Title: Creation of a Fitness Curriculum for Middle School Students

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ABSTRACT
Physical inactivity in youth has been declining over the past three decades, contributing to the childhood obesity epidemic and many other serious health conditions. According to the Center for Disease Control and Prevention, adolescents should be participating in at least sixty minutes of physical activity per day. The purpose of this project is to contribute to youth obesity prevention efforts by partnering with the Citizen Schools after school program at Orchard Gardens Pilot School in Roxbury, Massachusetts to develop an evidence-based ten-week health and fitness curriculum for seventh grade students. The aim of the curriculum is to expand the students’ current knowledge of healthy lifestyles and physical fitness. A secondary aim is to provide information regarding careers that focus on health and fitness such as Physical Therapy. This community-based project is divided into two phases. In Phase 1 of the project, a 90-minute pilot, titled “The Science Behind Exercise,” was presented to twenty seventh grade students at Orchard Gardens. Topics of the pilot included information and activities related to the Musculoskeletal and Cardiopulmonary systems of the body. Students were asked to complete a questionnaire before and after the pilot to allow further development of the full ten-week curriculum. The full curriculum will be implemented in Fall 2014 during Phase 2.

BACKGROUND
- Obesity and increased BMI in children lead to multiple serious health conditions: CVD and Type II DM.
- Recent studies support that the decline in physical activity may have the strongest impact on the increase of BMI of children.
- Urban areas/communities with low SES have the highest rate of obesity in the US, which is a direct result of easy access to unhealthy foods.
- How to slow the obesity epidemic: early prevention & health promotion, specifically in ‘at need’ communities.
- Students who participate in fitness-oriented classes, compared to those who take general physical education, are more likely to engage in physical activity and have lower BMI.
- Northeastern University’s Physical Therapy program has partnered with Orchard Gardens Pilot School, an urban school in Boston with students ranging from preschool to 8th grade.
- ~ 73.2% of students attending Orchard Gardens are from low income families.
- Demographics: 56% Hispanic, 42% Black, and 2% Asian.

METHODS
- Phase 1
  - Performed literature review to understand current trends in youth health in urban communities and effective teaching methods for middle school students.
  - Key Words: health, fitness, youth, middle school, urban, exercise, nutrition, obesity, overweight, community, prevention, learning, teaching, milestones, musculoskeletal, neurological, cardiopulmonary.
  - Databases: Sporicstic, EBSCO Host, Pubmed, Cinhal.
  - Presented the 90-minute Pilot.
  - Administered pre and post questionnaires.
  - Provided information on the cardiovascular and musculoskeletal systems.
  - Developed the 10-week apprenticeship curriculum, ‘The Science behind Exercise’.
  - Highlighted three subgroups of PT & their relation to fitness: musculoskeletal, neurological, and cardiopulmonary.
  - Addressed the importance of keeping the individual systems healthy to help prevent secondary complications of a sedentary lifestyle.
- Phase 2:
  - Implement the 10-week curriculum.
  - Administer questionnaires to students and students’ families.
  - Evaluate weekly to objectively measure student learning and effectiveness of the apprenticeship.
  - Develop and present ‘WOW’ as the final project.

RESULTS
- Students were given a short, self-reported questionnaire about their prior knowledge of the topics of the pilot and asked what they learned after completing the 90-minute Pilot.
  - Interactive and hands on activities were the most effective teaching tool for this age group.
  - Worksheets used during the pilot proved to be an important adjunct to the learning process.
- During the pilot, students expanded their knowledge on the physical therapy profession and learned a basic foundation of the musculoskeletal and cardiopulmonary systems.
  - These results will be used to develop the most effective curriculum.

CONCLUSION
- A review of the literature shows that the most successful lifestyle modification programs for obesity prevention in children, thus far, involve changes within the school environment and curriculum.
- Students who participate in fitness-oriented classes, compared to those who take general physical education, are more likely to engage in physical activity and have lower BMI.
- Results of the 90-minute pilot demonstrated high potential for seventh grade students to be motivated by the future implementation of the 10-week curriculum.