

Validity of a physical activity diary in assessing sedentary activity among Ecuadorian adolescents

Angélica Ochoa Avilés¹, Carl Lachat^{2,3}, Roos Verstraeten^{2,3}, Susana Andrade¹, Silvana Donoso¹,
Patrick Kolsteren^{2,3},

¹ Cuenca University, Cuenca, Ecuador

² Department of food safety and food quality, Gent University, Belgium

³ Nutrition and child health Unit, Institute of Tropical Medicine, Belgium

Background: Maintaining an appropriate physical activity (PA) level is important to prevent childhood obesity. Although most countries are affected by the obesity epidemic, there are few instruments which are developed to measure time spent on sedentary activity (SA) in low and middle income countries. Little research on PA has been conducted in children. The purpose of this study is to validate a tool to measure SA among children.

Objective: This study examined the validity of a PA diary to measure time spent on SA in Ecuadorian adolescents.

Setting: Convenience sample of n 302 adolescents attending schools in the rural (Nabón and Santa Isabel) and urban (Cuenca) area in Ecuador aged 11-15 years old.

Measurements: Test-retest reliability of time spent on SA was examined by comparing data from two administrations of the 15 minutes diary for seven consecutive days conducted three weeks apart. Activities were converted to MET values using the youth compendium of energy expenditure values. Criterion validity was determined by comparing data from the first PA diary administration with concurrent 1-minute ActiGraph accelerometer registrations. Time with counts < 100 was classified as SA.

Results: The mean age of the adolescents was 13.6±1.2 years. The prevalence of overweight and obesity was 15.9% and 7.0% respectively. The average time per day spent on SA as measured by the accelerometer, first and second diary registration 727.8 min±113.7, 426.9 min±145.1 and 476.2 min±147.0 respectively. The mean difference in time spent on SA between both diaries was -55.7 min [-92.3;-19.2]. This difference was -187.0 min [-212.5;-161.5] for the first diary and the accelerometer recordings.

Conclusions: A 15 min PA diary underestimates the duration of sedentary PA in Ecuadorian adolescents significantly compared to an accelerometer. New studies are needed to develop an accurate population based instrument to capture sedentary behaviour in this population.