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Research examines country and health system factors on RN and MD personnel production

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A key component to achieving good patient outcomes in the healthcare world is having the right number and type of healthcare professionals with the right resources. While this may seem like a simple, obvious concept, it is still a large problem for many countries throughout the world. Social and political determinants impact how healthcare resources such as direct funding, national educational priorities, societal normative gender role assignment, and other factors all contribute to patient outcomes in varying degrees.

A recent study in the *BioMed Central* journal Human Resources for Health, led by New York University Rory Meyers College of Nursing (NYU Meyers) Associate Professor Allison Squires, PhD RN, FAAN examines if country-level contextual factors have an impact on Human Resources for Health (HRH) and to what extent.

Dr. Squires and her team define "country-level contextual factors" as those broader social and political institutional structures that affect, directly or indirectly, the healthcare system, population health, and health worker supply and demand. They limited the focus of the study to physicians and nurses/midwives because these are the two most consistently identifiable healthcare professions across the world. As such, the data is measuring the Nurse/Midwife per Population Ratio (NMPR) and the Physician per Population Ratio (PPR).

"This exploratory observational study is grounded in complexity theory as a guiding framework," said Simon Jones, PhD, MSc, Research Professor in the Department of Population Health, Division of Healthcare Delivery Science, NYU Langone Medical Center (NYULMC), "Variables were selected through a process that attempted to choose macro-level indicators identified by the interdisciplinary literature as known or likely to affect the number of healthcare workers in a country."

For the researchers, the combination of these variables attempts to account for the gender- and class-sensitive identities of physicians and nurses. The analysis consisted of one year of publicly available data, using the most recently available year for each country.

"The significance of the economic and inequality variables in the model suggests that systematic national policies aimed at reducing social, gender, and economic equality could positively affect health workforce production," said Dr. Squires. "For example, we discovered a strong, positive correlation between the average years spent in school and a population/ health workforce ratio. More schooling equals a better NMPR and PPR."

"Another positive factor came from the increase in education, said Jennifer Uyei, PhD, MPH, Research Scientist in the Division of Comparative Effectiveness and Decision Science, NYULMC, "which correlates with a reduction of gender inequality in these professions."

The researchers found evidence that gender inequality in nursing/midwives is a larger potentially more systemic problem because of its inherent female gender dominance.

"Our results indicate that nurse/midwife production may be more sensitive to broader gender inequality issues than physicians," said Dr.

Squires. "In some ways, this may seem like a 'common sense findings', but the prevailing research had not previously quantified it."

The team also concluded the finding about the relationship between NMPR and migration rates may also be gender sensitive since men are more likely to migrate than women and with few exceptions, low and middle income country women are more likely to follow their migrating husband than initiate it themselves. The significant physician findings about migration rates may confirm this dynamic.

"This analysis is the first of its kind in a multitude of ways," said Hiram Beltrán-Sánchez,MS, MA, PhD, assistant professor, Department of Community Health Sciences, UCLA. "Only a few studies have looked at the context of HRH production at a macro-level, but none in this way. It also is one of few to look at gender inequality issues among health professions beyond pay disparities, and among the first of its kind to highlight how political regimes and governance issues influence health workforce production."

Dr. Squires and her team notes that the limitations of the study come from the known data quality possibly having inconsistencies in reporting across countries and data coordination failures known to affect cross-national datasets. They also mention that future studies may want to test other variables in the categories they identified to see if these enhance the model's precision.

The research team's hope is this data will encourage and assist in further research about these issues; laying the foundation for the addition of a new facet of information about healthcare professionals and worker production. They also are hopeful it will propel the efforts to get policy changes supportive of all cadres of health workers on these issues and as a result, improve healthcare and health outcomes worldwide.