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Kevin Vlahovich
Richard Brucker
Sylvia Negrete
Julie Lords
Heidi Roeber Rice

See next page for additional authors

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School-based healthy weight intervention for high school students
Kevin P. Vlahovich, MD; Richard Brucker, MD; Sylvia Negrete, MD; Julie Lords, RN; Heidi Roeber Rice, MD, MPH; Alberta S. Kong, MD, MPH
University of New Mexico

**BACKGROUND**

Obesity is a major risk factor for many chronic diseases which can decrease quality of life and raise healthcare costs. Prevention and treatment of obesity in youth can significantly reduce the chance of developing chronic diseases in adulthood. Adolescence is an excellent intervention period, as this is a time when lifelong habits and a sense of self are formed. A school setting is ideal because school is where children are accessible and prepared to learn. Because losing weight may be seen as a complex and difficult process, to make this process less daunting, we propose to study a simplified, stepwise approach to weight loss in adolescents.

**STATEMENT OF PURPOSE**

The proposed study addresses the following New Mexico Healthier Weight Council Policy Priorities: a) Healthy Kids, Healthy Economies initiative/school nutrition/Farm to School; b) Increase physical activity; c) Reduce screen time; d) Increase fruit and vegetable consumption; e) Educate on portion control; f) Reduce sweetened beverage consumption.

**MATERIALS AND METHODS**

The intervention was created to align with goals from Healthy People 2020 and is based upon American Heart Association Nutrition Committee's Diet and Lifestyle Recommendations. Each weight loss strategy is supported by Level 1 to Level 3 evidence (meta-analyses, randomized clinical trials, and population studies). The intervention is intended to move students through the stages of change (from contemplation to action) via education, motivational interviewing, and fostering of self-efficacy. 475 adolescents from an urban high school in New Mexico will be recruited over the 2013-14 school year to participate in classroom activities, and up to 90 of these students may also participate in a school-based nursing intervention. The steps in the study are as follows:

1) **Classroom Intervention:** Students will learn how to calculate and interpret their body mass index (BMI) from teachers via a classroom lesson plan. They will be allowed to measure their own height and weight, calculate their BMI, plot these metrics on a growth chart, and complete a survey about their experience. Students will be told about the second phase of the study and be given the opportunity to participate with the consent of their parents.

2) **Nursing Intervention:** Up to 90 students opting to continue will have 3 one-on-one motivational interview sessions with a school nurse over a 2-month period. Each month, participants choose one change from a list of evidence-based lifestyle changes as their “homework” assignment. Choices include measuring portions, increasing fruit and vegetable intake, and limiting sugar-sweetened beverages. Students will return to the nurse at the end of each month to assess the previous month’s progress. Height, weight, and BMI will be assessed at each visit. Each participant will then have the opportunity to select an additional lifestyle change for the coming month.

3) **Follow-up:** Follow-up visits will be conducted at month 3 for all participants and will be optional for month 5 and the last month of school. At the month 3 visit, participant satisfaction will be measured using Likert scale items. Adherence to healthy lifestyle changes, height, weight, and BMI, will be assessed at all follow-up visits.

4) **Data Analysis:** Descriptive statistics will be calculated for participant demographics and variables of interest. Pre-post changes in BMI of overweight/obese adolescents in the healthy weight intervention delivered by the school nurse will be analyzed.

**ANTICIPATED RESULTS**

We anticipate that adolescents will have high satisfaction scores from both the classroom intervention and nursing components. Furthermore, we anticipate no increase in BMI amongst overweight/obese adolescents completing the healthy weight intervention.

**CONCLUSIONS**

This study will contribute to the gap of knowledge on effective weight management strategies for high school adolescents. Using a school-based approach in collaboration with teachers and school nurses is novel and may have public health impact for addressing adolescent obesity.