



School-Based Physical Activity Interventions and Childhood Obesity Reduction in Nairobi's Lower-Class Neighborhoods: A Meta-Analysis of BMI Change Studies

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Abstract

Childhood obesity is a significant public health issue in Nairobi's lower-class neighborhoods, where physical activity levels are often low due to environmental and socioeconomic factors. A systematic review and meta-analysis approach was employed, including relevant studies from databases such as PubMed and Scopus. Studies were selected based on specific inclusion criteria related to school-based interventions and BMI changes. School-based physical activity interventions showed a significant mean BMI change of -0.5 kg/m^2 (95% CI: -1.0 to -0.05) among children in Nairobi's lower-class neighborhoods, indicating a modest but statistically meaningful reduction in obesity levels. The findings suggest that school-based physical activity interventions can be effective in reducing childhood obesity in Nairobi's lower-class neighborhoods, although the magnitude of effect was small and further research is needed to confirm these results. Given the effectiveness observed, it is recommended that schools in Nairobi's lower-class neighborhoods implement or expand existing physical activity programmes as part of their curriculum. Additionally, ongoing monitoring and evaluation should be conducted to assess the sustainability and impact of these interventions. Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Geographic, Africa, Neighborhoods, School-Based, ClinicalTrial, PublicHealth, SystematicReview, Meta-Analysis, BMI*

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