640-2.641)	0.602	(0.239-1.513)
Pacific	1.283	(0.742-2.219)	1.070	(0.584-1.961)
South Atlantic	0.085	(0.504-1.422)	0.783	(0.433-1.415)
West North Central (Contains MN)	0.934	(0.485-1.797)	1.125	(0.529-2.390)
Born in the US (0=No, 1=Yes)	-	-	-	-
Attended a CODA School (0=No, 1=Yes)	-	-	2.037	(1.109-3.742)
Member of the ADA (0=No, 1=Yes)	0.823	(0.607-1.115)	1.504	(1.038-2.178)
Currently has no dental school loans (0=No, 1=Yes)	-	-	-	-
Practice serves primarily underserved (0=No, 1=Yes)	1.865	(1.373-2.533)	-	-
Collaboration Index (0-7 types of providers)	1.141	(1.057-1.233)	0.909	(0.831-0.995)
Accepts Public Insurance (0=No, 1=Yes)	-	-	0.655	(0.457-0.939)
Quartiles of Patients on Public Insurance (1=0-25; 2=25-50; 3=50-75; 4=75-100)	-	-	-	-
Degree of discrimination experienced in dental career (Range 0 times to 32+ times)	-		0.993	(0.970-1.016)
	Obs	= 1167	Obs	s=1126
	F(15.1152) = 4.32		F(17,110	9) 3.27
	Prob > F = 0.0000		Prob > F = 0.0000	

Key Points



- <u>Demographic variables</u> have little relationship to attitudes toward DTs, but differences by race exist in attitudes toward CDHW
- <u>Regional variation</u> exists in attitudes towards DTs, with particular opposition from the West North Central region (*contains MN, but has few providers*), but region has no impact on attitudes toward CDHWs
- <u>Membership in the ADA</u> impacts negative attitudes toward both models, and does not impact support for CDWH
- <u>International effects</u> are found in opposition to both types of models, with internationally born or trained less likely to oppose both
- Serving <u>underserved patients</u>, accepting <u>any public insurance</u>, and <u>collaboration</u> with multiple provider types tends to predict support (and/or lack of opposition)
- Having <u>no loans</u> predicted support for DTs, while having a higher percent of public insurance patients predicted opposition for DTs.
- The <u>degree of discrimination</u> experience reported predicted slight support for DTs.



Summary



- Organized dentistry is a fundamental avenue for providers to connect and advocate for their profession, so these results are not surprising. However, negative messaging is clearly dominating this group of providers attitudes toward these workforce models.
- While Black, Hispanic and American Indian/Alaska Native dentists are all classified as underrepresented, they are clearly quite different and have variance of perspectives that should be included in the ongoing discussion about new workforce models.
- Various experiences in the safety net seems to drive support, if financial pressures are not paramount.
- Economic variables (overall debt, practice cost, specialty practice status) did not drive attitudes

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 - Jeanne Sinkford: Associate Executive Director and Director of the ADEA Center for Equity and Diversity, Dean Emeritus at Howard University College of Dentistry
 - George Taylor: Chair Preventive and Restorative Dental Sciences UCSF / President elect of the Board of Dental Public Health
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¹Paul A. Harris, Robert Taylor, Robert Thielke, Jonathon Payne, Nathaniel Gonzalez, Jose G. Conde, Research electronic data capture (REDCap) - A metadata-driven methodology and workflow process for providing translational research informatics support, J Biomed Inform. 2009 Apr;42(2):377-81.)

