Medical Xpress

New research shows kids can help families cut salt consumption

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School age children may be an important part of bringing down stroke rates, as first ever research in China published in the *BMJ* today shows that an app can help families cut salt consumption, which is tied to poor

cardiovascular health. Researchers found that adult participants saw an 8 percent decline in salt consumption, accompanied by a positive fall in systolic blood pressure. These results are contextually noteworthy given their significant public health learnings: it was conducted in a real-world setting; it can be scaled up; and the overall difficulty of changing dietary salt behavior. Broader research indicates that salt reduction at those levels would avert 250,000 stroke and heart events per year in China alone.

"Too much salt raises blood pressure and increases the risk of cardiovascular disease. Unlike in developed countries with high consumption of salty processed foods, in China most salt is added in the kitchen. So if we want to cut salt and save lives, we really need to change how people prepare and eat their food. Primary schools are well-organized places where salt reduction education could be integrated into the existing health education curriculums and nearly all the families could receive the education through schoolchildren in the long run. This app-supported school-based model has great potential to reduce salt intake across the whole population in China," said corresponding author Puhong Zhang, Associate Director at The George Institute for Global health at the Peking University Health Science Center.

"This study provides a novel and feasible approach to reducing salt intake in the population where most of the salt in the diet is added by consumers. Nationwide implementation could support salt reduction efforts, leading to a reduction in salt intake in the Chinese population and therefore a reduction in strokes and heart disease," said Professor Feng He, Professor of Global Health Research at Queen Mary University of London and lead author.

"This study has achieved a reduction in salt intake and blood pressure with the use of a smartphone app. Given the devastating impact salt has on health, all countries should adopt measures to reduce salt intake,

including apps like AppSalt," said Professor Graham MacGregor, Chairman of WASSH (World Action on Salt, Sugar and Health), Professor of Cardiovascular Medicine at Queen Mary University of London and co-author.

For public health researchers, the AppSalt study provides important learnings. First, it reinforces the idea that primary schools offer effective and scalable pathways to improving the health of families. Second, it indicates how m-health technologies can be used with health education in real world settings. With appropriate training and supervision, people with even minimal public health knowledge can use an app-based system to learn, set goals and monitor progress.

The partners in Shijiazhuang, Luzhou and Yueyang were encouraged by the positive results and look forward to scaling up the model to wider schools.

About the study

The study was funded by the National Institute for Health Research (NIHR). Conducted over 12 months, the study used a parallel, cluster-randomized controlled trial in three cities in Hebei, Sichuan and Hunan provinces involving 54 primary schools with nearly 600 children and 1200 adults. Along with the app, a supportive school environment (classroom posters etc) and offline activities including art and knowledge competitions and seminars for parents and children were integrated in the intervention package.

AppSalt was installed on the smartphones of parents and a corresponding WeChat mini app installed on teachers' smartphones for progress management. AppSalt was designed to cover routine health education curriculum and salt reduction education lessons. Families completed online Q and A sessions and practical sessions such as preparing and or

shopping for reduced salt meals. Only adults could use the app, and children were directed to ensure parents or grandparents completed the lessons with them. Salt intake was monitored using a seven-day salt estimation method involving a salt intake diary with info recorded in the app. Participants could track their progress to meet salt reduction targets. At the beginning and end of the study the baseline and outcomes were measured by two consecutive 24-hour urine collections.

More information: Feng J He et al, App based education programme to reduce salt intake (AppSalt) in schoolchildren and their families in China: parallel, cluster randomised controlled trial, *BMJ* (2022). DOI: 10.1136/bmj-2021-066982

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