African Journal of Public Health and Health Systems

A Methodological Framework for Assessing Antibiotic Residue Prevalence and Consumer Risk Perceptions in Informal Urban Meat Markets: A Kumasi Case Study

Kwame Asare[1], **Esi Nyarko Ampofo**[1,2], **Ama Serwaa Boateng**[3,4], **Kofi Mensah Ankrah**[5,6]

[1] Food Research Institute (FRI)

[2] Department of Public Health, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi

[3] Accra Technical University

[4] Department of Pediatrics, Ashesi University

[5] Department of Surgery, Food Research Institute (FRI)

[6] Ashesi University

Published: 05 January 2020 | **Received:** 01 August 2019 | **Accepted:** 29 November 2019

Correspondence: kasare@hotmail.com

DOI: 10.5281/zenodo.18531470

Author notes

Kwame Asare is affiliated with Food Research Institute (FRI) and focuses on Medicine research in Africa.
Esi Nyarko Ampofo is affiliated with Department of Public Health, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi and focuses on Medicine research in Africa.
Ama Serwaa Boateng is affiliated with Accra Technical University and focuses on Medicine research in Africa.
Kofi Mensah Ankrah is affiliated with Department of Surgery, Food Research Institute (FRI) and focuses on Medicine research in Africa.

Abstract

Informal urban meat markets are vital for food security in African cities but may contribute to antimicrobial resistance through unregulated antibiotic use in livestock. Standardised methods to concurrently assess antibiotic residue prevalence in meat and consumer risk perceptions in these settings are lacking. This article presents a methodological framework with two to quantify the prevalence of antibiotic residues in meat from informal markets, and to assess associated consumer knowledge, perceptions, and self-reported purchasing behaviours. The framework employs a concurrent mixed-methods design. The quantitative component involves a cross-sectional survey of consumers and vendors using a structured questionnaire, paired with laboratory analysis of meat samples for antibiotic residues via enzyme-linked immunosorbent assay (ELISA). The qualitative component uses focus group discussions to explore risk perceptions and contextual practices. The article details protocols for stratified market sampling, ethical considerations, and integrated data analysis. As a methodology article, it presents no primary empirical results. Pilot testing demonstrated the framework's feasibility. A key procedural finding was that a multi-stage, trust-building approach with vendors was essential for successful sample collection. The proposed framework offers a standardised, ethically sound approach for generating integrated evidence on antibiotic residue prevalence and its social dimensions in complex informal market environments. Researchers and public health practitioners are encouraged to adapt this framework in similar contexts. Future applications should involve regulatory bodies from the outset to facilitate evidence-based policy dialogue. Antimicrobial resistance, food

safety, mixed methods, One Health, sub-Saharan Africa, veterinary public health This methodology provides an integrated tool for public health research in informal food systems, bridging a gap between laboratory science and social science to inform holistic interventions.

Keywords: *Antimicrobial resistance, Informal food markets, Sub-Saharan Africa, Risk perception, Mixed-methods research, Food safety, Veterinary public health*

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

✉ REQUEST FULL PAPER

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa

Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge