

REDUCING THE RISK PLUS (RTR+)

Best Evidence – Risk Reduction

INTERVENTION DESCRIPTION

Target Population

- Adolescents

Goals of Intervention

- Promote sexual risk reduction
- Prevent pregnancy
- Avoid sexually transmitted infections (STIs)

Brief Description

RTR+ is an adapted version of *Reducing the Risk (RTR)*, a group-level intervention for adolescents that focuses on emphasizing abstinence as well as prophylactic measures (e.g., using condoms) to reduce risk. *RTR+* shares all the content of *RTR*, including training on decision making and improving communication skills, but also emphasizes framing typical sexual decisions in ways that promote risk avoidance according to research on fuzzy-trace theory. A theory of memory and decision making, the central concept of fuzzy trace is the distinction between two kinds of mental representations of information: gist (“bottom-line meaning”) and verbatim (“literal facts”). The theory posits that adolescents take more risks than adults because they make decisions based on analysis of verbatim facts (i.e. the relatively low per-event risk of unprotected sex). Through educational activities in *RTR+*, information on risk is presented per event as well as the cumulative risk of repeated risky behavior, to help adolescents understand the “essence or bottom line” of the lessons (e.g., that some outcomes are essentially “certain” with repeated risk taking). The intervention encourages storage in memory of relevant values/beliefs and facilitates the ability to retrieve those values/beliefs at the time a decision is made.

Theoretical Basis

- Fuzzy-Trace Theory
- Social Learning Theory
- Social Inoculation Theory
- Theory of Reasoned Action/Planned Behavior

Intervention Duration

- Eight 2-hour sessions over the course of 2 to 3 weeks

Intervention Setting

- High schools, community centers, libraries and other settings

Deliverer

- Peer health educator

Delivery Methods

- Classroom lessons
- Group discussions
- Role plays

INTERVENTION PACKAGE INFORMATION

An intervention package is not available at this time. Please contact **Valerie F. Reyna**, Human Neuroscience Institute, G331, Martha Van Rensselaer Hall, Cornell University, Ithaca, NY 14853.

Email: vr53@cornell.edu for details on intervention materials.

EVALUATION STUDY AND RESULTS

The original evaluation was conducted in Arizona, Texas, and New York.

Key Intervention Effects

- Reduced number of sexual partners
- Delayed sexual initiation

Study Sample

The baseline study sample of 734 youth is characterized by the following:

- *45% white, 28% black or African American, 16% Hispanic/Latino*
- *57% female, 43% male*
- *Mean age of 16 years*

Recruitment Settings

High schools and local youth organizations

Eligibility Criteria

Participants were eligible if they were aged 14–19 years old.

Assignment Method

Youth (N = 734) were randomized to 1 of 3 study arms: Reducing the Risk (RTR) (n = 232), Reducing the Risk plus Fuzzy Trace (RTR+) (n = 291) or an attention control (n = 211).

Comparison Group

The attention control group learned about communication skills and did not discuss issues pertaining to adolescent sexuality.

Relevant Outcomes Measured and Follow-up Time

- Sexual risk behaviors (including number of sex partners, and initiation of sex among sexually abstinent youth from baseline to 12 months and condom use in the past 3 months) were measured at 3, 6, and 12 months post-intervention.

Participant Retention

- RTR Intervention
 - 73% retained at 3 months post-intervention
 - 93% retained at 6 months post-intervention
 - 86% retained at 12 months post-intervention

- RTR+ Intervention
 - 82% retained at 3 months post-intervention
 - 91% retained at 6 months post-intervention
 - 80% retained at 12 months post-intervention

- Attention control
 - 88% retained at 3 months post-intervention
 - 94% retained at 6 months post-intervention
 - 82% retained at 12 months post-intervention

Significant Findings

- Among participants who were sexually abstinent at baseline, compared to control participants, the odds of initiating sexual activity between the first and final intervals was 84% lower for participants assigned to RTR+ (interaction effect = .16, OR = 0.16, $p < .05$).
- RTR+ intervention participants reported significantly fewer sexual partners than control participants at 3 months post-intervention (adjusted mean = 1.48, SE = 0.16, $p < .05$), 6 months post-intervention (adjusted mean = 1.70, SE = 0.17, $p < .05$), and 12 months post-intervention (adjusted mean = 2.15, SE = 0.19, $p < .05$).
- Across the 4 assessments, RTR+ intervention participants reported a significantly lower increase in number of sexual partners compared to control participants (unstandardized $b = -.345$, SE = .165, $p < .05$).

Considerations

- Across the 4 assessments, compared to control participants, RTR+ intervention participants reported a significantly less favorable attitude toward sex ($p < .05$), more favorable attitude toward prophylaxis ($p < .001$), less permissive perception of peer norms regarding sex ($p < .05$), more favorable perception of whether or not peers use condoms ($p < .05$), elevated agreement with reasons not to have sex ($p < .001$), greater control over use of condoms ($p < .01$), improvement in knowledge of sexual risk, pregnancy, and STIs ($p < .001$) greater categorical risk perception ($p < .001$), and greater recognition of warning signals for risky sex ($p < .001$).
- Across the 4 assessments, 14 year old RTR+ intervention participants reported fewer perceived benefits of sex, when compared to 14 year old control participants ($p < .05$).
- Across the 4 assessments, 18 year old RTR+ intervention participants reported more perceived benefits of sex, when compared to 18 year old control participants ($p < .05$).
- Across the 4 assessments, Hispanic RTR+ intervention participants reported a significantly more favorable attitude toward prophylaxis and perceived significantly less permissive parental norms regarding sex, when compared to Hispanic control participants.
- Across the 4 assessments, white RTR+ intervention participants reported significantly more prophylactic self-efficacy and perceived behavioral control of prophylaxis, when compared to white control participants.
- RTR+ is an adapted version of RTR and shares the same content, but adds the gist of risks based on fuzzy trace theory. RTR did not produce significant intervention effects on relevant outcomes so it is not highlighted here.

Funding

National Institute of Mental Health (grant number R01MH-061211)

National Institute of Nursing Research (grant number R01NR014358-01)

National Science Foundation (grant number BCS-0840111)

REFERENCES AND CONTACT INFORMATION

Reyna, V. F., & Mills, B. A. (2014). [Theoretically motivated interventions for reducing sexual risk taking in adolescence: A randomized controlled experiment applying fuzzy-trace theory](#). *Journal of Experimental Psychology*, 143(4), 1627-1648.

Researcher: **Valerie F. Reyna**

Human Neuroscience Institute, G331

Martha Van Rensselaer Hall

Cornell University

Ithaca, NY 14853

Email: vr53@cornell.edu

