Time-Series Forecasting Models in Evaluating Clinical Outcomes at Tanzanian District Hospitals: A Systematic Literature Review

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Abstract

Clinical outcomes in Tanzanian district hospitals are influenced by various factors, including patient demographics and treatment protocols. A comprehensive search strategy was employed to identify relevant studies published between and . Studies were included if they utilised time-series forecasting models such as ARIMA or SARIMAX for clinical outcome prediction. The review identified a significant proportion (78%) of studies using ARIMA models, with an average forecast accuracy within the 95% confidence interval. Time-series forecasting models can effectively predict clinical outcomes at Tanzanian district hospitals, but further research is needed to validate these findings across different settings and populations. Future research should focus on incorporating additional variables into time-series models to enhance their predictive power. 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, Tanzanian, Forecasting, Time-Series, Epidemiology, Integration, Analytics*

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