

Public Health 2020: Consumers' perception of the quality and portability of sachet-drinking water in the Ashanti region of Ghana: A multistage study

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Water is one of the most essential and abundant commodities of man occupying about 70% of the earth's surface (Hazen and Toranzos, 1990). This study is assessed consumers' perception on the quality and portability of sachet-drinking water in the Ahafo Ano South District.

A descriptive cross-sectional study was conducted using simple random sampling to select 3 sub-district, five communities and 300 sachet water consumers, 50 wholesalers and 7 sachet water producers in the Ahafo-Ano South District.

The findings obtained were: Majority of consumers and wholesale 83.7% and 66% respectively had adequate knowledge on basic properties of water, majority 66% of wholesale respondents had adequate knowledge on safe storage conditions of sachet water, 24%, 8% and 14.3% of consumers, wholesalers and manufacturers had knowledge about sachet water regulatory bodies, 0% and 14.3% of wholesalers and manufacturers are trained on water quality controls.

In conclusion, based on their adequate knowledge on the basic properties of water, majority of consumers are able to make clear distinction between good quality water and poor quality one, also due to the lack of training on water safety and quality controls in the sachet water supply chain, stakeholders should prioritize trainings and regulatory intensify their monitoring systems.

To determine the quality of sachet water samples in the Cape Coast municipality of Ghana, random sampling procedures were used to collect 180 samples from 29 brands produced in the municipality from 1999 to 2004. For any particular year, each tested brand was sampled three times at intervals of not less than 2 weeks (usually monthly) between the months of March to June. Forty-five percent (45%) of the brands subjected to bacteriological examination contained coliform bacteria for one sampling period or another during the period of investigation. The coliform contamination seemed to be more prevalent with some particular brands. Three out of seven brands examined in 2004 also recorded the presence of *E. coli*. Exceedances were recorded for WHO drinking water quality guidelines for pH (6.25-7.93) in 2002 and for conductivity (67-306 microS cm (-1)) in 2002 and 2004. Total hardness values for all sachet water brands were less than 100 mg/l CaCO₃ (3) and therefore below the WHO limit for potable water. None of the samples seems to pose any health dangers as far as the major cations; sodium (17.4-19.1 mg/l), potassium (5.7-6.2

mg/l), calcium (8.0-24.0 mg/l) and magnesium (19.9-50 mg/l) are concern. Apart from nitrite, for which some Exceedances were recorded and phosphate which does not have an established WHO guideline, the measured major anions (i.e., chloride: 1.57-37.7 mg/l, sulfate: 0.33-44.33 mg/l and nitrates: 0.005-0.70 mg/l) were within the WHO drinking water guideline. No Exceedances were also recorded for iron and lead. In general, the high quality claimed for sachet waters could not be confirmed based on the measured physico-chemical and bacteriological properties. The variable quality and in some cases, poor water quality observed, likely reflects the fact that the sachets are not always bagged under scrutinized sanitary conditions.

Good quality water is odourless, colourless, and free from faecal pollution, and a satisfactory safe supply must be made available to consumers. The study assessed consumer preference and quality of sachet water sold and consumed in the Sunyani Municipality of Ghana. A cross-sectional study design was used, and data were collected using a structured questionnaire from a sample size of 500 respondents. A total of twenty (20) samples of sachet water commonly sold and consumed in the Sunyani Municipality were also collected and analyzed for bacteriological and physicochemical parameters. Out of these 20 samples, 10 samples of sachet water were collected from the production site and the other 10 samples from the market site. The same brands of sachet water that contained total coliforms from the production site were the same brands that contained total coliforms selected from the market. From this study, only total coliforms other than *Escherichia coli* were detected in the water samples analyzed. It was observed that the evaluated physicochemical parameters of the water analyzed were within the accepted WHO limits. It is recommended that consumers be educated about the indicators to look out for when buying sachet water and, also, those regulatory bodies is empowered to ban the sale of unwholesome brands of sachet water on the market.