African Hydrology Research (Earth Science focus)

Urban Ghanaian Slums Asthma Education Programme Effectiveness Over Three Months: Cost-Effectiveness Analysis

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Abstract

Urban Ghanaian slums face significant health challenges, particularly asthma prevalence among adolescents. Participants were randomized into intervention (education workshops) and control groups. Pre- and post-intervention assessments included symptom frequency, lung function tests, and parent-reported health status. The education programme led to a statistically significant decrease in asthma symptoms by 25% ($p < 0.01$), with a moderate effect size measured using Cohen's d. The educational intervention was effective in reducing adolescent asthma symptoms, and the cost-effectiveness analysis showed it was more efficient than existing programmes in urban slums. Future studies should explore long-term effects and scalability of this intervention in other urban settings. Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \vec{\beta}\ p\ X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African Geography, Urbanization, Intervention Studies, Asthma Management, Cost-Benefit Analysis, Randomized Controlled Trials, Public Health Education*