

Pitch Presentations

Active School Commuting and Sports Participation: Friends or Foes for the WHO Guidelines in Children Aged Between 3 and 7 Years

Daniela Rodrigues^{1,2}, Gabriela Costa³, Milena Moraes¹, Aristides Machado-Rodrigues^{3,4}

¹ Research Centre for Anthropology and Health (CIAS), University of Coimbra, Coimbra, Portugal

² Department of Life Sciences, University of Coimbra, Coimbra, Portugal

³ Faculty of Sport Sciences and Physical Education, University of Coimbra, Coimbra, Portugal

⁴ Interdisciplinary Center for Human Performance (CIPER), University of Coimbra, Coimbra, Portugal

Purpose: Active school commuting (ASC) and sports participation (SP) are recognised as contributing factors in meeting WHO guidelines for physical activity (PA); however, studies in children report a consistent shortfall in meeting the recommendations. Therefore, this study aims to determine whether ASC and SP act as complementary or competing behaviours in achieving these guidelines.

Methods: A sample of 279 children (5.01 ± 1.04 years) was recruited. A questionnaire was applied to their parents, in which SP and ASC were assessed as dichotomous variables (yes or no). Age-specific WHO guidelines were assessed using moderate-to-vigorous physical activity (MVPA) and total physical activity (TPA), retrieved via tri-axial accelerometer data collected for at least two weekdays and one weekend day. A binary logistic regression model was used to examine the odds ratio (OR) between the ASC and SP and the likelihood of meeting WHO guidelines, controlling for confounders (e.g. both behaviours and children's age). A linear regression was conducted to assess the relationship between time spent in these activities. Statistical significance was set at $p < 0.05$.

Results: Of the 279 children, more than half ($n = 170$, 60.9%) did not meet the guidelines. When analysing the crude OR to meet the guidelines, neither SP ($\beta = 0.46$, $p = 0.082$) nor ASC ($\beta = 0.45$, $p = 0.155$) reached statistical significance. Nonetheless, when computed together, the co-adjusted OR of meeting WHO guidelines was 1.75 times higher for those with SP than without ($p = 0.042$; 95% confidence interval 1.020 to 3.00). This change in OR may be explained by the inverse linear relationship observed between ASC and SP ($\beta = -40.74$, $p < 0.001$), suggesting a possible competing effect or behavioural compensation. This is corroborated by the low prevalence (3.9%; $n = 11$) of children who met the guidelines through a combination of SP and ASC. This association disappears when adjusting for categorical age (<5 years or ≥ 5 years), indicating age as a strong predictor of guideline compliance. As children age from pre-schooler to school age, the prevalence of meeting the guidelines increases from 4.2% to 57.1%.

Conclusion: Overall, age-specific strategies should be developed to allow ASC and SP to function as complementary rather than competing behaviours, thereby improving compliance with WHO PA guidelines.

