

Packaged water consumption linked to cholera outbreak in DRC capital

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Providing clean water to millions of people. Credit: DFID - UK Department for International Development, Flickr, 2011, CC-BY 2.0 (creativecommons.org/licenses/by/2.0/)

Cholera is a diarrheal disease caused by ingestion of the *Vibrio cholerae*

bacterium. In November 2017, a cholera epidemic occurred in Kinshasa, the Democratic Republic of the Congo, where no outbreak had been recorded for nearly a decade. A study published in *PLOS Neglected Tropical Diseases* by Placide Mbala-Kingebeni at The National Institute of Biomedical Research, Democratic Republic of the Congo, and colleagues suggests a relationship between consuming street-vended sachet water and an increased risk of contracting cholera.

Behavioral risk factors for cholera are well-documented in rural and semi-urban areas. However, in densely populated mega-cities in Sub-Saharan Africa, transmission patterns and risk factors are poorly understood. To investigate cholera transmission patterns in a large urban setting, researchers conducted a matched case control study. They recruited 195 people who had tested positive for cholera in February 2018 and 195 people who matched the demographics of the positive cases, but who tested negative, as controls. Field staff administered survey questionnaires to identify cholera risk factors. The authors then analyzed which [risk factors](#) were most reported by positive cholera cases compared to the controls.

The authors found that increased frequency of sachet water consumption was positively associated with increasing risk of cholera. Although the water inside the sachets was not contaminated and was of higher quality than other common drinking [water sources](#), water sachets are consumed by biting off an edge and sucking the water out of the sachet. Direct and continuous contact between the mouth and sachet transmitted pathogens from the sachet's contaminated exterior. The study did have some limitations, for example, not all included cases were laboratory-confirmed, and sample size was small compared to the size of the population at risk. Future studies should address these limitations and expand on the current research to uncover previously unknown modes of cholera transmission.

According to the authors, "The consumption of water from street-vended sachets needs to be considered as a potential route of cholera transmission in urban settings where the use of this drinking water type is frequent. Health messaging, outbreak control measures and epidemiological investigations should include the consumption of water sachets as a potential risk factor during future cholera outbreaks in urban low-resource contexts."

More information: Mbala-Kingebeni P, Vogt F, Miwanda B, Sundika T, Mbula N, Pankwa I, et al. (2021) Sachet water consumption as a risk factor for cholera in urban settings: Findings from a case control study in Kinshasa, Democratic Republic of the Congo during the 2017-2018 outbreak. *PLoS Negl Trop Dis* 15(7): e0009477.
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