



Robotic Surgical Systems in Rural Clinics: Short-Term Health Outcomes in Southwestern Nigeria

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Abstract

Robotic surgical systems have shown promise in improving access to advanced medical care in underserved regions. A longitudinal study was conducted across five rural clinics, collecting data on 200 patients who underwent robotic-assisted surgeries. Data collected included demographic information, preoperative/postoperative assessments, and complications during the first year post-surgery. The study found that 85% of patients reported a significant improvement in their health status within one month of surgery, with no statistically significant difference observed between urban and rural clinics (95% confidence interval: -0.2 to +0.4). While initial results indicate positive health outcomes following robotic-assisted surgeries, further longitudinal studies are required to establish long-term efficacy. Rural healthcare providers should continue to integrate these systems with ongoing training and support programmes to optimise patient care and reduce complications. Robotic surgery, rural clinics, health outcomes, confidence interval, complication rates Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta_1 p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Geographical, Rural, Surgical, Technology Adoption, Health Services Delivery, Longitudinal Study, Outcome Analysis*

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