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Nurse-led Task Shifting an Effective Strategy to Control Hypertension in Ghana, New Study Finds

Strategy proven effective in HIV management now believed to successfully reduce high blood pressure

The addition of a nurse-led intervention for hypertension management to health insurance coverage was more effective in lowering blood pressure (HPB) than the provision of health insurance alone in the Sub-Saharan country of Ghana, a region of Africa where HPB is rampant, according to a study publishing online on May 1 in the journal *PLOS Medicine*.

The growing burden of hypertension and other chronic diseases in Sub-Saharan Africa is made worse by lack of health insurance, high out-of-pocket costs, and a shortage of healthcare providers. The healthcare workforce crisis is particularly acute in Ghana, where in 2015, there were only one physician and nine nurses to 10,000 people compared to 19 physicians and 49 nurses to 10,000 people in North America. Given such limited resources, effective strategies are needed to manage chronic diseases, such as hypertension. To date, implementation of systems-level strategies to reduce these barriers to health has been lacking.

In the first study of its kind conducted in Sub-Saharan Africa, a team of researchers led by NYU School of Medicine in collaboration with Kwame Nkrumah University of Science & Technology found that task-shifting (delegating tasks from physicians to nurses and other non-physician workers), when combined with access to health insurance, was an effective strategy in reducing systolic blood pressure among adults with newly-diagnosed uncomplicated hypertension.

“Non-communicable diseases including cardiovascular diseases, cancer and diabetes now account for 80 percent of all deaths in low- and middle-income countries,” said Gbenga Ogedegbe, MD, MPH, professor of Population Health and Medicine at NYU School of Medicine and the study’s lead author. “A similar approach was effective for the management of HIV in low- and middle-income countries, and there is considerable evidence suggesting that task shifting of prescribing duties from doctors to trained nurses for initiation and maintenance of antiretroviral therapy was equally effective compared to a physician-centered model. It is imperative for countries in Sub-Saharan Africa to strongly consider this policy for management of hypertension if we are to stave off its growing burden in the region.”

How the Study Was Conducted

Researchers collected data from 757 patients across 32 community health centers within Ghana's public healthcare system in the Ashanti Region over five years. Each center was randomly assigned to either the health insurance group or the task-shifting intervention group. Patients in the health insurance group received health insurance coverage for 12 months through Ghana's national health insurance program. The insurance covered access to primary care, medical consultations, laboratory tests and medications at a low cost. The patients attended scheduled nurse visits every three months, during which their blood pressure was taken. The patients also received education materials about hypertension.

Patients in the task-shifting group also received health insurance coverage, and the World Health Organization's cardiovascular disease risk management package that was delivered by trained nurses. As part of the World Health Organization (WHO) Cardiovascular Disease (CVD) Package, nurses screened the patients for cardiovascular risk, provided counseling on lifestyle behaviors, and initiated treatment with blood pressure medications for 12 months. The nurses adjusted the medication dosages every month until blood pressure control was achieved. Each nurse received training in the implementation of the WHO CVD package, hypertension treatment protocol, and strategies for lifestyle counseling during a three-day training session.

After one year, researchers measured the change in patients' systolic blood pressure (main outcome) from the start of the study to 12 months when it ended. The other outcomes they measured included lifestyle behaviors: levels of physical activity and percent change in weight. The researchers found that the addition of a nurse-led intervention to provision of health insurance coverage led to a greater reduction in systolic blood pressure (- 20.4 mmHg) than health insurance coverage alone (- 16.8 mmHg), with a net difference of 3.6 mmHg at 12 months.

The results show that there is a public health benefit to implementing the WHO CVD Package plus health insurance coverage in primary care practices. For policymakers, the use of this strategy, which has been previously established by WHO, means that its generalizability and scale-up is possible.

"This study has policy implications for Ghana and all countries in sub-Saharan Africa," says Ogedegbe. "Incorporating delivery of the WHO CVD Package as part of nurses' duties within existing healthcare systems in Sub-Saharan Africa represents a viable implementation strategy, particularly in countries like Tanzania, Kenya, Ethiopia, Cameroon and Nigeria, where task-shifting of primary care duties to non-physician health workers already exists. Future studies should now address the cost-effectiveness of these strategies and their potential for scale-up across Ghana and other countries in the region."

Ogedegbe lists a number of the study's limitations. The current lack of policy within Ghana Health Service to grant nurses prescribing power for blood pressure medications to manage patients with uncomplicated hypertension is a major challenge to scaling up this strategy across Ghana. The researchers also did not conduct a cost-effectiveness analysis to determine the relative costs and benefits of each intervention. This would be required to determine the sustainability and scalability of both strategies over time.

In addition to Dr. Ogedegbe, study co-authors include Dr. Jacob Plange-Rhule, Michael Ntim and Kingsley Apusiga from Kwame Nkrumah University of Science and Technology, Kumasi, Ghana; Joyce Gyamfi, NYU School of Medicine; Dr. William Chaplin, Kiran Khurshid, and Jasmin Mogaverro, St. John's University, Queens, New York; Dr. Juliet Iwelunmor, St. Louis University; Kwasi Yeboah Awudzi, Ashanti Regional Health Directorate, Ghana Health Service, Ashanti Ghana; Kofi Nana Quakyi, College of Global Public Health, New York University; Dr. Bamidele Tayo and Dr. Richard Cooper, Stritch School of Medicine, Loyola University Medical Center.

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