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Does State Legislation Improve Nursing Workforce Diversity?

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Introduction

A workforce that represents our nation's growing racial and ethnic diversity has been identified as a health and research priority (Health Resources and Services Administration [HRSA], 2006; Institute of Medicine, 2002; U.S. Department of Health and Human Services [HHS], 2011). Minority registered nurses (RNs) (Blacks, Hispanics, American Indian/Alaska Natives, Hawaiian/Pacific Islanders and Asians) make up only 16.8% of the nursing workforce (HHS, 2010), while racial minorities overall comprise over one-third of the U.S. population (U.S. Census Bureau, 2012). Findings of the 2013 National Workforce Survey of RNs and the 2010 U.S. Census indicated that the number of Blacks and Hispanics, with 6% and 3% respectively, employed in the registered nursing workforce, are substantially lower than their population estimates of 12.6% and 16.3% respectively (Budden, Zhong, Moulton, & Cimiotti, 2013; U.S. Census Bureau, 2010). Limited minority access to the health professions is an issue of equity (i.e., ensuring equal opportunities for racial and ethnic minorities) and raises concerns about the provision of care to minority populations (Cohen, Gabriel, & Terrell, 2002; Williams, 2007). In 2004, the Sullivan Commission on Diversity in the Healthcare Workforce concluded that this lack of diversity “may be an even greater cause of disparities in health access and outcomes than the persistent lack of health insurance for tens of millions of Americans (Sullivan, 2004, p. 1).” Although the Affordable Care Act has now enabled millions of Blacks and others to obtain coverage, gaps in access, coverage, and population outcomes persist (Alegria et al., 2014; Call et al., 2014).

To address these health disparities and inequities, individual states have enacted legislation with objectives focused on improving health outcomes and access to the health professions (National Conference of State Legislatures [NCSL], 2014.). Such initiatives include efforts directed at increasing the proportion of minorities in the healthcare workforce and individuals who work in underserved areas, funding and maintaining pipeline programs, and offering cultural competency education within the healthcare profession (NCSL, 2014.).

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Background

Research findings have generally suggested that minority healthcare providers are more likely to serve in minority communities compared to healthcare providers of non-minority status (Komaromy et al., 1996; HRSA, 2006), underrepresented patients feel more comfortable with a provider who shares the same race, ethnicity, or language (Garcia, Paterniti, Romano, & Kravitz, 2003), and a greater minority presence in the healthcare profession increases trust among growing minority groups (Cooper-Patrick et al., 1999; National Partnership for Action to End Health Disparities, 2011). An increased number of nurses from diverse backgrounds could be valuable to patient-provider interactions, communication, closing gaps in access to care, and improving the cultural competency and diversity of the healthcare system as a whole (Williams, 2007). The Sullivan Commission advised that full support from the highest levels of government (state and federal) is needed to gain increased representation for racial/ethnic minorities in the health professions and attempt to reduce health disparities (Sullivan, 2004).

Ladenheim and Groman (2006) reviewed state legislative efforts that focused on racial and ethnic disparities in healthcare to understand legislative activities related to the elimination of health disparities. They examined trends in state legislation that directly addressed race or ethnicity and health over three time-periods: pre-1990, 1990-1995, and 1996-2002. The authors did not evaluate the effects of the legislation or the disparities post implementation. They identified nine states (Michigan, New Jersey, New York, Virginia, Minnesota, Louisiana, Tennessee, California, and Florida) that had enacted legislation aimed at recruiting minority and culturally diverse personnel to the health professions or recruiting individuals to work in medically underserved areas. Ladenheim & Groman interviewed legislators from these same states who were sponsors of current legislation. The authors concluded that an impetus for introducing such minority recruitment legislation was to inform fellow legislators, health professionals, and the public of the magnitude of the racial health disparity problem.

Additionally, in 1978, the Illinois General Assembly drove the Urban Health Program (UHP) at the University of Illinois at Chicago to assist in meeting state expectations of increasing recruitment and retaining minorities in the health professions (Toney, 2012). In developing this program, Illinois legislation expanded the 1969 Medical Opportunities Program, which focused broadly on minority recruitment to medicine, to create the UHP so that minority recruitment to other components of the healthcare workforce: nursing, dentistry, pharmacy, public health, and applied science became a priority as well. By instituting pipeline initiatives, culture changes within schools, and early outreach programs, the university sustained the highest graduation rate in the U.S. for minority healthcare professionals (148 degrees per year; after Historically Black Colleges and Universities and Latino-serving Institutions¹) during the years 1978-2011.

¹Historically Black College and Universities defined as an institution whose principal mission was and is the education of Black Americans (United Negro College Fund, n.d.). Latino-Serving Institutions defined as colleges, universities, or systems/districts where total Hispanic enrollment comprises a minimum of 25% of the total enrollment (Hispanic Association of Colleges and Universities, n.d.).

While there has been considerable attention to the issues of limited diversity in the health professions, little is known regarding the impact of minority recruitment activities (i.e., legislation) on improving diversity in nursing programs. Nurses make up the largest proportion of personnel in the healthcare sector (Bureau of Labor Statistics, 2014) and thus are critical to meeting the healthcare needs of the growing diverse population. Therefore, the purposes of this study were to identify and categorize state legislation directed at increasing minorities to health professions, investigate the short-term effects of state legislation on recruitment of minorities to baccalaureate nursing programs, and determine if minority enrollment was representative of the state's reported demographics. The results are particularly important to policymakers who currently consider legislation that will address health equity concerns in the United States.

Methods

Design

The implementation of minority recruitment legislation varies across states, thus providing a natural experiment. States that had enacted legislation were compared to geographically adjacent states without such legislation. The comparator states helped ensure internal validity and account for known and unknown confounders, such as time, that may have affected changes in minority recruitment (Shadish, Cook, & Campbell, 2002).

Data Sources

Three data sources were used for analysis: a) the National Conference of State Legislatures (NCSL) to determine states with and without laws; b) the American Association of Colleges of Nursing for baccalaureate RN enrollment rates before and after legislation was enacted; and c) the U.S. Census Bureau for state minority demographics.

National Conference of State Legislatures—States that had enacted a law containing language related to recruiting or encouraging diversity, underrepresented groups or minorities in nursing or other health professions were identified from the NCSL data set (NCSL, 2014). We excluded states if their legislation focused on recruitment to the medical, dental, optometric, or podiatric professions, but did not include nursing. We also excluded states with legislation focused on recruitment of individuals who were not from an underrepresented population, but would commit to work in underserved areas. State laws and their original enactment dates were verified using Lexis-Nexis (LexisNexis, n.d.), an online database for legal and business research, as well as each state's legislation website. Grey literature was also searched to identify additional states meeting inclusion criteria that may have been omitted from the NCSL data set.

American Association of Colleges in Nursing—Baccalaureate RN minority enrollment data for select years between 1991 and 2010 were purchased and obtained from the American Association of Colleges in Nursing (AACN) National Survey Results (AACN, n.d.). Since 1991, AACN has invited all schools with baccalaureate or higher level nursing programs to participate in this survey. Respondent schools complete the survey on the AACN website. Response rates ranged from 77% to 87% between 1991 and 2010.

Beginning in 1999, AACN collected specific enrollment data for Hawaiians and Pacific Islanders; prior to 1999, these groups were classified as Asian.

We extracted generic RN baccalaureate enrollment data by minority status: Black, Hispanic, Alaska Native/American Indian, and Hawaiian Native/Pacific Islander. We excluded enrollment data if students were overrepresented in nursing (Asians, Whites) (HHS, 2010), or reported race as unknown or were enrolled in a non-generic baccalaureate RN program including associate degree, RN to baccalaureate of science, and accelerated baccalaureate programs. Because of their small enrollment number, American Indian/Alaska Natives and Hawaiian/Pacific Islanders (AIAN/HPI) were grouped collectively.

U.S. Census Bureau—We extracted information on minority representation for states with legislation and their comparators pre- and post-legislation using data reported by the U.S. Census Bureau (n.d.). For states that enacted laws between 1989 and 1995, the 1990 census data were used; between 1996 and 2005, the 2000 census data were used; and between 2006 and 2010, the 2010 census data were used.

Procedures

We identified states having minority recruitment legislation along with geographically adjacent comparator states without such legislation. Each legislation was reviewed and coded for the presence of characteristics related to the legislation's specific objectives. Total enrollment into baccalaureate nursing programs and specific enrollment of Black, Hispanic, and AIAN/HPI for each state and its comparator were extracted from the AACN survey results at three time points: baseline (2 or 3 years pre-legislation, depending on available data), and 3 and 5 years post-legislation. Baseline dates varied for each state because they enacted legislation at different times. We calculated the proportion of Blacks, Hispanics, and AIAN/HPIs enrolled into RN baccalaureate programs for each time point by state. Using U.S. Census data, we created a minority enrollment index for each minority group by dividing the enrollment proportion of each group by the proportion of that minority within the state to assess the representativeness of minority group enrollment within the state. An average index of 0.8 or greater was considered as enrollment adequately representing the state's minority population.

Data Analysis

Data were analyzed using SAS 9.3 statistical software. We first conducted descriptive statistics of each state's enrollment by minority group and index of representativeness by year. Using chi-square statistics, we analyzed change in minority enrollment from pre legislation to three years after legislation implementation. A p-value less than 0.05 was considered statistically significant provided that a similar change did not occur in the comparator state.

Results

Seven states (Texas [1989], Virginia [1990], Michigan [1990], California [1996], Florida [1997], Connecticut [2004], and Arkansas [2005]) enacted legislation to increase minority

representation in the nursing workforce during the period 1989-2005. Geographically adjacent states (Louisiana, North Carolina, Indiana, Oregon, Georgia, Rhode Island, and Oklahoma) without such legislation were identified as comparator states (see Figure 1.).

We categorized state laws into four groups: funding, reimbursement, workforce enrichment programs, and encouragement. *Funding* consisted of initiatives to offer grants, loans, and scholarships to minority groups. *Reimbursement* included legislation that required entities such as medical facilities that received Medicaid to submit a formal written plan to recruit and retain health professionals from minority backgrounds. *Workforce enrichment programs* were state committees or other such entities established to increase minorities to the health professions workforce. *Encouragement* included legislation that encouraged minorities to join the health professions but lacked a formal plan for doing so (see Table 1).

Three states (Michigan [two separate laws], California, and Texas) enacted legislation that addressed *funding*; one state (Florida) used *reimbursement*; three states (Virginia, California, and Connecticut) attempted *workforce enrichment programs*; and two states (Arkansas and California) used strategies that focused on *encouragement*. Of the seven states, only California and Michigan used a multi-pronged approach with more than one of these strategies.

Table 2 provides detail on the change in RN baccalaureate minority enrollment following enactment of legislation to increase enrollment of minority students. Post-legislation, enrollment of Black nursing students significantly increased in Arkansas (13.8% to 24.5%, $p < 0.001$), Michigan (8.0% to 10.0%, $p = 0.01$), and California (3.3% to 5.4%, $p < 0.001$) compared with Oklahoma, Indiana, and Oregon, where no changes in enrollment of Black students occurred. Although enrollment of Black nursing students significantly increased in Florida, a similar increase occurred in its comparator state, Georgia. Enrollment of Hispanic nursing students significantly increased in Florida (11.8% to 15.4%, $p = 0.001$) and Texas (11.2% to 13.9%, $p = 0.001$), compared with Georgia and Louisiana. In addition, enrollment of AIAN/HPI nursing students significantly increased in California (1.0% to 4.4%, $p < 0.001$) compared with Oregon. Of note, following enactment of legislation in Connecticut, enrollment of both Black and Hispanic students significantly decreased. Examining the collective effect of legislation for states enacting legislation to improve nursing workforce diversity, states with legislation significantly increased enrollment of Black (7.8% to 11.3%, $p < 0.001$) and AIAN/HPI (0.7% to 1.5, $p < 0.001$) students, while comparator states without laws had subtle increases that did not reach statistical significance for these groups. Hispanic RN enrollment remained statistically unchanged in states with laws (6.3% to 6.1%, $p = 0.44$) and those without (1.7% to 1.9%, $p = 0.25$).

Table 3 provides detail on the adequacy of representation of minority RN baccalaureate students by its respective minority subgroup before and after passage of legislation. All states achieved adequate representation of AIAN/HPIs following enactment of legislation. Three states maintained consistent representation of Blacks (Texas, California, and Florida), but only two states, Michigan and Florida, were represented of Hispanics throughout.

Discussion

To our knowledge, this study is the first to evaluate the effects of state legislation on minority recruitment to careers in nursing. These results are particularly important to policymakers because they provide needed comparable state-level data on the outcome of enacted workforce diversity legislation. Our findings suggest that state legislation does increase minority nursing enrollment; however, it may be insufficient to meet state-based demographic representation for Blacks and Hispanics. Additionally, as state legislation enhances recruitment of minorities to careers in nursing, those tied to reimbursement, funding, and encouragement proved to have greater effects on minority enrollment. This is consistent with findings of studies that have examined the effect of pipeline programs; with financial support as a dominant feature leading to increased success in encouraging minority enrollment in nursing schools (Carthon, Nguyen, Chittams, Park, & Guevara, 2014).

While AIAN/HPIs represent a very small percentage of the total minorities in the United States, our findings indicated that adequacy of AIAN/HPI representation has been achieved in all states with minority recruitment legislation. Furthermore, state legislation has had a greater impact on both adequacy of representation and recruitment of Blacks to baccalaureate nursing programs, compared with Hispanics. This is surprising as Hispanics are the largest growing segment of the US population (Ennis, Rios-Vargas, & Albert, 2011) and comprise a larger proportion of the US population than Blacks; therefore, at the minimum, greater increases in enrollment rates among this group would be expected. California, in particular, has one of the largest populations of Hispanic (U.S. Census Bureau, 2010), but this group is poorly represented in nursing and baccalaureate RN programs. Barriers associated with English comprehension skills, high school completion, socioeconomic status, cultural differences, and educational support may play a role in Hispanics' ability or motivation to pursue baccalaureate RN degrees. Pipeline programs that target Hispanics and aim to specifically address these issues early in academic development would be beneficial to creating opportunities for this group in the nursing professions.

States whose legislation involved *reimbursement* (Florida), *encouragement* (Arkansas and California), and *funding* (Michigan, California, and Texas) were more likely to demonstrate increased enrollment following enactment of legislation, while states with legislation that focused on *workforce enrichment programs* (Virginia and Connecticut) did not. Interestingly, California experienced a twofold increase in Black RN student representation pre-legislation to post-legislation in Year 3. Florida not only maintained adequate representation of Black RN baccalaureate enrollment from the time of pre-legislation to post-legislation in Year 5, but also significantly increased RN baccalaureate enrollment for both Blacks and Hispanics. These results are consistent with the hiring practices in California and Florida, which have historically placed substantial effort into alleviating minority health issues through laws and practice (Ladenheim, & Groman, 2006).

Limitations

Our study has several limitations. Pre-legislation data were not available for Texas (1989), Virginia (1990), and Michigan (1990) because the AACN began collecting enrollment data

in 1991. Therefore, 1991 data were used for these states for pre-legislation years. Further, specific enrollment data on Hawaiians and Pacific Islanders were not available until 1999, thereby possibly exaggerating the increased enrollment of AIAN/HPI during post-legislation years. Because enrollment data are obtained by national survey, results are subject to both self-report and non-response bias. However, survey response rates were uniformly high, decreasing the risk of non-response bias. Comparator states were identified based on geographic proximity and may have differed in factors such as size, demographics, and population. It is possible that comparator states as well as study states may have had other non-state legislative minority recruitment initiatives in place (e.g., independent school initiatives, federal programs) or previously enacted state legislative minority recruitment initiatives may have reached audiences in adjoining states potentially affecting our results. Although we could not explore these specific factors in this current study, we hope to have accounted for these potential limitations in our study design. Further, we limited our analysis to early effects on minority enrollment and did not assess longer-term effects of state laws on minority RN baccalaureate recruitment. Our analysis was limited to the effect of state laws on recruitment to baccalaureate programs in nursing and did not include the effect of the legislation on enrollment in associate degree, RN to baccalaureate degree, or accelerated baccalaureate nursing programs. More minorities may have enrolled in associate degree programs than baccalaureate programs as a result of state legislation. However, as the American Nurses Association positions for the baccalaureate degree to be the entry level to practice (Smith, 2009), it is important to evaluate all racial groups at this standard. A comprehensive study that evaluates both associate degree programs and baccalaureate programs and increases understanding of enrollment trends may be completed using enrollment data from the National League for Nursing and similar methods described in this study. Finally, two states (Michigan and California) had multiple legislation making it difficult to differentiate which law was responsible for the minority enrollment increases post-legislation.

Conclusion

Increasing minorities in the healthcare profession is a key recommendation for reducing health disparities. Enactment of state legislation appears to increase representation of minority nurses to generic RN baccalaureate programs at least in the short-term. However, the effect varies among minority subgroups, with the least impact on enrollment of Hispanics into nursing. Future research is warranted that explores perceived barriers and facilitators to baccalaureate nursing enrollment among Hispanics and evaluates the effects of pipeline programs as well as other initiatives in recruiting this group. Further research is needed to examine the sustainability of legislation over time.

Because nurses make up the largest portion of personnel in the healthcare sector (Bureau of Labor Statistics, 2014), they may be in the best position to meet the diverse needs of the patients they serve, thereby contributing to reductions in health disparities. Thus, it is critical for nursing to take the lead in bridging the gaps of diversity in the healthcare workforce paying particular attention to building the diversity of our future students and faculty. Legislators might focus on replicating efforts made by success states such as California and Florida, implementing minority recruitment legislation tied to funding and reimbursement,

and establishing pipeline and recruitment and retention initiatives (such as those at the University of Illinois at Chicago's Urban Health Program) to implement effective strategies that will attract and retain a diverse nursing workforce.

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Figure 1. States with & without legislation to recruit minorities to the healthcare professions

Table 1
Health professional minority recruitment laws in TX, VA, MI, CA, FL, CT, and AK grouped by common objectives

State	Year	Code	Funding	Reimbursement	Workforce Enrichment Programs	Encouragement
Texas	1989	Texas Education Code Ann.51.711	X			
Virginia	1990	VA. Code 32.1-122.7			X	
Michigan	1990	Mich. Comp Law 333.2707	X			
		Mich. Comp Law 333.2721	X			
California	1996	Cal. Health & Safety 128330	X			
		Cal. Health & Safety 127875			X	
		Cal. Health & Safety 128380				X
Florida	1997	Fla.Stat.641.217		X		
Connecticut	2004	Conn.Gen.Stat.4-124dd			X	
Arkansas	2005	Ark.Code 6-60-212				X

Table 2
Minority enrollment into baccalaureate nursing programs in states with and without minority recruitment legislation before and 4 years after

State	Law Enacted	Black				Hispanic				American Indian/Alaska Native & Hawaiian/Pacific Islander			
		Pre Law (%)	Post Law (%)	% Change	P-Value	Pre Law (%)	Post Law (%)	% Change	P-Value	Pre Law (%)	Post Law (%)	% Change	P-Value
Texas	1989	11.6	10.3	-1.3	.04	11.2	13.9	2.7	.001	0.4	0.3	-0.1	.21
Louisiana		15.2	20.5	5.3	<.001	1.5	1.3	-0.2	.39	0.1	0.4	0.3	.005
Virginia	1990	7.3	8.1	0.8	.40	0.8	1.0	0.2	.55	0.3	0.4	0.1	.74
North Carolina		20.7	18.7	-2.0	.12	1.1	1.1	0.0	.99	0.5	0.5	0.0	.95
Michigan	1990	8.0	10.0	2.0	.01	2.2	1.9	-0.3	.42	1.1	0.9	-0.2	.55
Indiana		5.5	4.5	-1.0	.07	0.9	1.3	0.3	.18	0.2	0.3	0.1	.50
California	1996	3.3	5.4	2.1	<.001	9.8	10.2	0.4	.53	1.0	4.4	3.4	<.001
Oregon		1.3	1.6	0.3	.57	2.3	3.0	0.7	.35	1.3	1.7	0.4	.46
Florida	1997	16.8	23.3	6.5	<.001	11.8	15.4	3.6	.001	0.3	0.2	-0.1	.60
Georgia		12.9	22.4	9.5	<.001	1.5	1.3	-0.2	.52	0.1	0.3	0.2	.10
Connecticut	2004	7.6	5.5	-2.1	.02	5.9	4.1	-1.8	.02	0.4	1.0	0.6	.08
Rhode Island		6.9	8.7	1.8	.18	4.9	4.6	-0.3	.77	0.8	1.5	0.7	.17
Arkansas	2005	13.8	24.5	10.7	<.001	1.4	0.9	-0.5	.27	0.3	0.8	0.5	.11
Oklahoma		8.9	7.0	-1.9	.14	3.0	3.6	0.6	.43	5.8	6.7	0.9	.42

States with minority legislation bolded

Minority enrollment in baccalaureate nursing programs as a proportion of minority subgroup in states with and without minority recruitment laws

Table 3

State	Law Enacted	Black		Hispanic		American Indian/Alaska Native & Hawaiian/Pacific Islander			
		Pre Law	Post Law	Pre Law	Post Law	Pre Law	Post Law	Year 3	Year 5
		Year 3	Year 5	Year 3	Year 5	Year 3	Year 5	Year 3	Year 5
Texas	1989	1.0	0.7	0.9	0.4	0.5	0.5	1.0	0.8
Louisiana		0.5	0.2	0.7	0.7	0.5	0.6	0.3	1.0
Virginia	1990	0.4	0.4	0.4	0.3	0.6	0.4	1.5	2.0
North Carolina		0.9	1.1	0.9	0.9	0.7	0.9	0.4	0.4
Michigan	1990	0.6	0.7	0.7	1.0	0.7	0.9	1.8	1.5
Indiana		0.7	0.6	0.6	0.5	0.6	0.9	1.0	1.5
California	1996	0.4	0.8	0.8	0.4	0.3	0.4	0.8	1.6
Oregon		0.8	1.0	0.8	0.6	0.4	0.6	0.8	0.6
Florida	1997	1.2	1.1	1.3	1.0	0.7	0.9	1.0	1.0
Georgia		0.5	0.9	0.9	0.9	0.3	0.3	0.5	1.8
Connecticut	2004	0.8	0.5	0.4	0.6	0.4	0.3	1.3	4.3
Rhode Island		1.5	1.7	1.1	0.6	0.3	0.3	0.8	0.7
Arkansas	2005	0.9	0.8	0.5	0.4	0.2	0.4	0.3	0.8
Oklahoma		1.2	1.5	1.1	0.6	0.5	0.4	0.8	0.6

1.0 = enrollment equal to minority representation within state; States with minority legislation bolded