

## Publication

### Relationship between body mass index and physical activity among children from low-income communities in Gqeberha, South Africa: a cross-sectional study

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**Mesh terms** Male; Female; Humans; Child; Body Mass Index; Cross-Sectional Studies; Overweight, epidemiology; Thinness, epidemiology; South Africa, epidemiology; Pediatric Obesity; Exercise; Body Weight

This study aimed to establish the prevalence of underweight, overweight and obesity, the level of moderate-to-vigorous physical activity (MVPA) and the association thereof among vulnerable children from low-income communities in South Africa. Cross-sectional data were collected from 916 children (467 boys and 449 girls) aged 8-13 years ( $x = 10.4 \pm 1.2$  years) attending eight low-income schools in Gqeberha, South Africa. Measured outcomes included accelerometry-measured physical activity (PA), weight, height and body mass index (BMI). Analysis of variance was used to determine the mean difference of total MVPA stratified by sex and BMI classification. Overall, 13% of the cohort were underweight, 19% were overweight/obese and 64% engaged in 60 min of MVPA per day. Girls presented nearly twice the odds of being overweight or obese than boys (95% CI: 1.40-2.77). Underweight to normal-weight children (boys: OR = 3.89, 95% CI: 2.18-6.93; girls: OR = 1.78, 95% CI: 1.13-2.80) were more likely to engage in 60 min/day of MVPA than overweight to obese children. There is an inverse association between BMI categories and the duration of MVPA achieved per day. Special attention should be aimed at increasing awareness of healthy nutrition and promoting a variety of PA, especially among girls and children with excess weight.

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