



Interventions To Reduce Risky Decision- Making In Adolescents

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Abstract

The goal of this project is to reduce adolescent risk taking 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 this program beyond the laboratory team and into the community.

Background

Why is it Important?

- Risk taking plays a large role in adolescent health.
 - High teen pregnancy and sexually transmitted infection (STI) rates.
 - 1 in 4 adolescent girls has an STI.
- 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, veridical) processes and gist (bottom line, intuitive, 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 (Mills, Reyna, & Estrada, 2008).
- People become better decision makers with age as there is increased reliance on gist processes when making decisions (Reyna & Ellis, 1994)

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 N=807 adolescents from Arizona, Texas, and New York, the enhanced curriculum was significantly more effective in reducing adolescent risk taking across several measures.
- The current extension project is expanding implementation of this successful intervention to more New York State adolescents, while also fine tuning the enhanced curriculum.

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 in Ithaca 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

Gender	51.5% female	48.5% male	
Race	48.3% White	28.2% Black	23.2% Other
Ethnicity	80.6% Non-Hispanic	19.4% Hispanic	
Mean Age	16.13 ± 1.379		
Socioeconomic Status	59.3% have received free lunches from school		

Figure 1. Participant Demographics

• At 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 3, 6 and 12 months for follow up.

• The survey includes outcome measures related to both sexual health and obesity prevention.



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 Goal:	Prevent sexually transmitted infection (STI) and teenage pregnancy
Research Goal:	Strengthen research understanding of RTR+ effectiveness to inform future interventions
Length:	14 hours
Based on:	Centers for Disease Control and Prevention approved Reducing the Risk curriculum
Modifications:	Based on fuzzy trace theory, enhanced to emphasize the bottom line, gist meaning of risk and protection.
Previous Research:	In a large study of 734 adolescents in Texas, Arizona and New York, the RTR+ reduced a variety of factors related to sexual risk taking more effectively than the standard Reducing the Risk curriculum. Participants in the RTR+ curriculum had favorable outcomes on scales measuring intentions to have sex, knowledge, sexual attitudes, perceived sexual norms, self efficacy in using prophylaxis, recognition of warning signals, categorical risk perception. <ul style="list-style-type: none"> • The meaning of information on pregnancy and STI risks • The advantages of abstinence • Preventing pregnancy and STI • Planning and communication skills practiced in role plays • Discussion of personal values that affect individuals decisions

EatFit	
Curriculum Goal:	Promote healthy nutrition and fitness choices to prevent obesity
Research Goal:	Because this is one of the first randomized-controlled evaluations of a nutrition and fitness curriculum, the results will serve as a springboard for future work.
Length:	14 hours
Based on:	University of California Cooperative Extension EatFit curriculum
Modifications:	Modified for use with older adolescence and to be 14 hours in length
Previous Research:	Small pilot study of 34 middle school students in California Expanded Food and Nutrition Education Program (EFNEP) found that participation in the curriculum improved dietary and physical activity behaviors and self-efficacy. Most participants also said they had made at least one lasting improvement to their nutrition and fitness behaviors.

Content Includes:	<ul style="list-style-type: none"> • 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
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Preliminary Results

• Because data collection and analyses are not yet complete, our results are preliminary. However, significant results point to the benefits for both curricula.

• After curriculum participation

- Participants enrolled in RTR increased their knowledge of risk and protection and agreement with gist statements, which relate to avoiding risk.
- Participants enrolled in EatFit improved their nutritional eating habits in a variety of measures (for example, eating more vegetables).
- These results are associated with the effectiveness of these curricula at improving health in their respective target areas.
- As this project continues, analyzing data from more participants and at 3, 6 and 12 month follow-up after curriculum completion will provide more informative results.



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

• Horowitz, M., Shills, M.K., & Townsend, M.S. (2004). EatFit: A Goal-Oriented Intervention that Challenges Adolescents to Improve Their Eating and Fitness Choices. *Journal of Nutrition Education and Behavior*, 36, 33-34.

• Mills, B. A. Theoretically motivated curricula for reducing sexual risk taking in adolescence: a randomized controlled trial. *Dissertation Presented to the Faculty of the Graduate School of Cornell University*, August 2009.

• Reyna, V.F., & Farley, F. (2006). Risk and rationality in adolescent decision making: Implications for theory, practice and public policy.