

McCloy Lecture

Seeing Is Believing: Observing Physical Activity and Its Contexts (113–122)

Thomas L. McKenzie

Direct (systematic) observation has been a mainstay of my research for over three decades. I believe it is an important tool for assessing physical activity, because it can simultaneously provide contextually rich data on the setting in which the activity occurs. It is particularly useful for those interested in using ecological and cognitive-behavioral approaches to examine how physical and social environments influence physical activity, and it is currently the only method for assessing group physical activity in open environments. Because physical activity researchers use the method infrequently, this paper provides an overview of systematic observation as it applies to studying physical activity.

Special Topics

A Step in the Right Direction: Commentary on Expected Values for Pedometer-Determined Physical Activity in Youth (123–124)

Michael W. Beets

Response to: "A Step in the Right Direction: Commentary on Expected Values for Pedometer-Determined Physical Activity in Youth" (125–126)

Catrine Tudor-Locke, James J. McClain, Teresa L. Hart, Susan B. Sisson, and Tracy L. Washington

Biomechanics

Changes in Landing Mechanics After Cold-Water Immersion (127–132)

He Wang, Michael M. Toner, Thomas J. Lemonda, and Mor Zohar

The purpose of this study was to investigate the influence of cold-water immersion on kinematics and kinetics during a drop-landing task. On four separate occasions, 9 men performed drop-landings from a 0.6-m platform to a force platform following 30-min immersion to the hip-joint in thermoneutral water (control; 34 °C) and in cold water (20 °C) to the ankle (low level), knee (medium level), and hip (high level) joints. Sagittal plane kinematics and kinetics were determined. One-way repeated measures multivariate analysis of variance was used for statistical analysis. Compared to the control, the low-level condition had similar joint mechanics, the medium level showed 26% less ankle mechanical work ($p = .003$), and the high level showed 9% less vertical ground reaction force ($p = .025$) and 23% less ankle mechanical work ($p = .023$) with 18% greater trunk flexion ($p = .024$). In summary, the low-level cold-water immersion had no effect on landing mechanics. The medium- and high-level cold-water immersion resulted in a reduction in impact absorption at the ankle joint during landing. The increased trunk flexion after high-level immersion helped *dissipate landing impact*.

Epidemiology

Patterns of Children's Participation in Unorganized Physical Activity (133–142)

Leanne C. Findlay, Rochelle E. Garner, and Dafna E. Kohen

Children's leisure-time or unorganized physical activity is associated with positive physical and mental health, yet there is little information available on tracking and predicting participation throughout the childhood and adolescent years. The purpose of the current study was to explore patterns of unorganized physical activity participation of children ages 4 through 17 years. Longitudinal data from the Canadian National Longitudinal Survey of Children and Youth were analyzed using semiparametric group-based trajectory modeling. Participation in unorganized physical activity was best represented by two trajectory groups for boys ($n = 4,476$) and girls ($n = 4,502$). For boys, these groups were labeled regular participation and infrequent participation. For girls, there was also a regular group and a second group that reflected infrequent and decreasing participation throughout childhood and adolescence. A higher educational level for parents and having two parents in the home predicted regular participation for boys. For girls, none of the examined variables were significant predictors. The results suggest that boys have a relatively stable pattern of unorganized physical activity throughout childhood and adolescence; however, for some girls, participation declines in adolescence.

Measurement and Evaluation

Percentile Values for Running Sprint Field Tests in Children Ages 6–17 Years: Influence of Weight Status (143–151)
Jose Castro-Piñero, José Luís González-Montesinos, Xiaofen D. Keating, Jesús Mora, Michael Sjöström, and Jonatan R. Ruiz

The aim of this study was to provide percentile values for six different sprint tests in 2,708 Spanish children (1,234 girls) ages 6–17.9 years. We also examined the influence of weight status on sprint performance across age groups, with a focus on underweight and obese groups. We used the 20-m, 30-m, and 50-m running sprint standing start and running start tests to assess sprint performance. We calculated body mass index (BMI) using and categorized participants according to the BMI international cut-off for underweight, normal weight, overweight, and obese. Boys had significantly better scores than girls in all tests, except for the 30-m running sprint standing start and running start tests in the 6–7-year-old group. The underweight group had significantly better scores than their obese counterparts, whereas there were similar levels between underweight and normal weight individuals. The normal weight group showed a significantly better performance than their overweight and obese counterparts. Overweight boys had significantly better performance than their obese counterparts. In conclusion, the percentiles values of six running tests varied by age and gender. The findings indicated that underweight youth did not have poorer sprint performance, and the obese group had *lower scores than their leaner counterparts*.

Movement Coordination in Ball Catching: Comparison Between Boys With and Without Developmental Coordination Disorder (152–161)

Eryk P. Przysucha and Brian K. V. Maraj

This investigation examined the catching coordination of 12 boys (M age = 9.9 years, SD = .8) with and without Developmental Coordination Disorder (DCD; M age = 10.5 years, SD = .8), under different task constraints. Participants attempted a total of 60 catches in central and lateral locations, under blocked and randomized conditions. No effect of randomization was found for the number of balls caught, but a significant Group \times Location interaction effect ($p < .0001$) showed that typically developing boys had nearly perfect scores. Boys with DCD caught more balls in central (73%) than lateral trials (47%). During the latter, grasping and positional errors were also evident. Due to pronounced functional difficulties in the lateral trials, and coinciding differences in the arm and leg actions, it was concluded that intersegmental coordination constituted the organizational limits for boys with DCD.

Gender Differences in Motor Skill Proficiency From Childhood to Adolescence: A Longitudinal Study (162–170)

Lisa M. Barnett, Eric van Beurden, Philip J. Morgan, Lyndon O. Brooks, and John R. Beard

Students' proficiency in three object control and three locomotor skills were assessed in 2000 (M age = 10.06 years, SD = 0.63) in New South Wales, Australia and in 2006–07 (M age = 16.44 years, SD = 0.64). In 2006–07, 266 students, 138 girls (51.9%) and 128 boys (48.1%), had at least one skill reassessed. Boys were more object control proficient than girls. Childhood object control proficiency significantly predicted ($p = .001$) adolescent object control proficiency ($r^2 = .39$), and, while gender was significant ($p = .001$), it did not affect the relationship between these variables ($p = .53$). Because childhood object control proficiency is predictive of subsequent object control proficiency, developing skills in childhood is important.

Motor Behavior

The Effects of Repeated Retention Tests Can Benefit as Well as Degrade Timing Performance (171–179)

Jeffrey T. Fairbrother and Joao Augusto de Camargo Barros

In this study, we examined the effects of interference and repeated retention tests by comparing groups that performed (a) one or two tests, or (b) two tests separated by interpolated tasks. The task involved pressing five keys in 925 ms. Constant error increased after Block 1 of the second test for the group completing the interpolated tasks. Variable error decreased across retention tests and was smaller for the two-test groups compared to the one-test control. Results differed from previous reports of degraded timing accuracy (Magnuson, Shea, & Fairbrother, 2004), suggesting the present results may have been related to highly accurate performance during the first retention test that reflected successful initial encoding of task information.

Pedagogy

Changes in K–12 Physical Education Programs From 2001 to 2006 (180–188)

Xiaofen D. Keating, Dolly Lambdin, Louis Harrison, Jr., and Brian Dauenhauer

In this study, we investigated the changes in physical education programs from 2001 to 2006 based on an analysis of data reported in *The Shape of the Nation Report: Status of Physical Education in the USA* (National Association for Sport and Physical Education, 2006). Means and standard deviations for numeric variables in the reports were computed, and percentages were calculated for the categorical variables. The data indicated a significant increase from 2001 to 2006 in establishing state physical education standards. Mandated class size at all educational levels and required physical education units for high school graduation remained the same. The requirement for physical education assessment and mandated fitness testing did not increase significantly. Furthermore, there was no significant improvement in state regulations.

Preservice Teachers' Belief Systems Toward Curricular Outcomes for Physical Education (189–198)

Pamela Hodges Kulinna, Timothy Brusseau, Matthew Ferry, and Donetta Cothran

This study was grounded in the belief systems and physical activity literature and investigated preservice teachers' belief systems toward curricular outcomes for physical education programs. Preservice teachers ($N = 486$; men = 62%, women = 38%) from 18 U.S. colleges/universities shared their beliefs about curricular outcomes. Preservice teachers completed a previously validated belief systems instrument designed to measure the relative importance of four outcome goals for programs (physical activity/fitness, self-actualization, motor skill development, and social development). Internal consistency reliability for the instrument was .98. A confirmatory factor analysis demonstrated a good fit of the current sample to the hypothesized outcomes model. Multivariate analysis of variance results revealed a significant interaction in outcome preservice teachers' priorities for year in school by region. The teachers' views also differed on the important outcome goals for physical education. Two critical "tensions" are discussed: (a) the need to examine more fully the consistency of preservice teacher/teacher belief systems, and (b) implications for teacher education and professional development programming. It is important to heed prospective teachers' voices and address their belief systems in teacher education programs.

Psychology

Variations in the Perceptions of Peer and Coach Motivational Climate (199–211)

Spiridoula Vazou

This study examined (a) variations in the perceptions of peer- and coach-generated motivational climate within and between teams and (b) individual- and group-level factors that can account for these variations. Participants were 483 athletes between 12 and 16 years old. The results showed that perceptions of both peer- and coach-generated climate varied as a function of group-level variables, namely team success, coach's gender (except for peer ego-involving climate), and team type (only for coach ego-involving climate). Perceptions of peer- and coach-generated climate also varied as a function of individual-level variables, namely athletes' task and ego orientations, gender, and age (only for coach task-involving and peer ego-involving climate). Moreover, within-team variations in perceptions of peer- and coach-generated climate as a function of task and ego orientation levels were identified. Identifying and controlling the factors that influence perceptions of peer- and coach-generated climate may be important in strengthening task-involving motivational cues.

Sociocultural Foundations

Keeping the Body in Play: Pain, Injury, and Socialization in Male Rugby (212–223)

Lindsay T. Fenton and Robert Pitter

This paper discusses participant observation studies of two rugby seasons—one rural high school and one university club—in which one author served as a first aid provider and student athletic trainer, respectively. Through analysis using triangulation, we explored how the rules, athlete's status, and return-to-play boundary influenced decisions when the athlete was in pain and/or injured. The results varied between the groups, suggesting a need for further research on behavioral patterns of high school and university athletes. This study effectively illustrates how social pressure and an athlete's socialization affect individual responses to pain and/or injury and how both pressure an athlete to learn to physically tolerate increasing amounts of pain.

Career Changes Among Physical Educators: Searching for New Goals or Escaping a Heavy Task Load? (224–232)

Ivan Bizet, Louis Laurencelle, Jean Lemoyne, Richard Larouche, and François Trudeau

Physical educators experience several occupational constraints and a high risk of physical injury associated with a high attrition rate. Our investigation aimed at identifying the principal career reorientation factors among physical educators and reasons for their career changes. This research used semistructured interviews ($n = 53$) that were analyzed qualitatively and quantitatively. While younger teachers frequently invoked job precariousness, the more experienced teachers and those who made a transition toward other teaching functions put more emphasis on teaching problems, work conditions, and physical context. Those who transferred toward administrative duties insisted on their desire for a new challenge. Our study indicates that career reorientation is most often associated with job precariousness and the pursuit of new challenges, respectively, for younger and older physical educators.

Research Notes

The Effect of Glycerol Ingestion on Performance During Simulated Multisport Activity (233–238)

Christopher Knight, Andrea Braakhuis, and Carl Paton

Relations of Transtheoretical Model Stage, Self-Efficacy, and Voluntary Physical Activity in African American Preadolescents (239–244)

James J. Annesi, Avery D. Faigenbaum, and Wayne L. Westcott