ABSTRACT:

Fit Kids is a nutrition education and physical activity program created collaboratively by the Norwalk Health Department, Sacred Heart University, and Norwalk Community College in Connecticut. Undergraduate exercise science students serve as interns and assist in leading/supervising nutrition education and physical activities for elementary school children. Childhood obesity statistics in Norwalk Connecticut reflect national trends in prevalence and as a result, the objectives of Fit Kids include increasing physical activity and healthy eating habits among children enrolled in after school programs. These objectives also match nutrition and physical activity content and curriculum in undergraduate exercise science courses at Sacred Heart University and Norwalk Community College in addition to goals and objectives of Healthy People 2020.

The specific objectives of Fit Kids include a decrease in mean BMI and fat mass, and an increase in lean body mass as well as improved indicators of fitness including upper body strength and lower extremity power. Fit Kids also seeks to increase self-confidence, self-efficacy (via validated tests) and knowledge of nutrition content measured via a pre and post quiz. Fit Kids is integrated and aligned with the health promotion objectives of the Norwalk Health Department and the faculty service/volunteer/scholarship expectations of Sacred Heart University and Norwalk Community College. Childhood obesity is also a research interest among the collaborative partners with dissemination of results at peer-reviewed professional conferences. Incorporating undergraduate exercise science students allows for adequate supervision of nutrition education and exercise activities while simultaneously meeting learning objectives for the students.

The preparation and administration of Fit Kids nutrition and physical activities requires integration of course content with transformative social engagement with the children as well as the professionals associated with the program. Service learning is the primary pedagogy used including supporting lecture content and orientations provided by the health department. The program has attracted corporate sponsors and local politicians to events including the mayor of Norwalk. The intervention duration is 12 weeks consisting of two one-hour sessions per week including 30 minutes of nutrition education and 30 minutes of physical activity.

The Fit Kids program assessed several variables among children in the intervention group and comparison group in 2011. The intervention group consisted of 21 children with a mean age of 6.7 years. The comparison group was comprised of 18 children with a mean age of 7.8 years. Decreased BMI and percent fat was observed in the intervention group as well as increases in strength, power, and self-efficacy. Inferential analysis (paired T-tests) reveal significant changes in % fat, BMI, strength, power, and self-efficacy for the intervention group and significant changes in strength and power among the comparison students. Relative to undergraduate student service learning outcomes, results from a standardized questionnaire reveal that over 80% of student respondents found that activities were “relevant to the course” and “enhanced communication skills”.

EDUCATIONAL METHODS OR APPROACHES USED:

Service Learning (SL) describes teaching methods that incorporate student service activities with specific learning objectives. SL has been applied to public health, education, nursing, physical therapy, and occupational therapy higher education programs. Student outcomes include positive changes in health practice.
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promotion and research skills, critical thinking, civic engagement, and facilitation of social change. Colleges and universities have increasingly incorporated SL into allied health and general curricula with an estimated 7.1 billion dollars worth of community services provided in the year 2006. Specifically, 317 million hours of SL represented about 5.6 hours per week per student of community services within the academic year (Campus Compact, 2009). Though SL can be incorporated into almost any discipline, it is more commonly applied to the fields of public health, nursing, occupational therapy, pharmacy, and physical therapy.

SL in allied health education programs has provided clinical health screenings, gait analysis screenings, and home visits for the elderly under the direct supervision of qualified health care professionals and educators. Student outcomes include the development of health promotion and research skills, facilitation of social change, attainment of cultural competency, critical thinking, and civic engagement. Physical therapy and occupational therapy skills have been incorporated into SL education as well as screening and assessment skills associated with nursing curricula. In addition, SL has been associated with positive academic and professional outcomes such as attainment or improvement of clinical skills and job placements. Communities and groups served by students have included patients and communities at risk or diagnosed with chronic disease in addition to service personnel such as police officers.

Relative to the Fit Kids program, SL is incorporated into an exercise physiology course within the exercise science major at Sacred Heart University. Health and physical activity promotion is aligned with specific course objectives and participation in Fit Kids augments applied and laboratory activities associated with the course.

**PROJECT DESCRIPTION:**

Fit Kids was initiated by the childhood obesity task force in Norwalk, Connecticut. With members from Sacred Heart University and Norwalk Community College, discussions and plans relative to service learning and opportunities for undergraduate students in allied health were met with enthusiasm among the task force members. Fit Kids is integrated and sustained at Sacred Heart University in three specific ways. Professor Bjerke integrates the program with the undergraduate exercise science program via service learning projects associated with specific courses. Additionally, Professor Bjerke gains college support by incorporating Fit Kids with the college's Center for Community Health and Wellness which provides faculty and student resources. Finally, the Fit Kids program is affiliated with the undergraduate honors program and the Sacred Heart University Wellness Program, directed by Professor Bjerke. By affiliating the program with more than one academic department and/or service, information about the program is disseminated to a greater degree among students, faculty, staff, and the community. Fit Kids is likely successful due to diverse collaborative partners including the Norwalk Health Department and Norwalk Community College as well as diverse affiliates at Sacred Heart University. Additionally, presentation of findings at regional conferences has the potential to increase interest in the Fit Kids program and inspire and direct other professionals to implement similar programs.

The Exercise Science program at Sacred Heart University provides student interns to assist with the administration and supervision of the program. As SL requires that curriculum objectives be met during service activities, specific courses are selected which focus on health and fitness guidelines for children, epidemiology, and general health promotion. Student interns affiliated with Fit Kids have completed anatomy and physiology courses, and an introductory course in health and fitness promotion. Concurrently, students are taking an exercise physiology course which reviews exercise programming for children and some principles of chronic disease epidemiology. The intervention duration is 12 weeks consisting of two one-hour sessions per week including 30 minutes of nutrition education and 30 minutes of physical activity. The program takes place after school at two elementary school sites in
HEALTHY PEOPLE OBJECTIVE ADDRESSED:
ECBP3, ECBP 12-16, PHI 4, and PHI 6: The four specific HP 2020 objectives targeted by these case studies include health promotion and programming provided within the context of medical and nursing graduate education programs as well as within undergraduate allied health programs. Fit Kids addresses several of these specific objectives directly and others more indirectly.

For example, ECBP 12-16 seeks to incorporate health promotion and programming within graduate programs primarily in medicine and nursing. Though the Fit Kids program utilizes undergraduate students, a significant proportion of these undergraduates pursue nursing, medical, and physician assistant graduate programs after completing their undergraduate degree. As a result, the health promotion and programming experiences associated with participation in Fit Kids may have an influence on the students' perceptions of their graduate allied health education.

ECBP3 seeks to increase the proportion of elementary schools that have health education goals relative to National Health Education Standards. Fit Kids increases awareness of related content among school children and elementary school staff including physical education and health instructors, as well as school nurses. In the case of Fit Kids, the elementary school physical education instructors and school nurse not only provided support for Fit Kids, but also provided relevant advice and direction.

PHI 4 seeks to increase the proportion of four year colleges and universities that offer public health or related majors and minors while PHI 6 seeks the same objectives for two-year associate degree programs. Fit Kids supports both of these objectives by incorporating a research based health and fitness program into the undergraduate exercise science curricula at Sacred Heart University and Norwalk Community College. Additionally, I point out that though a traditional exercise science curriculum is not immediately associated with public health, the Fit Kids program and associated service learning and faculty research point to robust epidemiology and health promotion content that is within a contemporary undergraduate exercise science major.

PROGRAM OR COURSE GOALS:

Number of students enrolled/participating in 2010-2011 school year: 12
Students participating in the Fit Kids program are concurrently enrolled in Exercise Physiology; a junior level exercise science course. Course activities associated with Fit Kids include service learning, volunteer opportunities, and internships for credit and/or professional volunteer hours. The course description for Exercise Physiology "presents a workable knowledge of the body’s response to physical activity. Exercise metabolism, cardiopulmonary function, adaptations to training and environmental factors is addressed as well as exercise training guidelines. Assessment, clinical skills, aerobic testing, strength and power testing, and flexibility testing are among lab activities. Additionally, service learning opportunities are available associated with Fit Kids; a childhood obesity prevention and health promotion program in Norwalk Connecticut. Exercise Physiology is a four-credit course which typically enrolls 40 students per semester. Most students are pursuing allied health careers in exercise science, medicine, physical therapy, public health, nursing, and athletic training among other fields.

Did you conduct a needs assessment as part of your planning process? ☐ Yes ☒ No
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PROFESSIONS INVOLVED:
A Healthy Lifestyles Associate and Health Educator from the Norwalk Health Department collaborate with Exercise Science faculty at Sacred Heart University and Norwalk Community College. Undergraduate exercise science students serve as interns and assistants. Additionally, elementary school teachers and professionals participate at the school sites. The professional disciplines of public health, exercise science and athletic training are primarily represented.

LESSONS LEARNED/EVALUATION RESULTS:
It is the goal of Fit Kids to promote health and fitness within the context of "best practice". As a result, data collection is among the chief "successes" and "challenges" associated with the program. Data collection allows for dissemination of findings at professional conferences and via publication which has the potential to promote the program and attract support as well as draw attention to the public health concerns associated with childhood obesity. Data collection and the incorporation of student interns require planning and training as well as internal review by Sacred Heart University and the Norwalk Health Department. These planning and administrative activities are challenged by the class and work schedules of the faculty, students, and public health staff involved in the program. Work associated with the program on behalf of the faculty and students of Sacred Heart University and Norwalk Community College is on a volunteer basis. Though this provides evidence of dedication to the goals and objectives of Fit Kids, this also suggests that the faculty and students involved with the program have other obligations that challenge the scheduling and planning of health promotion activities.

Results suggest that the Fit Kids program merits continued support from all collaborative partners. The most recent data collection of Spring 2011 outcomes assessed several variables among children in the intervention group and comparison group. The intervention group consisted of 21 children with a mean age of 6.7 years. The comparison group was comprised of 18 children with a mean age of 7.8 years. Table 1 depicts the descriptive and inferential statistics for a selection of variables in both groups and is uploaded in the "companion materials". Decreased BMI and percent fat was observed in the intervention group as well as increases in strength, power, and self efficacy. Inferential statistics (paired T-tests at .05) reveal significant changes in % fat, BMI, strength, power, and self efficacy for the intervention group and significant changes in strength and power among the comparison group children. Limitations and potential confounders include loss to follow up among some of the subjects in both groups and lack of control or quantification of outside variables such as sports participation and physical education participation that may have contributed to changes in some of the variables. However, most significant changes were observed among the intervention participants, suggesting that Fit Kids may have had a direct impact on changes in body composition, self-efficacy, strength, and power among the intervention participants.

CONCLUSION:
A program that involves collaborative partners including undergraduate students is a "work in progress" which is continually refined and improved. Periodic data collection assures that feedback is provided and used to direct subsequent activities. I urge peers to appreciate the potential health promotion that results from dissemination of findings. I also encourage institutions to look beyond public health courses for the incorporation of public health and health promotion curriculum content and cite Fit Kids as an example of health promotion and programming curriculum applied to exercise science courses.

COMPANION MATERIALS: (Course syllabi, resource lists, tests, website, etc.)
Exercise Physiology Course Syllabus
Fit Kids Data
Healthy People 2020 and Education For Health
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Link to Exercise Science Curriculum
http://www.sacredheart.edu/pages/34671_undergraduate_program.cfm

Link to College of Education and Health Professions Center for Community Health and Wellness
http://www.sacredheart.edu/pages/34315_center_for_community_health_wellness.cfm

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