Noncommunicable diseases (NCDs) are further deteriorating the health of populations in low-income settings, while those populations are still struggling with a substantial burden of infectious diseases. Therefore, research aimed at elucidating factors driving NCDs and identifying potential approaches to addressing the NCD burden in these regions is desperately needed. In a collaborative effort between Ugandan investigators and US researchers from Case Western and the University of Kentucky, Kaddumukasa et al. report important findings that may offer critical insights into the development of effective interventions for preventing hypertension and its associated adverse outcomes in Africa.

In this case-control study of poststroke patients with and without a history of hypertension, they evaluated the relationships between salt consumption (as determined by 24-hour urine sodium) and health knowledge regarding salt consumption and blood pressure (BP); their hypothesis was that individuals with more knowledge would consume less salt and would have lower BP. They did not confirm the knowledge–intake and knowledge–BP relationships they had expected to find. Nonetheless, the nature of their study design and the structure of their knowledge assessments offer critical insights into what may drive high sodium intake in this African population and what Africa-based interventions aimed at decreasing sodium intake and thus BP should look like.

Salt knowledge was assessed at 3 levels: first, whether there was basic knowledge regarding the negative influence of high sodium on health in general; second, whether there was disease-specific knowledge regarding the effect of high sodium on hypertension specifically; and finally, procedural knowledge regarding the individual-level actions to be taken to lower personal sodium intake. Of note, in Uganda as well as many African countries, dietary sodium largely results from salt added during cooking or at the time of eating by the consumer. This is in contrast to most Western diets in which sodium consumption is driven by sodium content in processed foods. Despite the nature of the study population—these were poststroke patients and more than half had an established diagnosis of hypertension—health knowledge regarding salt intake was abysmal. More than 50% of participants lacked even basic knowledge; only about a third understood there was a connection between sodium intake and hypertension and only 5% between sodium intake and stroke. Poststroke patients with a history of hypertension had more knowledge regarding the relationship between salt intake and hypertension, but they did not have lower salt intake, perhaps because of poor procedural knowledge. Even participants with knowledge regarding the negative effects of sodium on health, and who reported their own sodium intake as “about right,” actually had high levels of urine sodium, indicating distorted perspectives about what actually constitutes a healthy level of salt intake. In fact, those with higher procedural knowledge had lower sodium intake.

The findings of this study indicate that, in order to address secondary stroke prevention in Africa, an educational program will be required, aimed at informing stroke survivors of the negative health consequences of excessive salt intake, accompanied by clear instructions as to how to limit salt intake. These interventions will require definitive illustrations of what constitutes the right amount of salt for daily intake. Given the low level of formal education in this particular population of stroke survivors, such an educational program would likely need to be pictorial in nature: alternatively, if in printed form or in any audio-based (i.e., radio) format, information would need to provide estimates for appropriate intake based on some common reference. For example, instructions for homemade oral rehydration solutions in Africa generally illustrate 8 teaspoons of sugar and 1 teaspoon of salt in an empty 1-L cola bottle. Population-level interventions of the same nature with appropriate outcome assessments are also warranted but will be more expensive and challenging to conduct.

This study confirmed the expected relationship of higher sodium intake associated with higher BP and provides critical insights into the dietary education needed. It also offers a cautionary message lest we assume that effective education alone will be enough to lower sodium intake. In looking at sodium intake...
stratified by modified Rankin Scale scores, a further interesting finding was that individuals too disabled to season their own food had lower sodium intake than those able to salt to personal preference. We humans like the taste of salt and knowledge cannot overcome that.

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**DISCLOSURE**

The authors report no disclosures relevant to the manuscript. Go to Neurology.org for full disclosures.

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