Smart Nutrition and Conditioning for Kids (SNACK): An Interprofessional approach to Nutrition and Physical Education

Tracy Perron PhD, RN, Tami Jakubowski DNP, Anne Farrell, PhD
Disclosure

Tracy Perron PhD, RN is an assistant professor at the College of New Jersey, Tami Jakubowski, DNP is an associate professor at Gwynedd Mercy University and Anne Farrell, PhD is an associate professor at the College of New Jersey.

We disclose the absence of personal financial relationships with commercial interests relevant to this educational activity within the past 12 months.

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Objectives:

- The learner will be able to examine national and regional trends that impact children's risks for childhood obesity in the United States.
- Integrate knowledge and experience of other professions to develop community values and priorities related to health and fitness.
- Collaborate with other professions to develop positive outcomes relevant to prevention and healthcare.
The College of New Jersey School of Nursing, Health, and Exercise Science developed the SNACK program in response to the 2010 Childhood Obesity Study recognizing a 49% childhood obesity rate in Trenton New Jersey public schools.

Lifestyle influences contributing to obesity and T2DM include poor food choices, inadequate access to healthy foods, decrease in physical activity, and insufficient access to safe play environments.
The purpose of the SNACK (Smart Nutrition and Conditioning for Kids) pilot study was to increase the fitness and health of children age 7-9 years of age in two Mercer county elementary schools.

This was achieved by providing fundamental Integrative training (FIT) and health education in the areas of fitness, healthy eating and diabetes prevention.

SNACK was implemented by Nursing, Health, and Exercise Science students with faculty guidance, provided an intergrative program of fitness training, nutrition education and movement activities during physical education classes.
• Four second grade classes in two Mercer County schools (School A & School B) with ethnically diverse populations were selected. One intervention and one wait-listed group were selected from each school.

• Experimental Group: 35 Students
• Control Group: 36 Students

• Boys: Experimental: 17
  • Control: 15
• Girls: Experimental: 18
  • Control: 21
Methods

• The intervention was performed twice a week for 45 minutes for 8 weeks.
• Pre/post study health and fitness assessments were completed on each child.
• To reinforce content a video format for parents, teachers, school nurses and children were developed for home viewing via school websites.
• Nutrition lesson plans were developed to educate the children on healthy eating in a fun, interactive manner during physical education class.
Instruments

- **Faculty Developed Questionnaire** was distributed to the parents of the participants pre/post intervention. This questionnaire was developed to determine baseline knowledge of healthy food choices, foods available at home, and physical activity at home and school.

- **Physical Assessment** was performed on the participants pre/post intervention. Height, weight, blood pressure and pulse were taken and BMI’s were calculated. Children were examined for early manifestations of diabetes, such as acanthosis nigrans.

- **Fitnessgram Fitness Test** was performed on the participants pre/post intervention. This a valid and reliable test used to assess aerobic fitness, flexibility and muscle strength. In addition, the long jump was performed to assess power.

- **CATCH Nutritional Knowledge Instrument** was used to measure nutritional knowledge pre/post intervention.
Interdisciplinary Collaboration

• Benefits of Interdisciplinary Collaboration in Schools
  • Sharing ideas about your discipline and teaching with enthusiastic colleagues with a common goal.
  • Students see teachers and other professionals model continued learning, interest in their discipline and in those of others, collaborating with peers.
  • Exposure to new ideas.
  • Opportunity to work with different people.
  • Enhanced flexibility in working with students.
Catch Program

• Coordinated Approach to Child Health (CATCH)

• CATCH promotes a healthy lifestyle through physical activity and healthy food choices based on health education, school environment and family/community involvement.
FIT Program

The Fundamental Integrative Training (FIT) FIT includes a circuit of 6-7 exercise stations with 2 activities (total of 12-14) that focus on enhancing muscular fitness and fundamental movement skills (primarily jumping, balancing, throwing and catching).

FIT includes a series of progressive exercises using one’s body weight as well as medicine balls (1-2 kg), fitness ropes, equalizer bars, BOSU balance trainers, fitness spots, dome cones, punch balloons and spooner board (plastic boards that simulates skateboarding).
Results

• Schools A & B experimental groups post CATCH Nutrition survey results improved overall.

• Schools A & B experimental groups post CATCH Healthy Choices survey results improved overall.

• Schools A & B experimental groups post parental questionnaires expressed and increase in physical activity.

• School B experimental group post parental questionnaires noted the frequency of meals together as a family increased.
Results

- School A post experimental groups post pacer scores were significantly higher than pre scores.
- Schools A & B post intervention had significantly higher push-ups and sit-ups results.
- School A’s pre-intervention control group had significantly higher pacer scores. Post intervention the experimental group had surpassed the control groups pacer scores.
Conclusion

- Childhood obesity is a well known public health concern in the United States, and is increasing in other developed countries worldwide.
- Latino, native American, pacific islander, and African American children and children from lower income families have higher rates of childhood obesity.
- Obesity in children increases the risk of early diagnosis of hypertension, heart disease, and diabetes.
- Lifestyle modifications implemented at the earliest possible ages holds the most promise for sustainability and long term health benefits.
- Smart Nutrition and Conditioning for Kids (SNACK) is one example of an interdisciplinary approach to early intervention that teaches children how to be fit and stay healthy.