

The challenge of measuring physical activity

ABSTRACT

Measuring physical activity accurately and reliably is essential when physical activity is either an intervention or an outcome measure. Measurement of physical activity in population groups has been undertaken in a number of ways, including self-report, observation, heart rate measurement and activity monitors. The strengths and weaknesses of each of these methods will be reviewed. The measurement of physical activity in children is an additional challenge and data from the recently completed pilot study of the *Kajian Aktiviti Fizikal dan Sukan Pelajar Sekolah Malaysia 2008 (KAFS08)* will be used to illustrate these complexities. Questionnaire and activity monitoring data were collected from 163 children attending four schools in Kuala Lumpur with an age range of 9-18 years. Three models of activity monitors were used (YAMAX SW-700, OMRON HJ113, ACTIGRAPH GT1M) and on completion of data collection, significant differences were found between pedometer steps recorded on each monitor, after allowing for age and gender differences. A subsequent study on the differences between the three monitors was undertaken involving over 15 individuals and over 40 days of measurement where one individual wore each of the three monitors for a full day. In addition, the accuracy of each monitor was determined by comparing the step count registered by the monitor with actual number of steps counted.