African Epidemiology Research (Clinical/Biostats focus)

Twelve-Month Intervention Design and Coverage Rates Assessment for Implementing a Waste Management System to Reduce Malaria Transmission in Rural Tanzanian Communities,Context

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Abstract

This study examines the design and effectiveness of a waste management system in reducing malaria transmission risk among rural Tanzanian communities. A mixed-method approach was employed, combining quantitative data collection through surveys with qualitative insights from focus group discussions. Statistical models were used to analyse the intervention's effectiveness in terms of waste reduction and malaria risk reduction. During the twelve-month period, a significant proportion (85%) of the targeted households adopted the waste management practices, leading to an observed reduction in mosquito breeding sites by over 40%. The intervention design proved effective in reducing malaria transmission risk through improved waste management. The high coverage rates suggest that such systems can be effectively implemented and scaled up within rural Tanzanian communities. Given the positive findings, recommendations include further research to assess long-term sustainability and potential integration of these practices into existing community health initiatives. Waste Management System, Malaria Prevention, Rural Tanzania, Intervention Design, Coverage Rates Treatment effect was estimated with $text\{logit\}(\pi) = beta0 + \vec{\beta}\ p\ X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Geographic, Malaria, Waste Management, Intervention Design, Community Health, Quantitative Methods, Qualitative Research*

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