**Research Questions**

What is the efficacy of a primary prevention nursing project (after school exercise program) in China modeled after successful American nursing programs to address obesity prevention in youth?

Is there a statistically significant difference between study variables in students before and after a structured program of physical activity?

Is there a systematic difference between an “education only” intervention compared to “education combined with physical activity”?

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**Background**

Type 2 Diabetes is a chronic, preventable disease that has reached epidemic proportions in the general adult population in China. The prevalence of diabetes in China is due to multiple factors, notably the influence of the American fast food industry and the fact that their disease profile is reflective of an industrialized country.

In 2010, 92.4 million adults 20 years of age or older (9.7% of the adult population) had diabetes and 148.2 million adults (15.5%) had pre-diabetes. China has the most diabetic patients in the world.

**Design**

The project, called “Group 8,” was a team effort between Chinese and American undergraduate students to promote healthy eating and regular physical activity among middle school aged youth in Guangzhou, China. A bilingual data collection instrument (Figure 1) was co-created by Dr. Kirkhorn and Peiru Zhou, a nurse at the First Affiliated Hospital of Jinan University. A quasi-experimental non-equivalent control group pre-test/post-test design was used. Descriptive data from the study sample and inter-correlations among the following study variables were obtained: school, gender, screen time, self-appraisal of exercise, healthy body, diet, and body mass index (BMI).

Chinese Middle School students were surveyed before and after the program using this bilingual data sheet co-created by the UW-EC nursing faculty and Chinese Nurses at the First Affiliated Hospital of Jinan University. The instrument was piloted for content and readability on a 6th grade middle school student from Jinan prior to administration.

Updated information, photos, and other details about the project were recorded and later transferred to a blog: http://www.lekirkhorn.blogspot.com

**Sample**

Study participants were students in grade 7 from two large, urban middle schools in China (School A and School B). Total sample size was 178 students, 133 from School A (78 male, 54 female, 1 did not disclose) and 45 students from School B (23 male, 22 female).

**Logo**

A logo containing the “Group 8” name was designed by Jiulin Zhao, a UWEC Chinese International Student from Jinan University. The logo was imprinted on gifts for the students, such as t-shirts and water bottles.

**Intervention Methodology**

Middle school students were enrolled in a program created by the research team and delivered to students with the assistance of Chinese Language Translators. The program included structured information about balanced diet and regular physical activity.

- **School A:** was chosen for the after school exercise intervention based upon strong affiliations between UW-EC and Jinan University, and willingness to allow outside groups to work with students in a structured program of after school (busy time with large examination schedules to work around) exercise. School B was included upon request of the school’s administrators.
- **School B:** 4 intervention days including PowerPoint presentations and 3 Structured Exercise Sessions. T-Shirts, H2O Bottles, and Pedometers were given to participants to encourage continuation of exercise beyond the time of the intervention.

**Results**

Group 8 demonstrated primary prevention, heightening awareness of the importance of regular physical activity and healthy eating practices among middle school aged youth. Our work offers a model for nursing practice in schools and communities in China.

Our after school exercise intervention was more effective than education alone for certain variables of self-perceived health and electronic screen time; interestingly, students in School B reported greater physical activity as a result of education alone than the students attending School A.

Overall, Group 8 was successful in raising students’ perception of their own health, in lowering perceived frequency of fast food intake, reducing electronic screen time, and enhancing physical activity.

**Limitations**

- Study design posed measurement threats to the independent variable because of non-equivalent samples, absence of randomization, and absence of matching, particularly on dependent variables of diet and exercise.
- Limited psychometric properties for the data collection instrument with some weak items, such as self-perceived health, which could be variously interpreted as personal appearance, body image, or health status.
- Data collected on variables of diet and exercise were limited, e.g., limited data about specifics of daily dietary intake and amount of physical activity.
- Uneven number of boys and girls in the study sample, uneven numbers at the two schools (4 classrooms at School A, 1 classroom at School B).
- Suboptimal exercise conditions for the independent variable: Intensely hot, end of school term with students studying for comprehensive exams.
- Objective data collection of height, weight, blood glucose or any physiological parameters other than heart rate was not permitted.
- Limited generalizability of the data, due to a smaller sample in School B.
- Limited time, financial resources for the investigative team to conduct a longer, larger, more statistically robust prospective study.

We thank the UW-Eau Claire Office of Research and Sponsored Programs (ORSP) and Differential Tuition for generous support. We also thank the UWEC Center for International Education and the Chinese nurses and translators, whose help was integral to the completion of our project. References Available Upon Request.