



# *iCuidate!*: Impact Findings From The Teen Pregnancy Prevention Replication Study

## | RESEARCH BRIEF |

This research brief highlights findings from the evaluation of *iCuidate!*, an HIV/AIDS prevention program culturally tailored to Latino youth.

The findings are based on two follow-up surveys administered to study participants six and 18 months after they enrolled in the study. The study is designed to examine the impact of *iCuidate!* on adolescent sexual behavior as well as on cognitive and psychological aspects of adolescent functioning that might influence that behavior. The study included data from three different replications of *iCuidate!*.

### Summary of Findings

After 18 months *iCuidate!* had no statistically significant impact on the five primary behavioral outcome measures: sexual activity in the last 90 days (at 6 and 18 months), sexual intercourse without birth control in the last 90 days (at 6 and 18 months) and unplanned pregnancy at any time since entry into the study.

However, exploratory analyses revealed significant differences among certain subgroups. After 6 months, the program had significant unintended effects on sexual behavior among White youth and

youth who were sexually experienced at baseline. These differences did not persist at the longer-term follow-up.

In the short term, *iCuidate!* demonstrated positive effects on some intermediate outcomes, namely knowledge about pregnancy risk and STI risk and attitudes towards sexual risk behaviors, as well as perceived negotiation skills. Some, though not all, of these effects were sustained through the long-term follow-up. There were no program effects on motivation or on intentions to engage in sexual behaviors in the following year at either time point.

*After 6 months, iCuidate! increased knowledge about sexual risk behavior, and produced more positive attitudes toward avoiding risk and increasing negotiation skills. After 18 months, there was no difference between youth who participated in iCuidate! 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)*, *iCuidate!*, and *Reducing the Risk (RtR)*. 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 *iCuidate!*<sup>1</sup>

## What is *iCuidate!*?

*iCuidate!* is one of a handful of programs designed to address the issue of sexual risk behavior specifically in Hispanic<sup>2</sup> adolescents, and one of the few that met the standards for inclusion on the list of evidence-based programs from which TPP grantees could choose.<sup>3</sup>

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 *RtR*). 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 Although the terms Hispanic and Latino are often used interchangeably, since federal data use Hispanic, we use that term when referring to estimates reported by federal agencies.

3 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.

Six 60-minute modules are delivered in English to small groups of youth, led by a trained facilitator who is bilingual in English and Spanish.

## The Evaluation of *iCuidate!*

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

### Grantees Selected

- **Community Action Partnership of San Luis Obispo County (CAP)**, a non-profit agency founded in 1965 and based in San Luis Obispo, CA.
- **La Alianza Hispania**, a non-profit advocacy and service organization, founded in 1970 and based in Boston, MA.
- **Touchstone Behavioral Health**, a 30-year-old non-profit organization based in Phoenix, AZ.

Settings for the program varied across replications and included public high schools (traditional, vocational-technical, and charter), middle schools, a summer youth employment program, and a summer youth sports program.

### Research Design

#### Experimental design:

- *Random assignment of individuals within settings*

#### Data collected at:

- *Baseline*
- *6 months after baseline*
- *18 months after baseline*

## Outcome Measures

### Non-Behavioral, Intermediate Outcomes:

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

### Behavioral Outcomes and Consequences:

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

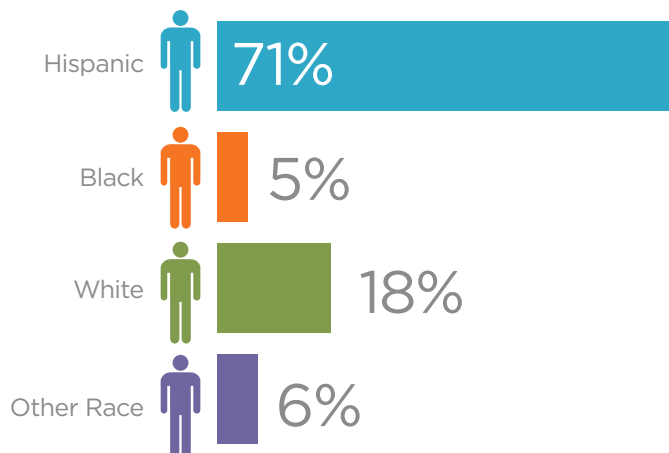
## Analytic Strategy

- 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 more than half of the study sample. More than 70 percent were Hispanic, 17 percent were White and the remainder were divided between Black (5%) and Other (8%), which includes Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, or Multiracial (Figure 1).

FIGURE 1. RACE/ETHNICITY OF STUDY PARTICIPANTS AT BASELINE



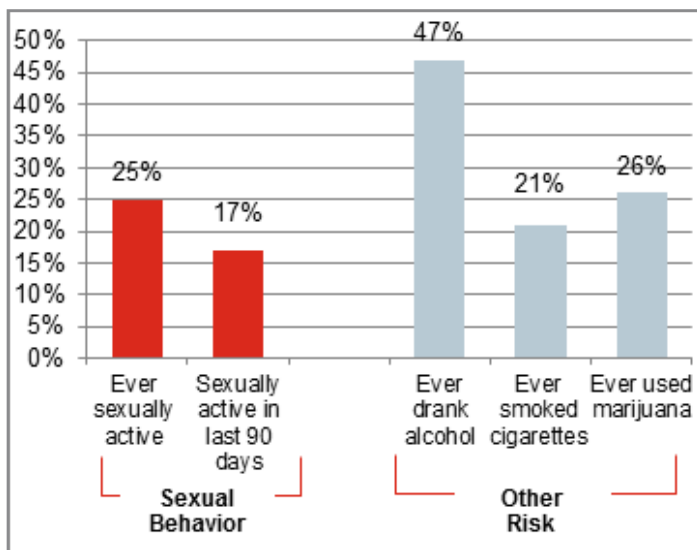
Source: Baseline survey completed prior to random assignment.

The demographic profiles of study participants differed significantly by site. The racial and ethnic composition of the Community Action Partnership sample was significantly different from the sample in the other two sites. Just over half were Hispanic and there were significantly more White students and students who classified themselves as Other.

When they entered the study, youth in the study sample were 14.4 years old, on average. However, in Touchstone, where the program was implemented only in 8th grade classrooms, the average age of students was about 13 years—more than one year less than the average for the combined sample.

When the study began one-quarter of the sample had ever been sexually active; a smaller percentage (17%) were sexually active in the 90 days before the baseline survey. Almost half had ever used alcohol; 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 Touchstone sample looked dramatically different from youth in the other two sites: very small proportions had engaged in any risk behaviors. By contrast, youth in La Alianza consistently reported the highest levels of sexual activity and of sexual risk behavior.

## Program Impacts on Behavioral Outcomes

### *Did ¡Cuídate! have impacts on sexual activity, sexual risk behavior, and/or consequences of sexual risk behavior?*

No, the program had no overall impacts on any of the five key behavioral outcomes of the study, at six and 18 months. Nor, at either time-point, did the program have significant effects on other sexual behaviors measured (Appendix Table 1)

#### ***¡Cuídate! had no significant impact on five primary behavioral outcomes***

*There were no significant impacts on:*

- *Sexual activity in the prior 90 days, after 6 and 18 months*
- *Risky sexual behavior (intercourse without birth control) in the prior 90 days, after 6 and 18 months*
- *Pregnancy over the course of the study.*

### *Were there site-level differences in the effects of ¡Cuídate! on behavioral outcomes?*

For the most part, there were no significant differences in the site-level effects of the program; however, after 18 months, and in one site, there was an important and significant effect on pregnancy. Youth who participated in the La Alianza replication of the program were less likely to report having been pregnant, or having gotten someone pregnant (Appendix Table 3).

#### ***¡Cuídate! had a significant favorable effect on pregnancy in La Alianza***

*After 18 months, youth who participated in ¡Cuídate! were significantly less likely to report having been pregnant or having gotten someone pregnant than youth in the control group.*

### *Were there subgroup differences in the effect of ¡Cuídate! on behavioral outcomes?*

There was variation in program effects for some subgroups and the effects differed over time. In the short term, the program had unintended effects on some subgroups; these did not persist over time. In the longer-term, ¡Cuídate! had a significant positive effect on pregnancy outcomes for some subgroups - an effect that probably reflects the site-level effect reported above.

#### ***After six months, ¡Cuídate! had some unintended effects on sexual behavior for some subgroups:***

- *Youth who were sexually experienced at baseline were significantly more likely to report having sexual intercourse in the 90 days prior to the survey*
- *White Youth in the program group were more likely to report having oral sex in the prior 90 days and having oral sex without a condom in the same time period.*

#### ***After 18 months, ¡Cuídate! had no significant effects on sexual behavior for any subgroup and had a significant favorable effect on pregnancy for some subgroups:***

- *Program youth in certain subgroups (those who were sexually experienced at baseline, older, and Hispanic) were significantly less likely to report having been pregnant or having gotten someone pregnant than were their control group counterparts.*
- *The favorable program effects for these subgroups held true only for La Alianza, and not for the other two replications, reflecting the site-level effect.*

## Effects of the Program on Non-Behavioral Outcomes after 6 and 18 Months

### *Did iCuídate! have positive effects on non-behavioral outcomes?*

Yes, the program had a positive effect on the knowledge, attitudes, and skills of youth after six months and most of these effects persisted after 18 months (See Appendix Tables 4 and 5).

#### ***iCuídate! increased knowledge of sexual risk***

*After six months, compared with control students, students who received iCuídate! had significantly greater knowledge of:*

- ✓ *Pregnancy Risk*
- ✓ *STI Risk*

*After 18 months, students who participated in iCuídate! remained significantly better informed about STI risk.*

#### ***iCuídate! improved attitudes toward protection***

*After six months, iCuídate! students reported significantly greater support for the use of birth control and condoms than students in the control group. The differences persisted after 18 months.*

*iCuídate!* 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 behaviors were acceptable.

*iCuídate!* had no effect on students' motivation or on intentions to engage in sexual behaviors in the following year. Students in both the treatment and control groups were highly motivated to avoid childbearing at baseline and later. Similarly, almost all students expressed a belief in the importance of delaying childbearing until personal goals were achieved.

#### ***iCuídate! improved negotiation and refusal skills***

*After six months, students who received iCuídate! 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.*

*After 18 months, students who received iCuídate! remained significantly more confident of their ability to negotiate condom use, and also were significantly more confident that they could refuse unwanted sex.*

## Discussion

This study was designed to address important research and policy questions about the effectiveness of the evidence-based program, *iCuídate!*, and what happens when it's taken to scale, replicated with different populations, and in different settings.

**We found no evidence that it is possible to replicate the behavioral effects reported in the original study, or to achieve other behavioral outcomes, across multiple implementations of the program.**

While *iCuídate!* significantly improved and sustained students' knowledge of and attitudes towards sexual risk behavior and ways to prevent negative outcomes, these positive effects on intermediate outcomes were not reflected in significant favorable effects on the five key behavioral outcomes that represent the goals of this and all other TPP programs. What this suggests for policymakers and local agency staff is that the initial evidence provides little guidance for assessing the likely effectiveness of the program in different locations or with certain populations.

**In one of the three replication sites, there was a significant reduction in the incidence of pregnancy at the long-term follow-up.**

This finding is bolstered by three subgroup findings for the same outcome: Hispanic youth, youth who were sexually experienced at baseline and older youth were significantly more likely to report fewer pregnancies than their control group counterparts.

These findings are specific to La Alianza, that is, the same pattern of findings does not appear in the other two replication sites. We conclude, therefore, that this finding is less likely attributable to chance but more likely a real (and robust) finding of positive program impact on an important outcome in a single site.

Differences in the populations served in the three replications may help explain the differential effects of the program. Youth in La Alianza were, on average, slightly older and more sexually experienced when they entered the program than youth in the other two sites. The ethnic profile of youth in the La Alianza replication differed from youth in the other two sites. Hispanic youth in Touchstone and CAP were primarily Mexican-Americans, most of whom were not recent immigrants. La Alianza served a more diverse Hispanic population that included Puerto Ricans, Dominicans, Colombians, Mexican-Americans and immigrants from other Central and South American countries, many of whose families were relative newcomers to the US.

Taken together with the absence of overall program impacts, these findings suggest that the program's positive effects may be limited to Hispanic youth relatively new to the influences of American culture. Youth from more settled Mexican-American families may be no more susceptible to *iCuidate!*'s culturally specific messages than are non-Hispanic youth. Based on this study, we cannot conclude that *iCuidate!* was effective, although exploratory analyses suggest that the program may be effective in some locations with certain subgroups of youth.

## Appendix Tables

**TABLE 1. SHORT TERM AND LONGER-TERM IMPACTS OF *iCUÍDATE!* ON SEXUAL BEHAVIOR, SEXUAL RISK BEHAVIOR AND CONSEQUENCES**

Outcome	Short-term Impacts				Longer-term Impacts			
	Adjusted Treatment Mean <sup>a</sup>	Unadjusted Control Mean	Treatment Effect <sup>b</sup>	p-value	Adjusted Treatment Mean <sup>a</sup>	Unadjusted Control Mean	Treatment Effect <sup>b</sup>	p-value
<b>Sexual Behavior</b>								
<b>Sexual activity (percentage responding affirmatively)</b>								
Currently sexually active (in the last 90 days) <sup>c</sup>	18.79	17.83	0.96	.516 <sup>d</sup>	27.93	26.59	1.34	.481 <sup>d</sup>
Sexual intercourse in the last 90 days	15.48	14.09	1.39	.312	23.52	22.52	1.00	.586
Oral sex in the last 90 days	14.69	13.13	1.56	.266	22.10	20.49	1.62	.368
Anal sex in the last 90 days <sup>e</sup>	2.48	2.87	-0.39	.704	3.70	4.30	-0.59	.646
Initiation of sexual activity <sup>c</sup>	14.62	12.86	1.76	.303	27.84	27.59	0.26	.911
<b>Sexual risk behavior (percentage responding affirmatively)</b>								
Sexual intercourse without birth control (in the last 90 days)	5.77	4.86	0.90	.383 <sup>d</sup>	7.83	7.46	0.36	.776 <sup>d</sup>
Sexual intercourse without a condom (in the last 90 days)	9.81	8.10	1.70	.157	14.38	14.79	-0.41	.799
Oral sex without a condom (in the last 90 days)	12.93	11.25	1.68	.211	20.12	18.86	1.26	.471
Anal sex without a condom (in the last 90 days) <sup>e</sup>	1.46	1.99	-0.53	.525	2.20	3.58	-1.38	.213
<b>Consequences of Sexual Risk Behavior (percentage responding affirmatively)</b>								
Pregnant or gotten someone pregnant since baseline					2.70	4.38	-1.68	.061 <sup>f</sup>
Diagnosed with STI in the last 12 months					0.78	0.95	-0.17	.722

Source: Follow-up surveys administered six and 18 months after baseline.

Note: Short-term results are based on 2,009–2,012 respondents who provided valid survey responses to relevant items, except for the items measuring anal sex (n=1,173). Longer-term results are based on 1,869–1,870 respondents who provided valid survey responses to relevant items, except for the items measuring anal sex (n=1,095) and pregnancy (n=1,849).

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 one-level fixed-effects regression 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 La Alianza and Community Action Partnership, sexual activity refers to sexual intercourse, oral sex, and/or anal sex. Youth were not asked about anal sex in Touchstone. The sample size for the initiation of sexual activity outcome at the short term is 1,526, as this outcome includes only youth who were not sexually active at baseline. The sample size at the longer-term follow-up is 1,426.

d After application of the 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 Youth were not asked about anal sex in Touchstone.

f Criterion for statistical significance is  $p < .05$ .

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

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

Outcome	Community Action Partnership (n= 486)				La Alianza (n= 688)				Touchstone (n= 838)				p-value for the Test of Differ- ences Across Sites <sup>a</sup>
	Adj. T Mean <sup>b</sup>	Unadj. C Mean	T Effect <sup>c</sup>	p- value	Adj. T Mean <sup>b</sup>	Unadj. C Mean	T Effect <sup>c</sup>	p- value	Adj. T Mean <sup>b</sup>	Unadj. C Mean	T Effect <sup>c</sup>	p- value	
<b>Sexual activity (percentage responding affirmatively)<sup>d</sup></b>													
Recently sexually active (in last 90 days) <sup>d</sup>	26.74	24.26	2.48	.398	28.61	28.97	-0.36	.889	7.12	6.03	1.09	.636	.764
Sexual intercourse in the last 90 days	21.65	17.82	3.83	.161	24.20	24.21	-0.01	.996	5.63	4.60	1.03	.630	.556
Oral sex in the last 90 days	23.24	19.31	3.93	.159	20.90	20.72	0.18	.941	5.25	4.03	1.22	.577	.587
Anal sex in the last 90 days <sup>d</sup>	0.69	1.98	-1.29	.407	3.89	3.59	0.30	.826					.441
<b>Sexual risk behavior (percentage responding affirmatively)</b>													
Sexual intercourse with- out birth control (in last 90 days)	8.81	6.44	2.37	.250	8.68	8.33	0.35	.846	1.89	1.44	0.45	.777	.712
Sexual intercourse with- out a condom (in last 90 days)	13.43	8.91	4.52	.058	16.49	15.08	1.41	.497	2.80	2.59	0.21	.909	.358
Oral sex without a con- dom (in last 90 days)	21.48	16.34	5.14	.053	18.05	17.93	0.12	.957	4.25	3.46	0.79	.703	.313
Anal sex without a con- dom (in last 90 days) <sup>d</sup>	0.39	1.98	-1.59	.210	2.27	1.99	0.28	.803					.267

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

a This column shows the results for statistical tests of whether the treatment effect varies across 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 (T Effect).

c The treatment effect was estimated in a one-level fixed-effects regression 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 La Alianza and Community Action Partnership, sexual activity refers to sexual intercourse, oral sex, and/or anal sex. Youth were not asked about anal sex in Touchstone.

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



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

Outcome	Community Action Partnership (n=448)				La Alianza (n=647)				Touchstone (n=776)				p-value for the Test of Differences Across Sites <sup>a</sup>
	Adj. T Mean <sup>b</sup>	Unadj. C Mean	T Effect <sup>c</sup>	p- value	Adj. T Mean <sup>b</sup>	Unadj. C Mean	T Effect <sup>c</sup>	p- value	Adj. T Mean <sup>b</sup>	Unadj. C Mean	T Effect <sup>c</sup>	p- value	
<b>Sexual Behavior</b>													
<b>Sexual activity (percentage responding affirmatively)<sup>d</sup></b>													
Recently sexually active (in last 90 days) <sup>d</sup>	39.30	36.36	2.94	.436	36.25	37.50	-1.25	.702	15.35	12.89	2.46	.404	.621
Sexual intercourse in the last 90 days	34.94	32.62	2.32	.524	32.08	32.76	-0.68	.829	10.67	9.12	1.55	.587	.797
Oral sex in the last 90 days	31.67	24.60	7.07*	.048	27.78	29.31	-1.53	.620	12.48	11.64	0.84	.764	.179
Anal sex in the last 90 days <sup>d</sup>	2.84	1.60	1.24	.528	4.49	6.47	-1.98	.247					.216
<b>Sexual risk behavior (percentage responding affirmatively)</b>													
Sexual intercourse with- out birth control (in last 90 days)	10.10	11.23	-1.13	.657	10.19	9.05	1.14	.605	4.73	4.09	0.64	.746	.783
Sexual intercourse with- out a condom (in last 90 days)	19.57	22.99	-3.42	.281	21.09	21.98	-0.89	.746	6.54	4.72	1.82	.462	.418
Oral sex without a con- dom (in last 90 days)	29.81	23.53	6.28	.072	25.57	27.16	-1.59	.599	10.56	10.06	0.50	.853	.219
Anal sex without a con- dom (in last 90 days) <sup>d</sup>	2.40	1.60	0.80	.637	2.15	5.17	-3.02*	.039					.087
<b>Sexual Consequences (percentage responding affirmatively)</b>													
Pregnant or gotten someone pregnant since baseline	4.68	4.37	0.31	.862	2.66	9.17	-6.51***	.000	1.94	0.94	1.00	.471	.001***
Diagnosed with STI in the last 12 months	-0.17	0.53	-0.70	.463	1.26	2.60	-1.34	.101	1.11	0.00	1.11	.135	.070

Source: Follow-up survey administered 18 months after baseline.

<sup>a</sup> This column shows the results for statistical tests of whether the treatment effect varies across the three sites.

<sup>b</sup> The treatment group mean is regression adjusted, calculated as the sum of the unadjusted control group mean and the regression-adjusted impact estimate (T Effect).

<sup>c</sup> The treatment effect was estimated in a regression 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.

<sup>d</sup> Sexual activity is defined differently across grantees. In La Alianza and Community Action Partnership, sexual activity refers to sexual intercourse, oral sex, and/or anal sex. Youth were not asked about anal sex in Touchstone.

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

**TABLE 4: SHORT-TERM EFFECTS OF *iCUÍDATE!* ON NON-BEHAVIORAL INTERMEDIATE OUTCOMES**

Outcome	Adjusted Treatment Mean <sup>a</sup>	Unadjusted Control Mean	Treatment Effect <sup>b</sup>	SES <sup>c</sup>	p-value
<b>Knowledge<sup>d</sup></b>					
Knowledge of pregnancy risk	67.07	60.95	6.12***		.000
Knowledge of STI risk	63.67	53.01	10.66***		.000
<b>Attitudes</b>					
Attitudes toward protection <sup>e</sup>	3.24	3.14	0.10***	0.24	.000
Attitudes toward risky behavior <sup>f</sup>	3.12	3.33	-0.21		.692
<b>Motivation<sup>e</sup></b>					
Motivation to delay childbearing	3.69	3.69	-0.00	-0.01	.907
<b>Intentions (to engage in the following behaviors in the next 12 months)<sup>g</sup></b>					
Sexual intercourse	40.38	39.07	1.31		.470
Oral sex	37.16	36.60	0.56		.762
Use birth control if they were to have sexual intercourse	93.23	92.42	0.80		.491
Use a condom if they were to have sexual intercourse	92.89	92.74	0.15		.898
<b>Skills<sup>e</sup></b>					
Perceived refusal skills	3.19	3.13	0.06	0.08	.062
Perceived condom negotiation skills	3.53	3.46	0.07**	0.14	.002

Source: Follow-up survey administered 6 months after baseline.

Notes: Results in this table are based on 1,996-2,022 respondents who provided valid survey responses to relevant items.

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

b The treatment effect was estimated in a one-level fixed-effects regression 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.

c The “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 percentage of items answered correctly.

e Scale score averages responses ranging from 1 to 4. Higher scores indicate higher levels of the outcome.

f Score represents the average percentage of items agreed with.

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

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$  (two-tailed tests).

**TABLE 5: LONGER-TERM EFFECTS OF *iCUIDATE!* ON NON-BEHAVIORAL INTERMEDIATE OUTCOMES**

Outcome	Adjusted Treatment Mean <sup>a</sup>	Unadjusted Control Mean	Treatment Effect <sup>b</sup>	SES <sup>c</sup>	p-value
<b>Knowledge<sup>d</sup></b>					
Knowledge of pregnancy risk	69.34	68.04	1.30		.323
Knowledge of STI risk	64.84	58.67	6.17***		.000
<b>Attitudes</b>					
Attitudes toward protection <sup>e</sup>	3.24	3.17	0.07***	0.16	.000
Attitudes toward risky behavior <sup>f</sup>	4.01	4.41	-0.40		.525
<b>Motivation<sup>e</sup></b>					
Motivation to delay childbearing	3.68	3.70	-0.02	-0.03	.563
<b>Intentions (to engage in the following behaviors in the next 12 months) <sup>g</sup> (%)</b>					
Sexual intercourse	50.53	51.97	-1.43		.494
Oral sex	46.89	45.57	1.32		.520
Use birth control if they were to have sexual intercourse	90.81	91.56	-0.75		.576
Use a condom if they were to have sexual intercourse	90.78	89.55	1.23		.391
<b>Skills<sup>e</sup></b>					
Perceived refusal skills	3.23	3.15	0.09*	0.11	.012
Perceived condom negotiation skills	3.56	3.49	0.07**	0.14	.004

Source: Follow-up survey administered 18 months after baseline.

Notes: Results in this table are based on 1,860-1,885 respondents who provided valid survey responses to relevant items.

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

b The treatment effect was estimated in a one-level fixed-effects regression 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.

c The “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 percentage of items answered correctly.

e This construct averages responses ranging from 1 to 4. Higher scores indicate higher levels of the outcome.

f Score represents the average percentage of items agreed with.

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

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



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