



COMPLIANCE WITH PHYSICAL ACTIVITY GUIDELINES AND ASSOCIATIONS WITH PHYSICAL LITERACY AMONG FUTURE PHYSICAL EDUCATORS

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Abstract

PURPOSE: To examine the relationship between pre-professional physical educators meeting the U.S. Physical Activity Guidelines and steps per week and physical literacy. METHODS: Twenty-five physical education teacher education (PETE) undergraduate majors (19 males, 6 females, aged 19-24 years) participated in assessments of Physical Literacy using the Canadian Assessment of Physical Literacy and wore GTX3+ accelerometers on their waist for a week. Friedman 1998 cut-points were used for determining moderate-to-vigorous physical activity (MVPA). Descriptive statistics were calculated for all variables. Correlations were calculated to examine the relationships between measured MVPA, measured steps, Physical Literacy, self-reported PA and sedentary time, and physical competence. RESULTS: 16% were compliant with MVPA guidelines, 4% were compliant with both MVPA and 10,000 steps recommendations, 56% met MVPA but were considered low active steps, and 24% did not meet any recommendations. Participants' physical literacy consisted below that of a patient (12-year old). Significant relationships existed between self-reported MVPA and Physical Literacy (r = .40, p < .05). These findings suggest that while PETE students may meet the minimum guidelines for physical activity, more work needs to be done to address their Physical Literacy.

Background and Rationale

2018 U.S. Physical Activity Recommendations stipulate adults should participate in a minimum of 150 minutes of moderate aerobic activity, or 75 minutes of vigorous aerobic activity, or an equivalent combination of both. (Pewey et al., 2018)
These guidelines directly translate to 3,000 – 4,000 steps per day. Allowing for step categories to be developed. (Tudor-Locke et al., 2009)

Physical literacy is described as the ability to move with competence and confidence in a wide variety of physical activities in multiple environments that benefit the healthy development of the whole person. (SHAPE America 2014)

Purpose

To examine the relationship between pre-professional physical educators meeting the U.S. Physical Activity Guidelines and steps per week and physical literacy.

Methods

Participants:

Twenty-five physical education teacher education (PETE) undergraduate majors (19 males, 6 females, aged 19-24 years).

Measures:

Physical Literacy – Based on the Canadian Assessment of Physical Literacy (CAPL-1) first edition. Physical literacy is made up of four sections with associated points. Maximum score possible for physical literacy is 100.

Physical Competence – 32 points

- Body composition - Height, Weight, and Waist Circumference were all assessed in duplicate according to standard procedures (Molina, 1995).
Aerobic Capacity - Assessed using 20 meter Progressive aerobic Cardiovascular Endurance Run (PACER) and obstacle course.
Musculoskeletal fitness - Muscular strength was assessed by measuring grip strength. Muscular endurance was assessed by plank.
Flexibility - The sit-and-reach test was used to measure flexibility of the lower back and hamstring muscles.

Knowledge and Understanding – 18 points

- 10 Specific questions from the questionnaire

Motivation and Confidence – 18 points

- CAPL assesses the knowledge about physical activity, sedentary behavior, physical fitness, and safety during activity.
Motivation and Confidence in this study is comprised of the PSPP and other questions from the CAPL.
Scores were adjusted in order to compare to CAPL normative values.

Methods Cont.

- Daily Behavior – 32 points
Average daily steps with accelerometer
Self-reported sedentary time
Self-reported days engaged in 60 minutes of MVPA
Physical Activity
Participants wore ActiGraph GTX3+ accelerometers (Pensacola, FL) on their waist for a minimum of 7 days. Data was used to determine step counts and moderate to vigorous physical activity
Seven questions in the CAPL ask about sedentary time and physical activity. These questions were used to determine self-reported physical activity.

- Data Analysis
Descriptive statistics were calculated for all variables.
Relationships between physical literacy, physical activity, and self-reported physical activity were examined via correlation.

Results

Table 1. Descriptive Statistics

Table with 3 columns: Variable, Mean, Standard Deviation. Rows include Age, BMI, Self-Reported MVPA, Average MVPA, Average Steps, Physical Competence, and Physical Literacy.

The table above details descriptive statistics for selected variables. Self-reported MVPA was determined using the following question from CAPL: "During the past week (7 days), on how many days were you physically active for a total of at least 60 minutes per day? (all the time you spent in activities that increased your heart rate and made you breathe hard)"

Table 2. Meeting Recommendations

Table with 3 columns: Variable, Frequency, Percentage. Rows include Meets MVPA only, Meets MVPA and 10,000 steps, Meets MVPA and low active steps, Does not meet any recommendations.

Meeting the recommendations for MVPA – 150 minutes of moderate, or 75 minutes of vigorous, or an equivalent combination of both
10,000 steps is at the active cut-point according to Tudor-Locke et al. (2009)
Low Active – 5000 – 7499 steps per day

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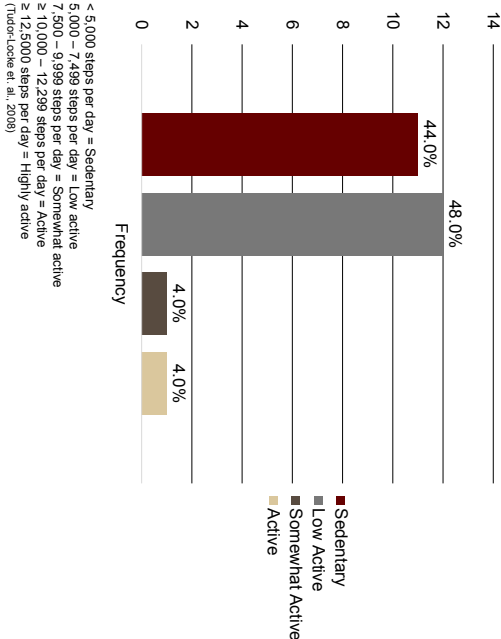
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Results Cont.

Table 3. Correlation Matrix

Table with 3 columns: Physical Literacy, Physical Competence Domain, Self-reported MVPA. Values are 0, 0.886**, and 0.419*.

Figure 1. Step Classification



Conclusions

To meet the MVPA recommendations, children should have at least 9,000 steps per day (Adams et al., 2013)
A study of lower Mississippi Delta, indicated at least 8,300-9,100 steps per day to meet the MVPA recommendations for adults. (Harrington et al., 2010)
Findings of current study indicate PETE students may meet the minimum guidelines for physical activity, more work needs to be done to address their Physical Literacy
Physical education teachers serve as role models to students for physical activity levels and other health aspects. (Whent et al., 2016; Cardinal & Cardinal, 2007)