Developing a Korean Version of the Physical Activity Questionnaire for Older Children

J. G. Lee, J. C. Spence
University of Alberta, Edmonton, Alberta, CANADA
Y. G. Jeon
Yonsei University, Seoul, KOREA

A few standardized questionnaires are currently available for measuring physical activity among Korean children. The Physical Activity Questionnaire for Older Children (PAQ-C) has been supported as a valid and reliable measure of general physical activity levels among children. The purpose of this study was to test the reliability of a Korean translation of the PAQ-C. A convenience sample of 21 boys and 27 girls (ages 8-14, grades 3-9) was recruited from a Korean school and two Korean churches in Edmonton Alberta, Canada. To be included in the study, children needed to be able to read both Korean and English. Children were asked to complete both a Korean and English version of the questionnaire, one week apart. A significant test-retest correlation between the Korean and English versions of the PAQ-C was found ($r_{\text{total}} = 0.79$, $r_{\text{boys}} = 0.80$ and $r_{\text{girls}} = 0.78$). Statistically significant relationships existed between the two time points for all items on the questionnaires (ranging from $r = 0.51$ to 0.83, $p < 0.01$). In summary, the Korean version of the PAQ-C appears to be a reliable measure of physical activity. The results of this study will allow physical activity levels to be more accurately assessed among children in Korea.

Key Words: Exercise, Child, Questionnaire, Korea, Measurement
Introduction

Understanding and promoting physical activity in children are critical issues because physical activity habits developed in childhood are more likely to be maintained in adulthood (Harro & Riddoch, 2000). Physical activity is generally defined as "any bodily movement produced by skeletal muscles that result in energy expenditure" (Caspersen, Powell, & Christenson, 1985, p. 129). Children who are physically active have lower cardiovascular risk factors (e.g., coronary heart disease, blood pressure, and body fat) than less active children (Boreham & Riddoch, 2001; Strong et al, 2005). Regular physical activity in childhood develops healthy bones and muscles and helps reduce depression and anxiety (Biddle, Gorely, & Stensel, 2004). Physical activity is also associated with positive self-esteem, greater self-efficacy, and academic performance (Strauss, Rodzilsky, Burack, & Colin, 2001; Tremblay, Inman, & Willms, 2000). Finally, physical activity helps children maintain a healthy body weight and prevent overweight (Lemura & Maziekas, 2002; Roberts, 2000).

Although there are numerous benefits of regular physical activity, few studies have described physical activity levels of Korean children. The National Health Nutrition Survey (2005) revealed that 66.3% of Korean youth and children aged between 10 and 19 years were physically inactive (Korean Ministry of Health and Welfare, 2006). Only 3% engaged in more than 30 minutes of moderate physical activity 5 times a week, and 30.7% accumulated more than 20 minutes of vigorous physical activity 3 times a week. Using pedometers, An (2007) found that elementary school boys aged 10-13 years attained 15,748 ± 3817 steps daily and accumulated significantly higher steps/day during weekdays (19,370 ± 4,386) than weekends (12,125 ± 3,248). Lee and Kim (2007) also assessed the daily steps of elementary school children (grade 3 and 5) in rural Korea. The mean number of steps per day for children was 17,585 ± 5,051, and daily steps of boys (18,924 ± 6,083) were higher than that of girls (16,615 ± 3,988).

Researchers have suggested that accumulating 12,000 steps/day for girls and 15,000 steps/day for boys were associated with healthy weight (Tudor-Locke et al, 2004), and boys who accumulated 13,000 steps per day engaged in 60 minutes or more of moderate physical activity.