Knowledge of Exercise Principles in a Diverse Sample of Adults

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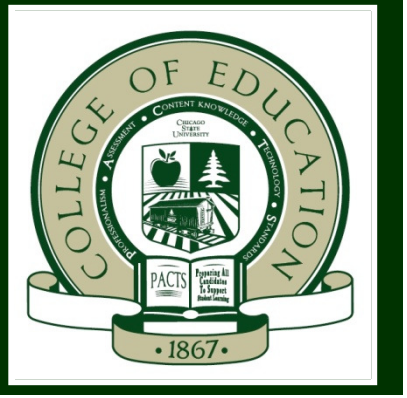


Background

- In 2009, approximately 2.4 million more adults were obese than in 2007 (CDC, 2010).
- Disproportionate prevalence in Hispanics and African-Americans.
- Medical costs rose to approximately $147 billion in 2008 (Finkelstein et al., 2009).
- Questions of why obesity continues to occur and why the prevalence continues to rise.

Obesogenic Environment

- Factors in the environment that contribute to poor nutrition and a sedentary lifestyle.
  - Reduction in daily PE and recess
  - No (PE) waiver police
  - Quality of PE
  - Technology
  - Reduced safety in neighborhoods
  - Cheap, unhealthy food
  - Food deserts

Quality and Quantity of PE

- Increased focus on core academics has reduced the quantity of PE
- Impact on PE of reduced funding to education in general
- Students in urban schools at a greater disadvantage?
  - Provided fewer opportunities to learn about and to develop health habits

PE in an Urban Environment

- Poor and minority students dominate urban schools (Council of the Great City Schools, 2011).
  - 70% of all teachers in these settings are White, middle-aged, and female (Nuby & Doebler, 2000), as well as more likely to be lacking in experience (Clotfelter et al., 2005; Lankford et al., 2002).
- Reduced funding for professional development (Ward & O'Sullivan, 2006).
  - Aware of latest research and NASPE standards?

PE in an Urban Environment

- Culture of basketball, lack of relevance (McCaughtry et al., 2006).
- Lower test scores = more time in academics = less time in PE.
- Overcrowding and job satisfaction (Reese & Johnson, 1988).
- Poor funding for PE = less equipment and more students (Fardy et al., 2004).

Purpose

- To assess whether a lack of knowledge or understanding of basic physical activity (PA) principles is a factor in the development of obesity, particularly in certain populations.

Methods

- Participants (N=305*) were recruited from large and small metropolitan areas.
- Completed an online survey with questions garnered from health and wellness textbooks related to PA/exercise.
  - Also completed demographics questions
- Students were emailed a link to the survey; informed consent was provided by the student clicking the link.

Participant Characteristics

- Average age = 26.6 years
- 133 African-Americans
- 92 males
- 213 non-PE majors
  - Wide range of majors
- 119 City of Chicago high school graduates

Cognitive Measure

- 41 questions total
- Multiple choice and true/false questions from health textbooks
- Additional questions related to exercise myths
  - e.g., Exercise turns fat into muscle, women who lift weights get “bulky”
- Demographics questions
- Physical activity behaviors
  - Based on NHANES III (National Center for Health Statistics, 1994)

Statistical Analysis

- Bivariate Pearson Product Moment correlations
- 2 (race) x 2 (sex) x 2 (high school) x 2 (college major) between-subjects ANOVA
- Post-hoc tests were Bonferroni corrected independent samples t-tests
  - $p \leq .05$

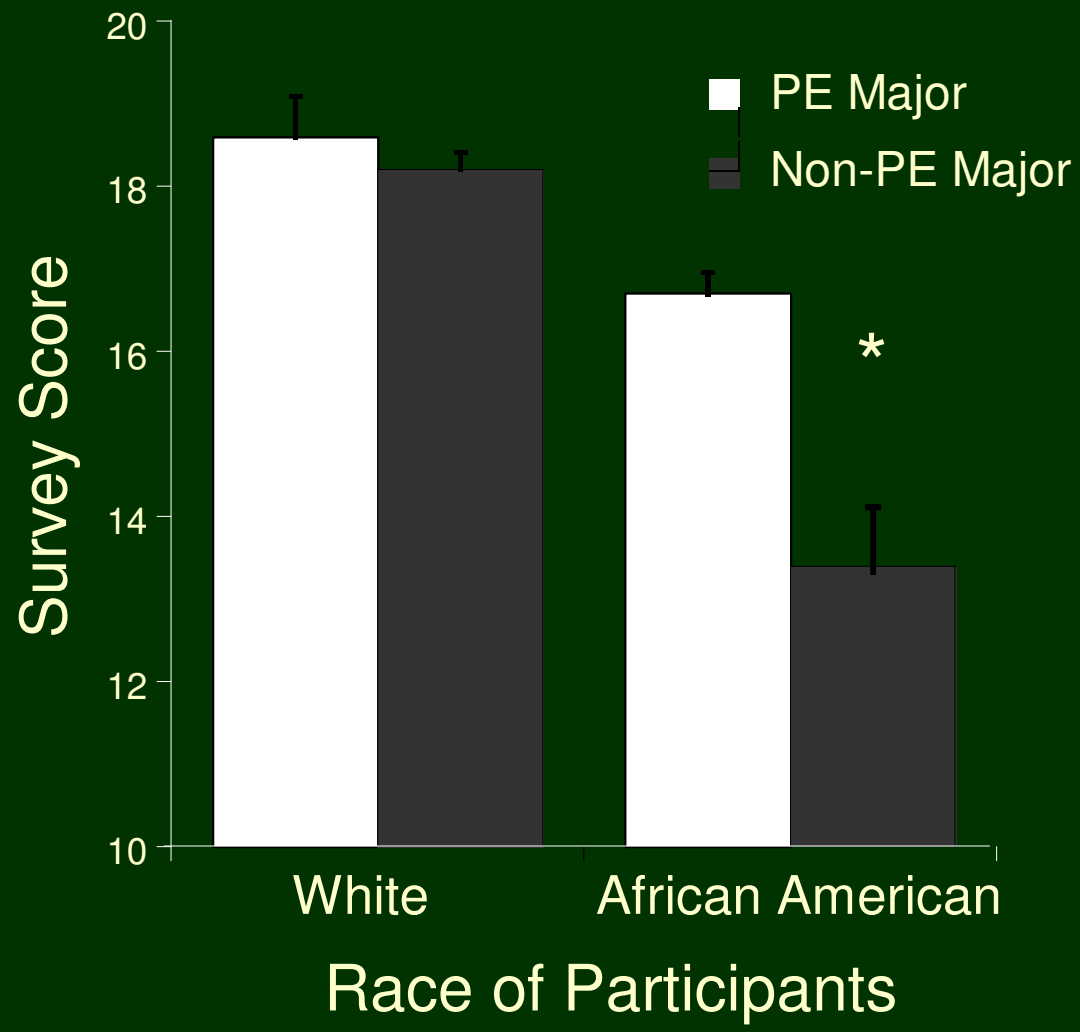
Results

Variable	Group 1	Group 2
Sex	*Males* 17.1 (2.9)	*Females* 15.9 (3.5)
Race	*White* 18.3 (2.3)	*African-American* 14.3 (2.9)
High school *(city vs non-city of Chicago)*	*Chicago* 14.8 (3.1)	*Non-Chicago* 17.7 (2.9)
High school *(public vs private)*	*Public* 16.2 (3.3)	*Private* 17.7 (3.3)
College major *(PE vs non-PE)*	*PE* 17.9 (2.7)	*Non-PE* 16.0 (3.4)

Results

Variable	1	2	3	4	5	6	7	8	9
1. Survey score	-								
2. Rec. PA	.09	-							
3. Peer PA	.10	.56	-						
4. H.S.	-.32	-.14	-.07	-					
5. Age	-.10	-.06	.08	.15	-				
6. BMI	-.14	-.19	-.22	.05	.14	-			
7. Sex	-.12	-.33	-.23	.14	-.14	-.01	-		
8. Race	.47	.10	.17	-.36	-.32	-.16	-.13	-	
9. Major	.29	.24	.24	-.06	.17	.04	-.41	.07	-

Physical Activity Knowledge Survey Scores By Race and College Major



Results Summary

- Results indicated higher scores for certain segments of the population.
- White and African American students received the same amount of PE in high school, but…
  - White students scored better than African Americans
  - Students from non-City of Chicago schools scored better than City of Chicago students
  - African American PE majors scored better than African American non-PE majors

Discussion

- A variety of factors relate to the amount of PA one achieves.
  - Weather, opportunity, access to facilities, safety (Humpel et al., 2002)
  - Socioeconomic status (e.g. Drenowatz et al. ,2010)
  - Race and gender (Prochaska et al., 2000)
    - African American and Hispanic women report the lowest level of PA
  - Level of education (He & Baker, 2005)
    - PA steadily declines for those with lower levels of education

Curricula in Urban Schools

- PE had little effect on public health in New York (Johnson, 1999).
- Urban students' perception of PE (Cothran & Ennis, 1999).
  - Feel alienated from the PE program
  - Information is irrelevant
  - Feel few social attachments
  - Do not value the experience

Curricula in Urban Schools

- Highlight lifelong PA and focus on personal wellness
- PATH Program in NYC (Fardy et al., 2004)
- Teacher-preparation should focus on incorporating NASPE standards
  - Work to motivate students to engage outside of class
  - Teacher professional development opportunities?
- Center curricula around the development of trust, learning, and a sense of family to foster engagement in PE (Ennis et al., 1999)

Curricula in Urban Schools

- In a sample of Chicago Public schools, no written guidelines were found pertaining to PE instruction (Thomas et al., 2006).
  1. Sports and games
  2. Motor skill development
  3. Health/wellness/fitness



- Students from such urban settings may face a lack of opportunity and resources
  - Reduced understanding of PA principals?
  - Reduction in level of PA?

Conclusions

- African American PE majors scored significantly better than African American non-PE majors
  - Not evidenced for White students
- Both groups received the same amount of PE, yet the White students scored better.
  - Curricula, resources, teaching method?
- Current study sheds light on potential factors related to PA levels.
  - High school curriculum was not collected
- Implications for public health and education
  - High rates of disease in minority populations

Questions?