APNS AND THE POPULATION HEALTH IN FRONTIER COMMUNITIES

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Purposes/Aims: The purpose of this study is to evaluate the relationship between APN (Advanced Practice Nurse)-to-population ratio and population health outcomes in U.S. frontier counties.

Conceptual Basis: This study utilizes the concept of “Nurse Dose”, which includes three components: dose, nurse, and host response. In this study “dose” refers to the ratio of the number of APNs per 100,000 population by county, “nurse” refers to APNs residing in the county, and “host response” refers to county morbidity and mortality rates. Dependent variables include overall health outcome, mortality, and morbidity (a composite variable which includes the percentage of the population reporting poor/fair health, number of poor physical health days, number of poor mental health days, and low birth weight percentage).

Methods: A cross-sectional secondary analysis of existing national data, compiled as part of the Nurses and the Population’s Health study, will be completed using U.S. frontier counties as the unit of analysis (population density of <7 persons/square mile). This study will evaluate data from 308 frontier counties from 16 states and 858 licensed APNs residing in those counties. Health outcome data were obtained from the 2012 County Health Rankings database and information regarding APN numbers by county of residence in 2013 was obtained directly from the respective state boards of nursing. Based on the findings of the correlation analysis, regression models will be constructed to determine the independent effect of APN-to-population ratios on county health outcomes.

Results: Initial bivariate analysis indicate a significant correlation between APN-to-population ratios and health outcomes ($r = - .212, \ p = .0021$) with more modest correlations between mortality ($r = - .164, \ p = .013$) and morbidity ($r = - .201, \ p = .002$). Multivariate regression models will be constructed which adjust for social determinants of health factors in the population.

Implications: Previous research indicates that increasing rurality is associated with poorer health outcomes, owing to a reduced supply of health care providers and resources. This is the first study to evaluate the effects of APN dose to population outcomes and has the potential to influence workforce policy.

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