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Public health factors not associated with physician assistant and nurse practitioner U.S. scope of practice laws

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Research Objective: Increased use of physician assistants (PAs) and nurse practitioners (NPs) has been proposed as a partial means to overcome access to care barriers resulting from predicted physician shortages, but state scope of practice (SOP) laws may limit the ability of PAs and NPs to improve access. It is possible that states whose public health measures indicate the greatest need for health care might enact the most permissive SOP laws in order to maximize the impact of NPs and PAs on access to care. We sought to determine whether state public health factors, including workforce supply, need/demand for health services, and health services access may explain some of the variation in PA and NP SOP laws.
Methodology: Linking data from six publically available sources, the relationship between scope of practice and social determinants of health, health and function, health care services access, and health workforce, was assessed through a multi-step, state-level, cross-sectional analysis. (N=50) Using data from the 2013 American Academy of Physician Assistants (AAPA) Six Key Elements of State PA Laws and the 2012 Pearson Report, continuous and categorical variables representing the number of key SOP elements legislated by 50 states were created for each profession. The most recently available information (2011-2014) regarding social determinants (8 variables), health and function (7 variables), health care access (4 variables) and health workforce (5 variables) were obtained from the County Health Rankings, Kaiser Family Foundation State Health Facts, and the HRSA Area Resource File.   Cluster analysis using the k-means procedure (StataSE 13) was utilized to construct four categorical variables representing each grouping of public health-related variables (i.e. social determinants, health and function, access, and workforce). These four categorical variables became the independent variables in subsequent models. We then performed bivariate (using ANOVA and chi square) and multivariate (using linear and multinomial logistic regression) analyses to assess the relationship between SOP for each profession and the constructed variables.
Results: In bivariate analyses, social determinants as well as health and function clusters were associated with PA SOP. States with a moderate percent of the population living in rural areas, moderate median income, and low violent crime rates were more likely than those with low percent of the population living in rural areas, high income and high violent crime rates to have less restrictive PA SOP ($\beta = 1.02$, $p = 0.03$). Similarly, states with low physical and mental health, high smoking and low drinking were less likely than those with good physical and mental health, low smoking and high drinking to have less restrictive PA SOP ($\beta = -1.79$, $p = 0.004$). No significant bivariate relationships were seen between NP SOP and cluster variables. No statistically significant relationships were seen in multivariate regression models for either profession.
Conclusions: The variation in PA and NP SOP does not appear to be associated with state public health factors. This suggests that current PA and NP SOP laws may be based on factors other than the state's health needs.