# Article information:

Occurrence of Pharmaceutical Residues and Antibiotic-Resistant Bacteria in Water and Sediments from Major Reservoirs (Owabi and Barekese Dams) in Ghana  
<https://www.hindawi.com/journals/jchem/2022/1802204/>

# Article summary:

1. The study found low levels of pharmaceuticals in water and sediment samples from Owabi and Barekese reservoirs in Ghana, with four out of nine targeted pharmaceuticals detected in at least one sample.

2. Antibiotic-resistant bacteria were found in the samples, with five isolates resistant to all antibiotics tested.

3. A survey conducted among residents near the reservoirs showed that many dispose of unused medicines inappropriately, highlighting the need for a facility or program to collect unused medicines to reduce pollution by pharmaceuticals in the environment.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article titled "Occurrence of Pharmaceutical Residues and Antibiotic-Resistant Bacteria in Water and Sediments from Major Reservoirs (Owabi and Barekese Dams) in Ghana" provides a comprehensive analysis of the presence of pharmaceutical residues and antibiotic-resistant bacteria in water and sediment samples from two major reservoirs in Ghana. The study also assesses the knowledge, attitude, and practice of inhabitants near these reservoirs regarding the disposal of unused and expired medicines.

Overall, the article presents a well-structured research study with clear objectives, methods, results, and conclusions. The authors provide detailed information on the sampling procedures, analytical methods used for detecting pharmaceutical residues and antibiotic-resistant bacteria, as well as the physicochemical characterization of water and sediment samples. The results show that four out of nine targeted pharmaceuticals were detected in at least one sample, with low levels ranging from 0.06 to 36.51 μg/L in water samples and 3.34–4.80 μg/kg in sediments.

However, there are some potential biases that need to be considered when interpreting the results presented in this article. Firstly, the sample size is relatively small (28 samples), which may limit the generalizability of the findings to other regions or countries. Secondly, the study only focused on two major reservoirs in Ghana; therefore, it is unclear whether similar patterns would be observed in other water bodies within Ghana or other African countries.

Another limitation is that the study did not investigate all possible sources of pharmaceutical residues in water bodies such as industrial effluents or aquaculture activities. Additionally, while the authors acknowledge that even low levels of pharmaceutical residues can pose ecological risks upon long-term exposure, they do not provide a detailed discussion on these risks or their potential impact on human health.

Furthermore, while the authors conducted a survey on waste disposal patterns by residents living around these reservoirs to assess their knowledge, attitude, and practice regarding disposal of unused medicines; they did not explore any counterarguments or alternative perspectives on this issue.

In conclusion, this article provides valuable insights into the occurrence of pharmaceutical residues and antibiotic-resistant bacteria in water bodies within Ghana. However, further research is needed to investigate other potential sources of contamination as well as to assess potential ecological risks associated with long-term exposure to low levels of pharmaceutical residues. Additionally, future studies should consider larger sample sizes and explore alternative perspectives on waste disposal practices among residents living around these reservoirs.

# Topics for further research:

* Sources of pharmaceutical residues in water bodies
* Ecological risks of long-term exposure to low levels of pharmaceutical residues
* Impact of pharmaceutical residues on human health
* Antibiotic resistance in water bodies
* Waste disposal practices in Ghana
* Occurrence of pharmaceutical residues in other African countries

# Report location:

<https://www.fullpicture.app/item/b350e76f44f10b6820f76b699287c074>