

Physical Activity and Cognitive Functioning Relationship in Children

Authors : Comfort Mokgothu

Abstract : This study investigated the relation between processing information and fitness level of active (fit) and sedentary (unfit) children drawn from rural and urban areas in Botswana. It was hypothesized that fit children would display faster simple reaction time (SRT), choice reaction times (CRT) and movement times (SMT). 60, third grade children (7.0 – 9.0 years) were initially selected and based upon fitness testing, 45 participated in the study (15 each of fit urban, unfit urban, fit rural). All children completed anthropometric measures, skinfold testing and submaximal cycle ergometer testing. The cognitive testing included SRT, CRT, SMT and Choice Movement Time (CMT) and memory sequence length. Results indicated that the rural fit group exhibited faster SMT than the urban fit and unfit groups. For CRT, both fit groups were faster than the unfit group. Collectively, the study shows that the relationship that exists between physical fitness and cognitive function amongst the elderly can tentatively be extended to the pediatric population. Physical fitness could be a factor in the speed at which we process information, including decision making, even in children.

Keywords : decision making, fitness, information processing, reaction time, cognition movement time

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