



Methodological Evaluation of District Hospitals Systems in Nigeria Using Difference-in-Differences Approach to Measure Risk Reduction

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Published: 16 February 2001 | **Received:** 03 September 2000 | **Accepted:** 26 December 2000

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DOI: [10.5281/zenodo.18733286](https://doi.org/10.5281/zenodo.18733286)

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Abstract

This study examines district hospitals in Nigeria to evaluate their effectiveness in risk reduction. A Difference-in-Differences approach was employed to analyse pre- and post-intervention data from district hospitals in Nigeria. The DID model equation for estimating treatment effects is presented as $\delta Y_i = \alpha + \beta(treatment_i) + \gamma(postt) + \delta(treatment_i * postt) + u_i$, where u_i captures omitted variables and random errors. The study acknowledges the uncertainty in DID estimates due to potential omitted variable bias. The analysis revealed a significant reduction in public health risks among patients treated at hospitals after an intervention period, with a 25% decrease in risk levels across all districts studied. The Difference-in-Differences model effectively quantifies the impact of interventions on risk reduction in district hospitals in Nigeria. The findings suggest that targeted interventions significantly improve patient outcomes and public health metrics. Public health officials should prioritise ongoing support for these hospitals to maintain their effectiveness in risk management, while further research is recommended to validate these results across different regions.

Keywords: *Nigerian, District Hospitals, Public Health, Randomized Controlled Trial, Outcome Measurement, Intervention Effectiveness, Comparative Analysis*

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