African Child and Adolescent Psychiatry (Medical)

Methodological Evaluation of District Hospitals Systems in Ghana: A Time-Series Forecasting Model for Clinical Outcomes Assessment

Yaw Gyamfi[1,2], **Sekwu Ampim**[3,4], **Quashie Kwesi**[1,5], **Kevin Appiah**[6,7]

[1] University for Development Studies (UDS)

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

[3] Water Research Institute (WRI)

[4] Department of Surgery, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi

[5] University of Ghana, Legon

[6] Department of Pediatrics, University for Development Studies (UDS)

[7] Department of Clinical Research, Water Research Institute (WRI)

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Correspondence: ygyamfi@hotmail.com

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Author notes

Yaw Gyamfi is affiliated with University for Development Studies (UDS) and focuses on Medicine research in Africa.
Sekwu Ampim is affiliated with Water Research Institute (WRI) and focuses on Medicine research in Africa.
Quashie Kwesi is affiliated with University of Ghana, Legon and focuses on Medicine research in Africa.
Kevin Appiah is affiliated with Department of Pediatrics, University for Development Studies (UDS) and focuses on Medicine research in Africa.

Abstract

District hospitals in Ghana play a crucial role in healthcare delivery for underserved populations. However, their efficiency and effectiveness are subject to variability over time. The review incorporates quantitative and qualitative methods to assess the performance of district hospitals. A time-series forecasting model will be applied to predict future clinical outcomes based on historical data. A significant proportion (45%) of district hospital records showed variability in patient care quality, with fluctuations in both outpatient and inpatient services over a two-year period. The proposed time-series forecasting model can provide insights into potential improvements to clinical outcomes, though further validation is required. District hospitals should implement regular performance evaluations and consider adopting the recommended forecasting model for continuous improvement. Treatment effect was estimated with $text\{logit\}(\pi) = beta 0 + \beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, African, Hospital, Systems, Evaluation, Forecasting, Modelling, Outcomes*

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