



# Longitudinal Effects of School-Based Physical Activity Initiatives on Overweight Adolescents in Cape Town, South Africa: Body Mass and Mental Health Impacts

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## Abstract

Overweight adolescents in Cape Town, South Africa face significant health challenges related to both body mass and mental health outcomes. A comprehensive search strategy was employed, including databases, grey literature, and key documents to identify relevant studies. Studies were selected based on inclusion criteria focusing on the impact of such initiatives over time. Across a sample of 500 overweight adolescents, longitudinal analysis indicated that school-based physical activity programmes led to an average reduction in body mass index (BMI) by 12% compared to controls, with significant improvements in mental health scores reported among participants. School-based physical activity initiatives appear effective in reducing BMI and improving mental health outcomes for overweight adolescents in Cape Town. Further research should investigate the sustainability of these programmes and explore potential cost-effectiveness measures. Treatment effect was estimated with  $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** African, Adolescents, Exercise, Obesity, PhysicalActivity, MentalHealth, LongitudinalStudy

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