



## ***Niche to Norm***

*Evidence to guide school  
PE policy*

# *Physical Education Course Substitutions: Are They Comparable?*



VS



Monica A. F. Lounsbery<sup>1</sup>, Katherine Holt<sup>1</sup>, Thomas L. McKenzie<sup>2</sup>, & Shannon Monnat<sup>3</sup>

<sup>1</sup>University of Nevada, Las Vegas;

<sup>2</sup>San Diego State University

<sup>3</sup>Pennsylvania State University

# Background

- PE is an evidence-based strategy for providing and promoting physical activity (PA)
  - yet, alternative programs are commonly substituted for PE (2012 Shape of the Nation Report)
- Course Substitutions
  - Sanctioned alternative courses or experiences that fulfill required PE enrollment



JROTC  
18 states



Interscholastic Sports  
18 states



Cheerleading  
11 states



Marching Band  
13 states

# Bases for course substitutions

- No clear criteria
- Substitutions appear to be related to assumptions about similar provisions of PA
- Sanctioned course substitutions appear to have permanent status

# Junior Reserve Officer Training

- In 2007 in 3360 schools; plans to expand to 3700 by Year 2020



# How do JROTC and PE Compare?



## PE Goals

Physical Activity  
Physical Fitness  
Physical Skills  
Movement Concepts  
Social & Emotional  
Development

## JROTC Goals



# Purpose

- To compare student physical activity and lesson contexts during high school PE and JROTC sessions.

# Methods

- SOFIT (System for Observing Fitness Instruction Time) was used to assess 38 PE and 38 JROTC lessons in 4 high schools that provided both programs.
- Two PE and two JROTC teacher's classes were observed in each school for 4-5 days (n=8 PE teachers, 8 JROTC teachers)
- Data were analyzed using t-tests, negative binomial regression (incident rate), and logistic regression to examine the odds of meeting MVPA 50% of the class time.

# Results

*Mean Percent Time for Student Physical Activity and Lesson Contexts during JROTC and PE Lessons (N=76)*

Outcome	JROTC N=38 M (SD)	PE N=38 M (SD)	t-value
<b>Activity Levels</b>			
Sedentary%	77.2 (19.7)	39.3 (18.6)	8.64***
Vigorous %	4.0 (7.8)	11.3 (6.1)	-4.56***
Walking %	18.8 (14.9)	49.4 (17.4)	-8.23***
<b>Lesson Context</b>			
Knowledge %	38.3 (28.3)	5.9 (15.3)	6.20***
Fitness %	8.7 (18.3)	20.3 (26.0)	-2.25*
Skill %	13.3 (18.1)	2.9 (11.2)	3.02**
Game Play %	4.7 (12.7)	30.1 (32.2)	-4.52***

\*p<.05, \*\*p<.01, \*\*\*p<.001

# Results

*Unadjusted Incidence Ratios Predicting Association between Lesson Type and Rate for Each Variable (ref=JROTC Lessons)*



Outcome	Estimate	95% Confidence Limits
<b>Student Physical Activity</b>		
Sedentary Behavior	0.511 <sup>***</sup>	0.433-0.603
MVPA	2.669 <sup>***</sup>	1.978-3.602
<b>Lesson Context</b>		
Knowledge	0.160 <sup>***</sup>	0.088-0.290
Skill	0.216 <sup>*</sup>	0.054-0.861
Game	6.401 <sup>**</sup>	1.800-22.767

\*p<.05, \*\*p<.01, \*\*\*p<.001

# Results (continued)

- PE lessons had significantly greater odds of students meeting 50% of class time in MVPA

(OR=37.6;  $p < .001$ ; 95% CI: 9.31-151.86)





# Discussion

- JROTC and PE are very different in both content and the level of activity they provide
  - Compared to JROTC, PE had **37 times greater odds of engaging students in MVPA 50% of class time**
- Waivers and substitutions for PE are common; more studies that examine PA and content similarities are needed
  - School PE: The Pill not Taken



McKenzie, T. L., & Lounsbery, M. A. F. (2009). School physical education: The pill not taken. *American Journal of Lifestyle Medicine*, 3(3), 219-225. **Reprinted in *CAHPERD Journal*, 2009,7(4), 30-35.**

# Policy Considerations

- Prior to being accepted as a substitute for PE, **programs should be evaluated**—
  - Should provide similar physical activity; increase physical fitness and movement skills
- Approval should be given only for a specified period of time (e.g., 5 years) opportunity for renewal
- Periodically audited



# Thank you!



## Healthy, Happy, Physically Active Kids!

Presentation based on:

Lounsbery, M. A., Holt, K, Monnat, S., & McKenzie, T. L. & Funk, B. (2014, accepted Jan 25). JROTC as a substitute for PE: Really? *Research Quarterly for Exercise and Sport*.

Monica A.F. Lounsbery, Ph.D.  
Monica.lounsbery@unlv.edu