

Next Phase of HealthyU: Piloting an Environmental Conservation Component

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Background

There is a growing awareness of the interconnections between disease prevention, healthy behaviors and conservation of our natural environment. A deeper understanding of these connections can increase the likelihood of motivational social change and improved health behavior among youth. The goal of our pilot study was to enhance healthy behaviors, improve knowledge, and decrease childhood obesity by embedding a previously evaluated health prevention HealthyU curriculum into an environmental conservation framework of social responsibility.

Jasper Ridge Biological Preserve, Stanford University



Community Partner

We partnered with Hoover School, a K-8 school of Redwood City School District (RCSD). RCSD is a diverse school district in San Mateo County that is "committed to the success of each and every student" by "developing students' full range of developmental needs, intellectual, physical, mental, and social-emotional" (<http://www.rcsd.k12.ca.us>). Through the leadership of its committed staff, the district has continued to strengthen ongoing collaborations with local community organizations and Stanford University in order to provide unique and innovative opportunities for their students.

Project Description & Goals

Project Description

Students from Hoover School in Redwood City were administered the web-based HealthyU curriculum by their science teacher. Thereafter, they were offered a one day educational experience on environmental conservation at Jasper Ridge Biological Preserve (JRBP). The field experience was facilitated by Cynthia Wilber, Education Coordinator at JRBP with the help of a cohort of Stanford students who work with the middle-school students using tiered mentoring and hands-on ecology fieldwork. Stanford docents talked about significance of choosing healthy snacks, being active, and preserving the ecological balance in nature during focused student group discussions as they led hikes through diverse ecosystems coexisting at JRBP. Students took pre and post tests to measure knowledge and behavior change.

Project Goals

- Enhance healthy behaviors and decrease childhood obesity in underserved populations
- Improve knowledge about the interconnectedness of health, environment and disease
- Teach students to become agents of change, and advocates for environmental conservation

Students hiking with a Stanford trained JRBP docent



Methodology

Participants

Approximately 64 7th grade students of diverse ethnicities from Hoover School under supervision of 7th grade science and physical education teachers, participated in web-based learning and outdoor field experience.

Intervention

- Four web-based health education modules, in conjunction with regular school curriculum.
 - Nutrition
 - Physical Activity
 - Healthy Weight
 - Sleep
- Environmental Experience at JRBP
 - One docent-led field trip and hike
 - Participants provided healthy snacks
 - JRBP water bottles for drinking water

Assessment

- Pre and post knowledge and behavior questionnaires
- Pre and post concept maps
- Post field trip reflections

Analysis

Statistical analysis of matched pre-post questionnaires to evaluate change in knowledge and/or healthy behavior.

Results

- Students showed a modest but promising overall improvement in knowledge and increased positive health behavior after completing web-based HealthyU modules.
- Qualitative data including concept mapping and responses to open ended questions made visible the enthusiasm with which students appreciated the field experience and willingness to change behavior.

Results (cont.)

Figure 1: Percent Change in Mean Pre-Post Knowledge Scores

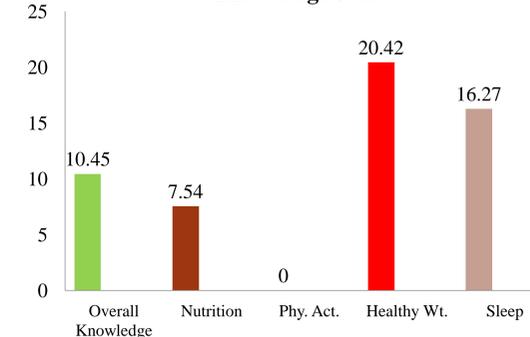


Table 1. Change in Mean Pre-Post Behavior Score, by Individual Questions (Selected)

Question	Category	% Change
During the past 24 hours, how many times did you eat vegetables? (Include salads and non-fried potatoes.)	Positive Nutrition Behavior	6.32% increase in positive behavior
During the past 24 hours, how many times did you eat fruit? (Do not count fruit juice.)	Positive Nutrition Behavior	11.02% increase in positive behavior

Select Examples of Students' Post Field Trip Reflections

What would you like to change in your diet?

- Eat less, eat healthy
- Stop drinking soda and watch what I eat
- Eat things that go to compost and recycling
- Eat stuff with less corn syrup
- Drinking more water because it helps me
- Stop eating too much junk food,
- Do more exercise

How can you keep your environment clean?

- Not throw trash in the ocean, recycle paper and other trash, not waste any electricity
- Not littering the streets and respecting the environment
- Planting trees and throwing trash where it goes
- Making compost, also taking care of all animals because they all help at least a little
- Stop the water when not using it, plant more trees and don't destroy environment

Conclusion

Lessons Learned

- This model is sustainable, and has the potential to aid schools towards adopting positive health behaviors.
- Our pilot study included a stealth intervention that involved students participating in docent-led field trip and hike, that interwove concepts of environmental conservation, physical activity and healthy eating.

Plans for Continued Development

- Dissemination of web-based tool to Redwood City School District teachers.
- Expansion and improvement of current program with new elements to increase knowledge and behavior change and environmental health.

The HealthyU curriculum is free and available online for educational purposes with previous notification to the investigators as described on the main page. For more information, please visit: <http://healthyu.stanford.edu>.

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Students snack on fruits and collect their JRBP water bottles

