Interventions To Reduce Risky Decision-Making In Adolescents

Dr. Valerie Reyna, Seth Pardo, Karone Booker

Cooperative Extension Contributors:
New York City: Jackie Davis-Manigaulte, Michele Luc, Eduardo Gonzalez Jr
Broome County: Victoria Giarratano, Fairlene Repard, Ann Supa

Abstract
The goal of this project is to reduce adolescent health risks by providing effective interventions in the areas of sexual health as well as nutrition and fitness, while also gathering research data to improve the interventions. By working with Cornell Cooperative Extension, we are assessing how best to move the program beyond the laboratory team and into the community.

Background
Why is it Important?
- Adolescent pregnancies are a problem in the United States. 
- In 2016, 4 in 10 adolescent girls (ages 15-19) had an unintended pregnancy
- Unhealthy eating and exercise habits as well as obesity are prevalent among adolescents.
- This intervention is designed to help reduce both of these health risks in adolescents.

Fuzzy-Trace Theory
- Individuals make decisions using both verbatim (precise, verbal) and gist (bottom line, experience-based) processes.
- Research suggests that verbatim processing results in more risk taking because adolescents weigh the benefits higher than the risks, while gist processing results in less risk taking (more protective behaviors) because adolescents are categorically avoiding risks.
- People become better decision makers with age as there is increased reliance on gist processes when making decisions (Reyna & ETRA, 2008).

Enhanced Reducing the Risk Curriculum
- An enhanced version of the Reducing the Risk curriculum that the Centers for Disease Control and Prevention (CDC) has approved as a curriculum that significantly reduces unprotected sexual intercourse.
- The enhancements are based on fuzzy-trace theory evidence-based predictions. Specifically, the enhanced curriculum emphasizes the bottom line meaning of the curriculum information.
- In a diverse sample of 987 adolescents from Arizona, Texas, and New York, the enhanced curriculum was significantly more effective in reducing adolescent risk taking across several measures.

Eat Fit
- An obesity prevention curriculum for middle school youth that we have modified for high school aged youth.
- There is very little research (randomized controlled trials are especially lacking) on obesity prevention curricula for adolescents.
- The information we gather from evaluating Eat Fit will promote future work to improve healthy lifestyles in adolescents.

Method
- A collaboration between Dr. Valerie Reyna's Laboratory for Rational Decision Making at Cornell University and Cornell Cooperative Extension offices in New York City and Broome County.
- New York City
  - Central Queens Y, Forest Hills, NY – 11 students
  - Groundwork, Inc., Brooklyn, NY – 4 students
  - Child Center Jamaica, NY – 9 students
  - New York Mission Society, Harlem, NY – 8 students
  - Word of Life Ministries, Bronx NY – 17 students
- Broome County – 11 students (additional recruitment planned with two school districts)

- Ithaca
  - TST BOCES summer school, Ithaca High School, Ithaca NY – 36 students
  - New Roots Charter School, Ithaca, NY – 75 students

- New Roots Charter School, Ithaca, NY
- Word of Life Ministries, Bronx, NY
- Groundwork Inc., Brooklyn, NY
- New York Mission Society, Harlem, NY
- Central Queens YM and YWHA, Child Center New York
- Groundwork Brooklyn
- New Roots Charter School
- New York Mission Society

Figure 1. Participant Demographics
- All sites students are randomly assigned to either the Eat Fit or Enhanced Reducing the Risk curriculum. Each curriculum consists of 14 teaching contact hours.
- Participants complete a survey before and after completing the curriculum as well as at 6 and 12 months for follow up.
- The survey includes outcome measures related to both sexual health and obesity prevention.

- The food pyramid
- Reading nutrition labels
- Aerobic, strength and stretching exercises
- Discussion of the role of advertising and the media in food choices
- Setting and tracking personal progress towards healthy eating and exercising goals

Aerobic, strength and stretching exercises
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Figure 2: Map of current extension sites- Groundworks, Inc., Word of Life Ministries, Central Queens Y, Child Center of New York, New York City Mission Society, New Roots Charter School, TST BOCES, CCE Broome County

Intervention Curricula

Enhanced Reducing the Risk (RTR+)
Curriculum: Prevent sexually transmitted infection (STI) and manage pregnancy
Goal: Strengthen health understanding of RTR+ effectiveness to inform future interventions
Length: 4 hours
Based on: Centers for Disease Control and Prevention approved Reducing the Risk curriculum
Modifications: Based on fuzzy-trace theory, emphasized the bottom line, gist meaning of risk and protection

Eat Fit
Curriculum: National Hispanic Leadership Council's Eat Fit curriculum
Goal: Promote healthy nutrition and fitness choices to prevent obesity
Length: 6-14 hours
Based on: University of California Cooperative Extension Eat Fit curriculum
Modifications: Modified for use with older adolescents and to be 14 hours in length

Figure 3: Dr. Valerie Reyna at undergraduate and graduate student researchers in the Laboratory for Rational Decision Making

Conclusions and Discussion
- The RTR+ curriculum significantly reduced a variety of risk factors related to unprotected sex.
- The Eat Fit curriculum promoted healthy lifestyles by improving nutrition, which is associated with obesity prevention.
- Through our collaboration with Cornell Cooperative Extension offices in New York City and Broome County, these beneficial curricula will continue to reach more youth in New York State.
- The research results gathered through this effort will be used to further improve the curricula and inform future efforts to reduce risk taking in adolescents.

References