Physical Education

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“Improving School Policies and Settings to Increase Physical Activity”

Web Forum, Public Health Institute and Active Living Research
March 28, 20012
Topics

1. Importance of PE in promoting physical activity
2. Limitations of current PE
3. Evidence-based PE
4. HOPE for the future
Distinctions

- Physical activity (a process)
- Physical fitness (an outcome)
- Physical education (a program of study)
Recommended Amounts of PA for Children and Adolescents

“60 minutes or more of PA daily”

- most as moderate- or vigorous-intensity, and include vigorous at least 3 days a week
- include muscle-strengthening at least 3 days/week
- include bone-strengthening at least 3 days/week
Why Schools?

- Major public resource
- Available in all communities
- Most children go there:
  - 6 hours a day
  - 5 days a week
  - 36 weeks a year
  - 12 years
Why PE?
- Only required PA program for children
- Only source for learning movement and sport skills

Especially important for:

- Those at risk for cardiovascular disease, diabetes, obesity, osteoporosis
- The poor & those living in disadvantaged communities
- Females
- Persons of color
Physical Activity Promotion Interventions: Evidence of Effectiveness

- 5 strongly recommended interventions
  - School-based PE
  - Individually-adapted behavior change programs
  - Creating/enhancing places to be active
  - Community-wide campaigns
  - Social support interventions in community

Recommended Amounts of Physical Education

- Elementary: at least 150 minutes/week
- Middle/high: at least 225 minutes/week
- Others support NASPE recommendations (e.g., CDC)
School Physical Education

- Mandated in nearly all 50 states
- Some occurs in most schools
- Important component of coordinated school health programs

**SHPPS 2006**

Schools requiring Daily PE
- 3.8% elementary schools
- 7.9% middle schools
- 2.1% high schools
Using the word “Standards” is fashionable

A physically educated person:

Standard 1: Demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities.

Standard 2: Demonstrates understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performance of physical activities.

Standard 3: Participates regularly in physical activity.

Standard 4: Achieves and maintains a health-enhancing level of physical fitness.

Standard 5: Exhibits responsible personal and social behavior that respects self and others in physical activity settings.

Standard 6: Values physical activity for health, enjoyment, challenge, self-expression, and/or social interaction.
School Physical Education: The Pill Not Taken

Abstract: Physical education programs in schools have the potential to promote healthy, active lifestyles by providing children with some of their recommended physical activity, increasing their physical fitness levels, and teaching them fundamental movement and behavioral skills. If “exercise is medicine,” physical education is the pill not taken. Numerous barriers, including limited curriculum time allocations, low subject status, and inadequate resources hinder physical education from playing a major role in providing and promoting physical activity. This article profiles physical education as it relates to physical activity, describes its current status from both historical and conceptual standpoints, and concludes with recommendations for improving it.

Keywords: physical activity, exercise, child, youth, school, physical fitness

Sedentary living has been identified as a public health problem around the world, and its costs and consequences are enormous and growing. Although much more is known about the health benefits of physical activity in adults than in youth, physical activity during childhood and adolescence rarely reaches adulthood, and there are some immediate benefits. For example, children's habitual physical activity is positively associated with most health-related fitness components, and increases in physical activity and fitness are related to improved measures of health. In addition, reviews of the scientific literature indicate that physical activity reduces the risk of cardiovascular disease, overweight, and type 2 diabetes, and vigorous activity helps increase the strength and density of bones. Improvements in flexibility, muscular strength, and bone health not only advance movement and sport-related performances but are also thought to be related to reduced back pain and fractures in adulthood. Vigorous physical activity may also help improve psychological health and mood and can assist in reducing blood pressure and increasing high-density lipoprotein (HDL)-cholesterol among high-risk youth.

Despite the many documented benefits of physical activity, numerous reports suggest that all segments of the population, including children and youths, do not engage in sufficient activity for health purposes. One study indicated that 61.5% of 9- to 13-year-old children did not participate in any organized physical activity during nonschool hours, and 23.6% did not engage in any leisure-time physical activity. An expert panel recently recommended that children and youths participate in 60 min or more minutes per day of physical activity that is developmentally appropriate, is enjoyable, and involves a variety of activities. This 60-minute per day goal is also reflected in the Dietary Guidelines for Americans, 2005. Both reports suggest that recommended activity can be accumulated throughout the day and in various settings.

For 12 years, children spend a significant proportion of their waking day in school, and over time, experience at schools affects nearly the entire population. For these reasons, schools have an enormous role to play in the effort to increase physical activity. The World Health Organization suggests that schools are one of the most cost-effective investments a state or nation can make to improve education and health simultaneously. Numerous agencies and organizations support the involvement of the schools in physical activity and its promotion, including the American Heart Association, American Academy of Pediatrics, Center for Disease Control and Prevention, and the US Department of Health and Human Services.

In addition, Healthy People 2010 Health Objectives for the Nation includes strong support for the promotion of physical activity in schools, both within and outside of physical education (PE) classes. However, in the context of increased global concern about physical inactivity, most school programs engender sedentary behavior, and the prevalence of physical activity–producing programs, including physical education, is decreasing.
“If Exercise is Medicine, PE is the Pill Not Taken”

Lack of regulation (policy, accountability)

- Dosage (frequency, duration, intensity)
- Prescriber (training)
- Content (appropriateness, sound)
- Delivery (palatable)

Percent of Lessons Cancelled (1999-2006)

Percent Cancelled*  
*Of lessons scheduled for observation
How much MVPA do PE classes provide?

The Goal = 50%
(HP 2010; 22-10)

The Usual = 36%

CATCH and NICHD baselines = 36% MVPA
(900 schools, third grade; McKenzie 1995, Nader, 2003)

TAAG Baseline = 37% MVPA
(36 middle schools, 6 states, McKenzie et al, MSSE, 2006)
Class Size & Activity Levels

- Students less active in larger classes
- They spend:
  - More time Sitting ($p<.002$)
  - Less time Walking ($p<.001$)
  - Less time Vigorously Active ($p<.001$)

(McKenzie et al., 2000, RQES)
At all levels, children are inequitably served in terms of PE access and quality.

Research has shown:
- PE requirements vary in frequency, length, number weeks/year
- Range minutes
  - Between schools = 120-300 minutes
  - Within same school & grade level (sixth) = 120-260 minutes
- Actual PE time = 78% of scheduled time, irrespective of cancelled classes & absenteeism

MVPA range during PE lessons = 24-53% of actual length
Future of Physical Education

“…..will depend on its ability to provide programs perceived to be of public importance.”

T. McKenzie (2011)
HOPE is

- Not just about current engagement in physical activity
HOPE *is* about

- Active PE and physical activity promotion
  - Good health is a natural byproduct of active PE

*Thus, health is optimized!*
Why Prioritize Physical Activity?

- Children can’t become physically skilled or fit without being active
- PE - only subject matter to engage children in and promote physical activity
- Extensive support for active PE from outside the profession
Why Prioritize Physical Activity (2):

- All curricular areas have responsibility for children developing:
  - personal attributes (self-worth, efficacy, values)
  - citizenship skills (cooperation)
Health-Optimizing Physical Education (HOPE)

- Provides students with a proportion of the recommended amounts of physical activity
- Prepares students for an active lifestyle that continues into adulthood

Physical skills
Physical fitness
Behavioral skills
Enjoyment of physical activity
Evidence-Based PE (EBPE)

• EBPE programs have been developed:
  • -provide research base for improving health-related behavior outcomes **
  • -these are identified by CDC and National Cancer Institute

- CATCH PE (http://www.sph.uth.tmc.edu/catch/curriculum_pe.htm)

- Planet Health (http://www.hsph.harvard.edu/prc/proj_planet.html)

- SPARK (http://www.sparkpe.org)

**Implementation of EBPE curricula has been shown to increase PA by as much as 18% without increasing frequency or duration of lessons
Evidence-Based Physical Education

- Controlled research trials
- Peer reviewed dissemination
  - Adiposity (Sallis et al., 1993)
  - Physical fitness (Sallis et al., 1997)
  - Skill (McKenzie et al., 1994)
  - Lesson context & teacher behavior (McKenzie et al., 1997; 2004)
  - Enjoyment of PE (McKenzie et al., 1994)
  - Activity levels outside of school (Marcoux et al., 1999)
  - Scores on academic tests (Sallis et al., 1999)
School Adoption of Evidence-Based Physical Education (EBPE) Programs

- Widespread school adoption of EBPE has not occurred
- We studied facilitators and barriers to elementary school adoption of EBPE
  - 154 schools from 34 states
  - Principals and PE teachers completed questionnaires
Barriers to Adopting EBPE

(Lounsbery, McKenzie, et al., 2011, JPAH)

Principals & PE teachers; 154 schools in 34 states

- High satisfaction with current PE programs
- Lack of program evaluation
- Limited accountability for PE programs
- Principals not fully aware of PE in their school
  - not motivated to change it without outside accountability
- **Principals most powerful regarding conduct of PE!**
Reported Use of a Specific PE Curriculum

Data from 154 elementary schools from 34 states (Lounsbery, McKenzie, Trost & Smith, 2011).
SCHOOL-BASED PHYSICAL EDUCATION

Working with Schools to Increase Physical Activity Among Children and Adolescents in Physical Education Classes

AN ACTION GUIDE

Partnership for Prevention
Shaping Policies • Improving Health
School Health Guidelines to Promote Healthy Eating and Physical Activity
Closure

- Sedentary living--global public health concern
- Schools in position as most cost effective resource of PA promotion
- PE is the only required PA program, but has muddled mission
Promising Measures to Improve PE

Require:

- Specific number of minutes and days it should be provided
- Adoption of evidence-based programs
- Programs be evaluated
- Ongoing PE teacher professional development
- Administrator licensure include information on school PA programs
- Student-to-teacher ratios be similar to other subjects
- Eliminate waivers
Help guarantee that Physical Education:

1. Is scheduled regularly & the schedule is followed
2. Uses an activity-based curriculum
3. Is evaluated regularly
   - physical activity, fitness, skills, fun
Links to Videos Promoting Physical Education

"Making the Most of Physical Education"
http://www.youtube.com/watch?v=VVkGGXb0LgU
(M. Lounsbery & T. McKenzie, writers/producers; September, 2011).
(On Active Living Research website) (4:30 minutes).

“Childhood Obesity: Quality Physical Education as a Solution”
http://www.youtube.com/user/sparksandiego#p/u/6/-FOPaJqjCM0
(From sparksandiego; May 4, 2011) (7:22 minutes).