

Reducing the Risk: Impact Findings From The Teen Pregnancy Prevention Replication Study

| RESEARCH BRIEF |

This research brief highlights findings from the evaluation of *Reducing the Risk*, a sexual health curriculum developed to help prevent teen pregnancy, sexually transmitted infections (STIs), and associated sexual risk behaviors.

The findings are based on two follow-up surveys administered to study participants 12 and 24 months after they enrolled in the study. The study is designed to examine the impact of *Reducing the Risk* on adolescent sexual behavior as well as on cognitive and psychological aspects of adolescent functioning that might influence that behavior. The study includes data from three different replications of *Reducing the Risk*.

Summary of Findings

Overall, *Reducing the Risk* had no statistically significant impact on the five key behavioral outcome measures: sexual activity in the last 90 days (at 12 and 24 months), sexual intercourse without birth control in the last 90 days (at 12 and 24 months) and pregnancy between study entry and 24 months later.

However, exploratory analyses revealed significant site-level differences in program effects on behavior after 24 months. In one site, these analyses showed favorable program effects; in another they indicated unintended program effects. In addition, the program had significant unfavorable effects on sexual behavior among Hispanic youth.

After 12 months, *Reducing the Risk* demonstrated positive effects on some intermediate outcomes, namely knowledge about pregnancy risk and STI risk and attitudes towards birth control or condoms. These effects were sustained through the longer-term follow-up. After 24 months, there were additional program effects on motivation to delay childbearing and perceived condom negotiation skills. There were no effects on intentions to engage in sexual behaviors in the following year at either time point.

Reducing the Risk was effective in increasing knowledge about sexual risk behavior and producing more positive attitudes toward avoiding risk. However, after 24 months, there was no difference between youth who participated in Reducing the Risk and those who didn't in the level of sexual risk behaviors reported.

Background

The federal Teen Pregnancy Prevention (TPP) Program, administered by the Office of Adolescent Health (OAH), includes funding for interventions that address the issue of teenage pregnancy and STIs by replicating program models that have shown some evidence of effectiveness in reducing these outcomes and related behaviors.

The Teen Pregnancy Prevention (TPP) Replication Study

The purpose of the Teen Pregnancy Prevention (TPP) Replication Study, funded and overseen jointly by OAH and the Office of the Assistant Secretary for Planning and Evaluation (ASPE), is to test whether three program models, each previously shown to be effective in a single study, continue to demonstrate effectiveness when implemented with fidelity (that is, adherence to the core components of the program) across different settings and populations.

The study evaluated three replications of each of three evidence-based program models. The three program models tested are: the *Safer Sex Intervention (SSI)*, *¡Cuidate!*, and *Reducing the Risk*. Nine grantees funded under the TPP Program were selected to participate in rigorous experimental tests of the evidence-based programs they were implementing.

This brief, and the report it summarizes, focus on the impacts of *Reducing the Risk*[1].

What is *Reducing the Risk*?

Reducing the Risk is one of the programs previously identified as having evidence of effectiveness (delayed initiation of sex and less unprotected sex among those who were sexually inexperienced at baseline), and therefore eligible for replication funding under the TPP program.[2] The curriculum focuses on changing sexual behaviors, such as initiation of sexual intercourse, abstinence, use of condoms and use of contraception.

Reducing the Risk consists of 16 units of 45 minutes each. The sessions are highly interactive and encourage active participation by students. The program includes mini-lectures and worksheets, and it places great emphasis on skills practice and problem solving through group discussions and role plays. It can be delivered in high school classrooms and the guidance offered by its distributor suggests that it is appropriate for students of all ethnicities.

The Evaluation of *Reducing the Risk*

From the grants awarded in 2010 by OAH, three grantees were selected to provide a strong test of the program model. In each replication site, the program was delivered by grantee and partner staff trained by the program distributor.

Grantees Selected

- ***Better Family Life**, a non-profit agency established more than 30 years ago and based in St Louis, MO.*
- ***LifeWorks**, a private non-profit agency that provides services to youth and families throughout Travis County. It is based in Austin, TX.*
- ***San Diego Youth Services**, a non-profit organization serving youth and families in San Diego County. It is based in San Diego, CA.*

In all three replications, *Reducing the Risk* was delivered in public school classrooms, as part of the regular school day. The program was offered primarily in 8th or 9th grade. LifeWorks implemented the program in 9th and 10th grades (with some older students).

1 The report that accompanies this research brief is one in a series of reports that present findings from the TPP Replication Study. Two additional reports present findings from the evaluations of the other two program models (*SSI* and *¡Cuídate!*). A companion set of three reports presents findings on the implementation of the program models. Three earlier reports describe findings from the short-term follow-up survey.

2 US Department of Health and Human Services, Office of Adolescent Health, Office of Public Health and Science. Teenage pregnancy prevention: Replication of evidence-based programs. Funding opportunity announcement and application instructions. Washington, DC: Author; 2010.

Research Design

Experimental design:

- *Random assignment of classes within schools*

Data collected at:

- *Baseline*
- *12 months after baseline*
- *24 months after baseline*

Outcome Measures

Non-Behavioral, Intermediate Outcomes:

- ***Knowledge of pregnancy and STI risk***
- ***Attitudes towards protection and risky sexual behaviors***
- ***Motivation and intention to avoid risk***
- ***Negotiation skills***

Behavioral Outcomes and Consequences:

- ***Sexual behavior (intercourse, oral, anal sex)***
- ***Unprotected sexual behavior***
- ***Pregnancy and/or STI***

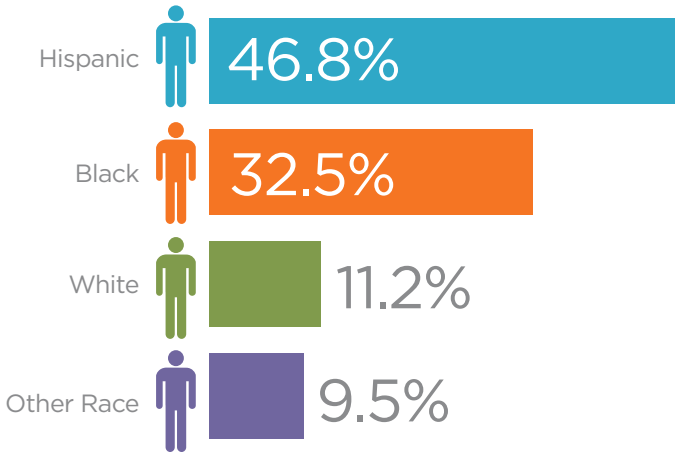
Analytic Strategy

- ***Use of pooled data for greater generalizability, improved power to detect impacts, and ability to explore effects on important subgroups***
- ***Pre-specification of limited number (five) of behavioral outcomes of greatest interest***
- ***Wide-ranging exploratory analyses of additional behavioral and non-behavioral outcomes and effects by site and on subgroups***

Youth in the Study

Females constituted half of the study sample. Slightly less than half were Hispanic, 33 percent were Black, and the remainder were divided between White (11%) and Other (10%), which includes Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, Multiracial, or undisclosed race (Figure 1).

FIGURE 1. RACE/ETHNICITY OF STUDY PARTICIPANTS AT BASELINE



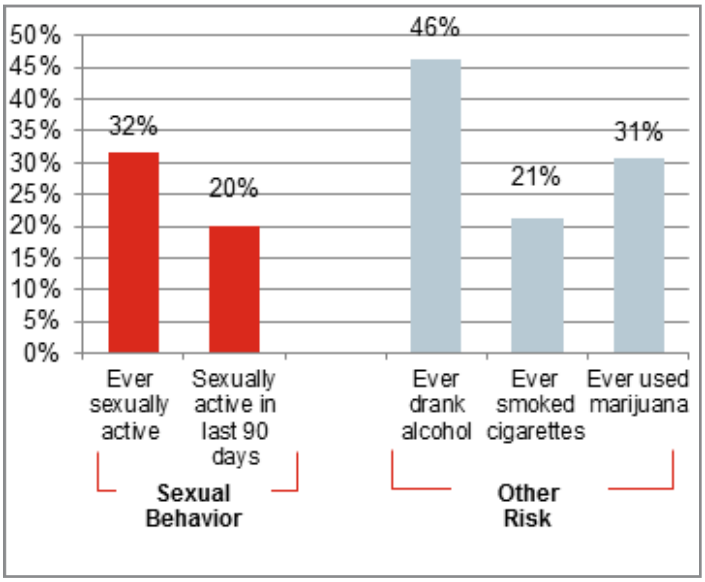
Source: Baseline survey completed prior to random assignment

The demographic profiles of study participants differed significantly by site. The racial and ethnic composition of the samples in San Diego Youth Services and LifeWorks were relatively similar, with approximately two-thirds Hispanic. The Better Family Life sample was significantly different from the sample in the other two sites, in that nearly 90 percent of students were Black.

When they entered the study, youth were 14.5 years old, on average. However, in San Diego Youth Services, where the program was implemented in some 8th grade classrooms, the average age of students was 13.7 years—almost one year younger than the average for the combined sample.

When the study began, just over 30 percent of the sample had ever been sexually active; a smaller percentage (20%) were sexually active in the 90 days before the baseline survey. Almost half had ever used alcohol; more than one-quarter had ever used marijuana and just over one-fifth had ever smoked cigarettes (Figure 2).

FIGURE 2. ENGAGEMENT IN RISK BEHAVIORS AT BASELINE



On all measures of behavioral risk, the younger San Diego Youth Services sample looked dramatically different from youth in the other two sites: very small proportions had engaged in any risk behaviors. By contrast, youth in Better Family Life and LifeWorks reported higher levels of sexual activity, of sexual risk behavior, and of other risk behaviors.

Program Impacts on Behavioral Outcomes

Did Reducing the Risk have impacts on sexual activity, sexual risk behavior, and/or consequences of sexual risk behavior?

No, the program had no overall impact on any of the five key behavioral outcomes of the study, after 12 or 24 months. Nor at either time-point did the program have significant effects on other sexual behavioral outcomes measured (Appendix Table 1).

Reducing the Risk had no significant impact on five key behavioral outcomes

There were no significant impacts on:

- *Sexual activity in the last 90 days, after 12 and 24 months*
- *Sexual intercourse without birth control in the prior 90 days, after 12 and 24 months*
- *Pregnancy over the course of the study*

Were there site-level differences in the effects of Reducing the Risk on behavioral outcomes?

Although, for the most part, there were few statistically-significant site-level differences in the effects of the program after 12 months, there were significant site-level differences in effects on behavioral outcomes after 24 months. Some of these site-level effects were favorable and some were unintended (Appendix Table 2 and Table 3).

After 24 months, Reducing the Risk had a significant favorable effect on pregnancy in Better Family Life; however, there were significant unintended program effects on sexual activity (sexual intercourse and oral sex in the last 90 days) in LifeWorks

Were there subgroup differences in the effect of Reducing the Risk on behavioral outcomes?

After 12 months, there were no significant differences in program effectiveness by gender, age, race/ethnicity, or sexual experience at baseline. However, after 24 months, there were unintended effects on sexual activity for Hispanic youth. Compared with their control group counterparts, program youth who were Hispanic were more likely to report engaging in sexual activity and oral sex in the last 90 days.

After 12 months, there were no significant differences in program effects for any subgroups. However, after 24 months, Reducing the Risk had significant unintended effects on sexual activity and oral sex in the last 90 days for Hispanic youth

Effects of the Program on Non-Behavioral Outcomes after 12 and 24 Months

Did Reducing the Risk have positive effects on non-behavioral outcomes?

Yes, the program had a positive effect on knowledge and attitudes after 12 and 24 months (Appendix Tables 4 and 5).

Reducing the Risk increased knowledge of sexual risk

After 12 and 24 months, compared with control students, students who were assigned to Reducing the Risk had significantly greater knowledge of:

- ✓ *Pregnancy Risk*
- ✓ *STI Risk*

Reducing the Risk improved attitudes toward protection

After 12 months, Reducing the Risk students reported significantly greater support for the use of birth control and condoms than students in the control group. The differences persisted after 24 months.

Reducing the Risk had no statistically significant effects on student attitudes toward risky sexual behavior. Even at baseline, the majority of students in both the treatment and control groups rejected the view that risky sexual behaviors were acceptable.

After 24 months, program youth were also more motivated to delay childbearing and more confident in their condom negotiation skills than were youth in the control group. The program had no effects on refusal skills or intentions for future sexual behavior at either time point.

After 24 months Reducing the Risk improved motivation to delay childbearing and perceived condom negotiation skills

Students who received Reducing the Risk were significantly more motivated to delay having a child.

Students who received Reducing the Risk reported significantly greater confidence in their ability to negotiate condom use with a partner, but did not feel better equipped to say "no" to unwanted sex.

Discussion

This study was designed to address important research and policy questions about the effectiveness of the evidence-based program, *Reducing the Risk*. The program is widely used and the major test of its effectiveness occurred many years ago. It seemed important to understand the extent to which it maintains its effectiveness in contemporary settings, in different locations and with a range of populations.

We found no evidence that RtR had an overall impact on behavior across multiple implementations of the program.

While *Reducing the Risk* significantly improved and sustained students' knowledge and attitudes, these positive effects on non-behavioral intermediate outcomes did not translate into significant favorable impacts on the five key behavioral outcomes selected to represent the primary goals of this and all other TPP programs. What this suggests for policymakers and local agency staff is that the original evidence on the effectiveness of RtR provides limited guidance on the likely effectiveness of the program in different locations or with certain populations.

The program had different effects in two of the three implementation sites and on one ethnic group.

While they do not modify the overall conclusion, the analyses conducted to explore differences in program effectiveness at the site level, and for different subgroups, produced some suggestive findings. These exploratory analyses revealed a pattern of favorable effects over time in one site. However, in another site and for a single subgroup, a pattern of unintended program effects emerged.

The search for plausible explanations for these findings did not reveal obvious answers. In each of the three sites, the program was implemented with fidelity and program attendance was relatively high. While there were, as noted earlier, differences in the youth population served in the three sites, those differences cannot readily be used to explain the differences in outcomes.

What the conflicting findings suggest is that context matters. It seems likely that interactions among the population served (in terms of both demographic characteristics and cultural beliefs), the attitudes and beliefs of the staff delivering the curriculum, and characteristics of the school settings, influenced the program's impact in complex ways. Additional research is needed to achieve a better understanding of these interactions and their effects to help clarify when *Reducing the Risk* might work and when it might not.

Appendix Tables

TABLE 1. SHORT-TERM AND LONGER-TERM IMPACTS OF *REDUCING THE RISK* ON SEXUAL ACTIVITY, SEXUAL RISK BEHAVIOR, AND CONSEQUENCES

Outcome	Short-term Impacts				Longer-term Impacts			
	Adjusted Treatment Mean [a]	Unadjusted Control Mean	Treatment Effect [b]	*p*-value	Adjusted Treatment Mean [a]	Unadjusted Control Mean	Treatment Effect [b]	*p*-value
Sexual Behavior								
Sexual activity (percentage responding affirmatively)								
Recently sexually active (in the last 90 days) [c]	28.02	28.14	-0.11	.946[d]	35.95	34.35	1.59	.378 [d]
Sexual intercourse in the last 90 days	23.66	24.37	-0.72	.671	31.32	29.64	1.68	.361
Oral sex in the last 90 days	19.24	19.50	-0.26	.871	25.81	25.10	0.70	.677
Initiation of sexual activity [c]	24.98	21.96	3.02	.156	37.96	34.19	3.77	.118
Sexual risk behavior (percentage responding affirmatively)								
Sexual intercourse without birth control (in the last 90 days)	8.73	8.99	-0.25	.815[d]	12.09	11.64	0.45	.719[d]
Sexual intercourse without a condom (in the last 90 days)	13.57	15.38	-1.81	0.178	20.12	19.32	0.80	.604
Oral sex without a condom (in the last 90 days)	16.20	17.33	-1.13	0.444	22.39	22.21	0.17	.912
Consequences of sexual risk behavior (percentage responding affirmatively)								
Pregnant or gotten someone pregnant since baseline					5.53	5.91	-0.38	.683 [e]
Diagnosed with STI in the last 12 months					1.66	1.81	-0.15	.777

Source: Follow-up surveys administered 12 months after baseline and 24 months after baseline.

Notes: Short-term results in this table are based on 2,661–2,667 respondents who provided valid survey responses to relevant items. Longer-term results are based on 2,720–2,780 respondents who provided valid responses to relevant items.

a The treatment group mean is regression adjusted, calculated as the sum of the unadjusted control group mean and the regression-adjusted impact estimate (treatment effect).

b The treatment effect was estimated in a multi-level model that controls for randomization blocks and other covariates. The treatment effect is expressed as a difference in percentage points. Due to rounding, reported treatment effects may differ from differences between reported means for the treatment and control groups.

c Sexual activity is defined differently across grantees. In Better Family Life, sexual activity refers to sexual intercourse, oral sex, and/or anal sex. Youth were not asked about anal sex in LifeWorks or San Diego Youth Services. The sample size for the initiation of sexual activity outcome at the short-term is 1,836, as this outcome only includes youth who were not sexually active at baseline. The sample size at the longer-term is 1,932.

d After application of a Benjamini-Hochberg (1995) correction for two tests within this outcome domain, the criterion for statistical significance is p<.05 if both tests have p-values less than .05, and .025 if only one of the two tests has a p-value less than .05.

e Criterion for statistical significance is p<.05.

TABLE 2. SHORT-TERM EFFECTS OF *REDUCING THE RISK* ON SEXUAL ACTIVITY AND SEXUAL RISK BEHAVIOR BY SITE

Outcome	Better Family Life (n=934)				LifeWorks (n=848)				San Diego Youth Services (n= 885)				p-value for the Test of Differences Across Sites[a]
	Adj. T Mean[b]	Unadj. C Mean	T Effect[c]	*p*-value	Adj. T Mean[b]	Unadj. C Mean	T Effect[c]	*p*-value	Adj. T Mean[b]	Unadj. C Mean	T Effect[c]	*p*-value	
Sexual activity (percentage responding affirmatively)													
Recently-sexually active (in last 90 days)[d]	38.35	41.37	-3.02	.285	35.29	31.13	4.16	.160	10.99	12.30	-1.31	.672	.193
Sexual intercourse in the last 90 days	32.71	39.34	-6.63 *	.015	30.87	25.74	5.13	.073	8.65	8.62	0.03	.992	.011 *
Oral sex in the last 90 days	23.06	23.29	-0.23	.932	26.82	25.55	1.27	.647	7.44	9.42	-1.98	.497	.722
Sexual risk behavior (percentage responding affirmatively)													
Sexual intercourse without birth control (in last 90 days)	11.20	13.11	-1.91	.300	12.33	11.03	1.30	.493	2.83	2.87	-0.04	.984	.475
Sexual intercourse without a condom (in last 90 days)	17.47	22.13	-4.66 *	.037	19.65	19.85	-0.20	.933	3.93	4.18	-0.25	.918	.282
Oral sex without a condom (in last 90 days)	17.89	19.45	-1.56	0.529	23.97	23.83	0.14	.956	6.35	8.38	-2.03	.455	.827

Source: Follow-up survey administered 12 months after baseline.

a This column shows the results for statistical tests of whether the treatment effect varies among the three sites.

b The treatment group mean is regression-adjusted, calculated as the sum of the unadjusted control group mean and the regression adjusted impact estimate (treatment effect).

c The treatment effect was estimated in a multi-level model that controls for randomization blocks and other covariates. The treatment effect is expressed as a difference in percentage points. Due to rounding, reported treatment effects may differ from differences between reported means for the treatment and control groups.

d Sexual activity is defined differently across grantees. In Better Family Life, sexual activity refers to sexual intercourse, oral sex, and/or anal sex. Youth were not asked about anal sex in LifeWorks or San Diego Youth Services.

** p<.05, ** p<.01, *** p<.001 (two-tailed tests).*

TABLE 3. LONGER-TERM EFFECTS OF *REDUCING THE RISK* ON SEXUAL ACTIVITY, SEXUAL RISK BEHAVIOR, AND CONSEQUENCES BY SITE

Outcome	Better Family Life (n=854)				LifeWorks (n=894)				San Diego Youth Services (n= 1,033)				*p*-value for the Test of Differences Across Sites[a]
	Adj. T Mean[b]	Unadj. C Mean	T Effect[c]	*p*-value	Adj. T Mean[b]	Unadj. C Mean	T Effect[c]	*p*-value	Adj. T Mean[b]	Unadj. C Mean	T Effect[c]	*p*-value	
Sexual consequences (percentage responding affirmatively)													
Sexual activity (percentage responding affirmatively)[d]													
Recently sexually active (in last 90 days)	42.85	47.71	-4.86	.121	46.87	38.30	8.57**	.005	21.49	20.76	0.73	.805	.008**
Sexual intercourse in the last 90 days	38.02	42.81	-4.79	0.126	42.16	33.94	8.22**	.007	17.25	15.85	1.40	.648	.012*
Oral sex in the last 90 days	26.71	32.62	-5.91*	.043	36.65	30.11	6.54*	.021	15.88	14.73	1.15	.680	.009**
Sexual risk behavior (percentage responding affirmatively)													
Sexual intercourse without birth control (in last 90 days)	12.07	14.68	-2.61	.239	18.75	14.91	3.84	.071	6.18	6.25	-0.07	.973	.105
Sexual intercourse without a condom (in last 90 days)	23.76	24.46	-0.70	.797	28.92	25.46	3.46	.193	9.16	9.60	-0.44	.868	.467
Oral sex without a condom (in last 90 days)	21.87	25.30	-3.43	.218	32.86	28.51	4.35	.107	13.25	13.84	-0.59	.825	.126
Sexual consequences (percentage responding affirmatively)													
Pregnant or gotten someone pregnant since baseline	8.34	12.15	-3.81*	.024	7.35	5.15	2.20	.174	2.17	2.06	0.11	.942	.034*
Diagnosed with STI in the last 12 months	3.38	3.94	-0.56	.557	1.92	1.38	0.54	.554	0.24	0.67	-0.43	.620	.651

Source: Follow-up survey administered 24 months after baseline.

a This column shows the results for statistical tests of whether the treatment effect varies among the three sites.

b The treatment group mean is regression-adjusted, calculated as the sum of the unadjusted control group mean and the regression adjusted impact estimate (treatment effect).

c The treatment effect was estimated in a multi-level model that controls for randomization blocks and other covariates. The treatment effect is expressed as a difference in percentage points

d Sexual activity is defined differently across grantees. In Better Family Life, sexual activity refers to sexual intercourse, oral sex, and/or anal sex. In LifeWorks and San Diego Youth Services, students were not asked about anal sex.

** p< .05, ** p< .01, *** p< .001 (two-tailed tests).*

TABLE 4. SHORT-TERM EFFECTS OF *REDUCING THE RISK* ON NON-BEHAVIORAL INTERMEDIATE OUTCOMES

Outcome	Adjusted Treatment Mean[a]	Unadjusted Control Mean	Treatment Effect[b]	SES[c]	*p*-value
Knowledge[d]					
Knowledge of pregnancy risk	65.55	61.55	4.01***		.000
Knowledge of STI risk	60.47	56.21	4.26***		.000
Attitudes					
Attitudes toward protection[e]	3.18	3.13	0.05***	0.13	.000
Attitudes toward risky sexual behavior[f]	5.32	4.53	0.80		.161
Motivation[e]					
Motivation to delay childbearing	3.68	3.68	-0.01	-0.01	.741
Intentions (to engage in the following behaviors in the next 12 months) [g] (%)					
Sexual intercourse	52.67	50.69	1.97		.280
Oral sex	42.41	43.27	-0.86		.632
Use birth control if they were to have sexual intercourse	90.39	89.67	0.72		.537
Use a condom if they were to have sexual intercourse	91.21	92.11	-0.90		.403
Skills[e]					
Perceived refusal skills	3.12	3.08	0.04	0.06	.132
Perceived condom negotiation skills	3.53	3.50	0.03	0.06	.177

Source: Follow-up survey administered 12 months after baseline.

Notes: Results in this table are based on 2,654-2,689 respondents who provided valid survey responses to relevant items.

aThe treatment group mean is regression-adjusted, calculated as the sum of the control group mean and the regression adjusted impact estimate (treatment effect).

bThe treatment effect was estimated in a multi-level model that controls for randomization blocks and other covariates. For outcomes reported as percentages, the treatment effect is expressed in percentage points. For scale outcomes, the treatment effect is expressed in the original metric of the outcome variable. Due to rounding, reported treatment effects may differ from differences between reported means for the treatment and control groups.

cThe "SES" is the standardized effect size of the difference. For outcomes that are not reported as percentages, the SES is the "Treatment Effect" divided by the pooled standard deviation of the treatment and control groups.

d Scores represent the average percent of items answered correctly.

e Scale score averages responses ranging from 1 to 4. Higher scores indicate more positive attitudes, higher motivation or greater certainty about skills.

f Score represents the average percent of items agreed with (ranging from 0 to 100). Higher values represent more support for risky sexual behavior.

g Dichotomous variables, reported as percentage of respondents who responded affirmatively.

** p< .05, ** p< .01, *** p< .001 (two-tailed tests).*

TABLE 5. LONGER-TERM IMPACTS OF *REDUCING THE RISK* ON NON-BEHAVIORAL OUTCOMES

Outcome	Adjusted Treatment Mean[a]	Unadjusted Control Mean	Treatment Effect[b]	SES[c]	p-value
Knowledge[d]					
Knowledge of pregnancy risk	68.79	64.41	4.38***		.000
Knowledge of STI risk	61.68	59.52	2.16**		.010
Attitudes					
Attitudes toward protection[e]	3.16	3.13	0.03*	0.08	.027
Attitudes toward risky sexual behavior[f]	6.00	5.52	0.49		.448
Motivation[e]					
Motivation to delay childbearing	3.66	3.61	0.05*	0.09	.025
Intentions (to engage in the following behaviors in the next 12 months) [g] (%)					
Sexual intercourse	60.47	58.68	1.79		.331
Oral sex	50.36	51.78	-1.43		.406
Use birth control if they were to have sexual intercourse	89.52	88.75	0.77		.523
Use a condom if they were to have sexual intercourse	89.90	88.96	0.93		.447
Skills[e]					
Perceived refusal skills	3.18	3.15	0.03	0.04	.263
Perceived condom negotiation skills	3.53	3.49	0.04*	0.08	.030

Source: Follow-up survey administered 24 months after baseline.

Notes: Results in this table are based on 2,764-2,799 respondents who provided valid survey responses to relevant items.

aThe treatment group mean is regression-adjusted, calculated as the sum of the control group mean and the regression adjusted impact estimate (treatment effect).

bThe treatment effect was estimated in a multi-level model that controls for randomization blocks and other covariates. For outcomes reported as percentages, the treatment effect is expressed in percentage points. For scale outcomes, the treatment effect is expressed in the original metric of the outcome variable. Due to rounding, reported treatment effects may differ from differences between reported means for the treatment and control groups.

cThe "SES" is the standardized effect size of the difference. For outcomes that are not reported as percentages, the SES is the "Treatment Effect" divided by the pooled standard deviation of the treatment and control groups.

d Scores represent the average percent of items answered correctly.

e Scale score averages responses ranging from 1 to 4. Higher scores indicate more positive attitudes, higher motivation, or greater certainty about skills.

f Score represents the average percent of items agreed with (ranging from 0 to 100). Higher values represent more support for risky sexual behavior.

g Dichotomous variables, reported as percentage of respondents who responded affirmatively.

** p< .05, ** p< .01, *** p< .001 (two-tailed tests).*

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