

### **Epidemiology**

*Daily Steps in Midlife and Older Adults: Relationship With Demographic, Self-Rated Health, and Self-Reported Physical Activity* (pp. 128–132)

Tamara Payn, Karin A. Pfeiffer, Brent Hutto, John E. Vena, Michael J. LaMonte, Steven N. Blair, and Steven P. Hooker

The relationship between average daily step counts and age, body mass index (BMI), self-reported physical activity (PA) level, and perceived health was determined in 85 middle-aged and older adults who wore a pedometer for 7 consecutive days. Average daily steps were significantly ( $p < .05$ ) correlated with BMI ( $r = -.26$ ), age ( $r = -.44$ ) and perceived health ( $r = .53$ ) but not with self-reported PA level ( $r = .19$ ). The adjusted percentage of participants classified as meeting the PA recommendation in  $\leq 5,000$ , 5,001–9,999, and  $\geq 10,000$  steps/day categories ranged from 53 to 61%. These findings support previous evidence in younger populations suggesting that the recommended minimal level of health-related PA may be achieved despite not accumulating 10,000 steps/day.

*A Prospective Study of Pedometer-Determined Physical Activity and Physical Self-Perceptions in Children* (pp. 133–140)

Charles F. Morgan, Susan Vincent Graser, and Robert Pangrazi

There have been limited prospective studies investigating physical activity and physical self-perceptions in children. In this investigation, mean steps/day did not significantly change from late elementary to junior high for either boys or girls; however, boys accumulated more steps both at baseline and follow-up. Physical self-perception measures were significantly related to changes in steps/day and accounted for 21% (15% adjusted) of the variance after controlling for demographic/biological variables,  $R^2$  change = .21, adjusted  $R^2$  change = .15,  $F(5, 88) = 4.66$ ,  $p < .001$ . Sport competence emerged as the most important predictor,  $t(88) = -3.76$ ,  $p < .001$ , and was inversely related to physical activity change. The lack of opportunities to participate in sport activities normally found at the onset of adolescence may help explain this unexpected result.

### **Measurement and Evaluation**

*Prevalence and Correlates of Physical Fitness Testing in U.S. Schools—2000* (pp. 141–148)

James R. Morrow, Jr., Janet E. Fulton, Nancy D. Brener, and Harold W. Kohl III

Because of the perceived lack of youth physical fitness and/or concerns for increased obesity, physical education teachers are interested in youth fitness and physical activity levels. Statewide mandates are being developed that require school-based teachers to complete physical fitness testing. Data from the nationally representative School Health Policies and Programs Study 2000 were analyzed to investigate the prevalence of fitness testing and the professional characteristics of fitness test users. Data were collected with teachers of either randomly selected classes in elementary schools and randomly selected required physical education courses in middle/junior high and senior high schools ( $N = 1,564$ ). The prevalence of fitness test use is 65% across all school levels. Variables associated with physical fitness test usage were professionally oriented. Results showed that teachers in secondary schools (odds ratio [OR] = 2.25, 95% confidence interval [CI] = 1.18–4.27), those with degrees in physical education/kinesiology-related disciplines (OR = 2.01, 95% CI = 1.11–3.63), and those who had completed staff development on physical fitness testing (OR = 3.22, 95% CI = 1.86–5.60) were more likely than respondents without these characteristics to engage in physical fitness testing. Results changed little when separate analyses were conducted for classes/courses in districts requiring versus not requiring fitness testing. Financial variables, including fitness-oriented facilities available, metropolitan location, and discretionary expenditures per student, were not associated with fitness test use. Results provided national prevalence of school-based physical fitness testing use in the U. S. and conveyed information about those who currently use physical fitness tests.

### **Motor Development**

*The Relationships Among Fundamental Motor Skills, Health-Related Physical Fitness, and Body Fatness in South Korean Adolescents With Mental Retardation* (pp. 149–157)

John T. Foley, Stephen Harvey, Hae-Ja Chun, and So-Yeun Kim

The purpose of this study was to examine the following: (a) the relationships among the latent constructs of fundamental motor skills (FMS), health-related physical fitness (HRF), and observed body fatness in South Korean adolescents with mental retardation (MR); (b) the indirect effect of fundamental motor skills on body fatness when mediated by health-related fitness; and (c) whether the degree of MR and gender affects these relationships. Students ages 13 to 18 years (287 boys and 134 girls) were recruited for the study. Separate structural equation models were estimated based on gender and the level of disability: mild or moderate MR. Group differences in the model structure were not found, so the data were combined and a single model estimated. The results showed that FMS significantly contributed to HRF (standardized effects  $\beta = .53$ ),  $p < .01$  and indirectly contributed to decreased body fatness mediated by HRF ( $-.27$ ),  $p < .01$ . HRF directly contributed to decreased fatness ( $-.50$ ),  $p < .01$ . The results from this study support the importance of both increased FMS and increased HRF in relation to decreased body fatness.

*Does Weight Status Influence Associations Between Children's Fundamental Movement Skills and Physical Activity?* (pp. 158–165)

Clare Hume, Anthony Okely, Sarah Bagley, Amanda Telford, Michael Booth, David Crawford, and Jo Salmon

This study sought to determine whether weight status influences the association among children's fundamental movement skills (FMS) and physical activity (PA). Two hundred forty-eight children ages 9–12 years participated. Proficiency in three object-control skills and two locomotor skills was examined. Accelerometers objectively assessed physical activity. Body mass index was calculated to determine weight status. Correlations between physical activity and FMS proficiency were evident among boys and girls. No significant interaction was apparent when examining FMS proficiency scores, PA variables, and weight status. Future studies should examine a broader range of skills and types of activities to better characterize this relationship and to inform the promotion of movement skill proficiency and PA.

*Lifestyle, Body Composition, and Physical Fitness Changes in Hungarian School Boys (1975–2005)* (pp. 166–173)

A. Photiou, J. H. Anning, J. Mészáros, I. Vajda, Z. Mészáros, Á. Sziva, A. Prókai, and N. Ng

General socioeconomic conditions as well as the physical environment have undergone remarkable changes in Hungary during the past 30 years. Unfortunately, these positive processes have resulted in a reduction of habitual physical activity along with unfavorable changes in dietary habits. Therefore, the purpose of the present study was to compare some selected morphological and functional parameters of 7–14-year-old Hungarian schoolboys living in the middle of the 1970s and at the beginning of the new millennium. It was hypothesized that there would be significant differences in morphological and functional characteristics of the Hungarian schoolboy populations, because they were assessed 30 years apart. Means of height, body mass, body mass index (BMI), the sum of five skinfold tests, percentage of body fat, and two running performance times (400 m and 1,200 m) of the boys ( $N = 3,672$ ) studied in 1975 were compared to those of the boys ( $N = 3,758$ ) in 2005. Data were analyzed using two-tailed independent samples  $t$  tests ( $p < .05$ ). We observed significant secular changes in body mass and height. In addition, boys in 2005 had significantly more subcutaneous fat compared to 1975. The running times for the two distances were significantly poorer at the time of the second investigation. The remarkable and unfavorable changes in body composition and cardiorespiratory performance were attributed to the continuously decreasing intensity of habitual physical exercise and a lifestyle that had become more sedentary (watching TV, playing computer games, etc.). Radical interventions are necessary to reduce these risks associated with the high prevalence of cardiovascular disease in Hungary, and the challenge to resolve the problem requires combined efforts at the educational, societal, corporate, and governmental levels.

*Gender Differences in Throwing Form of Children Ages 6–8 Years During a Throwing Game* (pp. 174–182)

Kevin M. Lorson and Jacqueline D. Goodway

The study purposes were to describe throwing form and gender differences before and after instruction during a game. Children's (ages 6–8,  $n = 105$ ) throwing form was assessed while they played a game (snowball) using the Body Component Assessment for Throwing in Games to determine the modal developmental levels for the step, trunk, and forearm components. Each student received four 30-min sessions of throwing instruction. There were significant ( $p < .017$ ) gender differences at each session and for each component. A Wilcoxon-Signed Ranks Test revealed differences ( $p < .017$ ) between pretest and after instruction for boys'

trunk and forearm components and girls' step and trunk components. The improvement after instruction and gender differences were similar to those found in a controlled, practice context.

### **Pedagogy**

*Validating the Youth Sport Enjoyment Construct in High School Physical Education* (pp. 183–194)

Hairul Hashim, J. Robert Grove, and Peter Whipp

The present study was undertaken to develop and validate a questionnaire measuring teaching processes related to physical education (PE) enjoyment. Scanlan and Lewthwaite's (1986) youth sport enjoyment model provided the theoretical foundation for this work. Content validity and item readability of the instrument were established by obtaining feedback from eight experts in psychology and four highly experienced secondary school teachers. Construct validity was then established by conducting exploratory and confirmatory factor analyses on data from 304 secondary school students (grades 8, 9, and 10). As a result of these analyses, six teaching processes related to PE enjoyment were identified: self-referent competency (four items), other-referent competency (four items), teacher-generated excitement (three items), activity-generated excitement (five items), peer interaction (two items), and parental encouragement (two items). Correlation analyses revealed that all of these processes were positively correlated with PE enjoyment. The weakest correlation was between peer interaction and enjoyment ( $r = .31, p < .05$ ), and the strongest was between activity-generated excitement and enjoyment ( $r = .83, p < .05$ ). We believe that the instrument is appropriate for studying affective outcomes within physical educational settings among students in grades 8, 9, and 10.

*Content Specificity of Expectancy Beliefs and Task Values in Elementary Physical Education* (pp. 195–208)

Ang Chen, Robert Martin, Catherine D. Ennis, and Haichun Sun

The curriculum may superimpose a content-specific context that mediates motivation (Bong, 2001). This study examined content specificity of the expectancy-value motivation in elementary school physical education. Students' expectancy beliefs and perceived task values from a cardiorespiratory fitness unit, a muscular fitness unit, and a traditional skill/game unit were analyzed using constant comparison coding procedures, multivariate analysis of variance,  $\chi^2$ , and correlation analyses. There was no difference in the intrinsic interest value among the three content conditions. Expectancy belief, attainment, and utility values were significantly higher for the cardiorespiratory fitness curriculum. Correlations differentiated among the expectancy-value components of the content conditions, providing further evidence of content specificity in the expectancy-value motivation process. The findings suggest that expectancy beliefs and task values should be incorporated in the theoretical platform for curriculum development based on the learning outcomes that can be specified with enhanced motivation effect.

*Helping Youth in Underserved Communities Envision Possible Futures: An Extension of the Teaching Personal and Social Responsibility Model* (pp. 209–221)

David Walsh

Empowering youth through the exploration of their possible futures is a fresh and innovative approach to the Teaching Personal and Social Responsibility model (TPSR). The purpose of this study was to examine the combination of TPSR with the theory of possible selves. This combination, called the Career Club, was a program specifically designed to better assist students in understanding and facilitating reflective discussions on their future decisions. Career Club was taught weekly for nine sessions, 90 min each, at an inner city elementary school in a large metropolitan city. Participants comprised 12 seventh- and eighth-grade boys and girls who had at least 1 year and up to 5 years of experience in a TPSR program. Data sources included document analysis, lesson observations, formal interviews, and observational field notes. Themes were classified into the following categories: hoped-for-selves and feared selves—a delicate balance, coaching as a necessary component, and coming to understand possible futures. These results indicated that Career Club was effective in providing the participants a meaningful career exploration in coaching. Data also suggested these coaching experiences facilitated reflective discussions on realizing their future orientation choices.

### **Psychology**

*Evidence for a Multidimensional Self-Efficacy for Exercise Scale* (pp. 222–234)

W. M. Rodgers, P. M. Wilson, C. R. Hall, S. N. Fraser, and T. C. Murray

This series of three studies considers the multidimensionality of exercise self-efficacy by examining the psychometric characteristics of an instrument designed to assess three behavioral subdomains: task,

scheduling, and coping. In Study 1, exploratory factor analysis revealed the expected factor structure in a sample of 395 students. Confirmatory factor analysis (CFA) confirmed these results in a second sample of 282 students. In Study 2, the generalizability of the factor structure was confirmed with CFA in a randomly selected sample of 470 community adults, and discriminant validity was supported by theoretically consistent distinctions among exercisers and nonexercisers. In Study 3, change in self-efficacy in conjunction with adoption of novel exercise was examined in a sample of 58 women over 12 weeks. Observed changes in the three self-efficacy domains appeared to be relatively independent. Together, the three studies support a multidimensional conceptualization of exercise self-efficacy that can be assessed and appears to be sensitive to change in exercise behavior.

*Examining the Relationship Between Purposeful Heading in Soccer and Computerized Neuropsychological Test Performance* (pp. 235–244)

Thomas W. Kaminski, Eric S. Cousino, and Joseph J. Glutting

The purpose of this study was to determine if a relationship exists between purposeful heading in soccer and neuropsychological test performance. Automated Neuropsychological Assessment Metrics throughput scores were derived on seven subset variables that measure a variety of neurocognitive abilities. Simple Spearman's rank correlations were calculated between headers per game (HPG) and the criterion variables. Interestingly, math processing speed (Spearman's  $\rho = .160$ ) and continuous performance test #2 ( $\rho = .124$ ) had small but significant correlations; both showed improvement in performance pre- to postseason. There were no significant correlations between HPG and the other five variables. This study found no detrimental relationship between the number of purposeful headers and the neurocognitive measures in this population.

*Creating Community, Assessing Need: Preparing for a Community Physical Activity Intervention* (pp. 245–255)

Diane E. Whaley and Philip P. Haley

This paper describes the preliminary steps needed to begin a community physical activity intervention in a rural context, including forming a community coalition and assessing values, beliefs, and knowledge about physical activity. A random mail survey ( $N = 171$ ) indicated relatively high activity rates, and perceived barriers consistent with the literature (time, program convenience, safety issues). Perceived benefits included improving/sustaining health and looking better/improving appearance. Five focus groups added additional barriers (e.g., physical isolation, lack of transportation). Residents were unaware of many existing services and indicated a desire for more walking trails, health-related activities, and low-cost exercise facilities. The discussion focuses on the importance of establishing a community coalition and implications for future program development and research.

## **Research Notes**

*Seasonality in Children's Pedometer-Measured Physical Activity Levels* (pp. 256–260)

Aaron Beighle, Brandon Alderman, Charles F. Morgan, and Guy Le Masurier

*Walkway Length Determination for Steady State Walking in Young and Older Adults* (pp. 261–267)

Pamela A. Macfarlane and Marilyn A. Looney

*Identifying the Critical Time Period for Information Extraction When Recognizing Sequences of Play* (pp. 268–273)

Jamie S. North and A. Mark Williams