
Updated findings from the HHS Teen Pregnancy Prevention Evidence Review: August 2015 through October 2016

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Since 2009, the U.S. Department of Health and Human Services (HHS) has sponsored an ongoing systematic review of teen pregnancy prevention research to identify programs with evidence of effectiveness in reducing teen pregnancy, sexually transmitted infections (STIs), and associated sexual risk behaviors. The HHS Teen Pregnancy Prevention (TPP) Evidence Review was created in response to the 2010 Consolidated Appropriations Act, which indicates that teen pregnancy prevention programs must be “proven effective through rigorous evaluation to reduce teenage pregnancy, behavioral risk factors underlying teenage pregnancy, or other associated risk factors.” Mathematica Policy Research conducts the TPP Evidence Review, which is sponsored by the Office of the Assistant Secretary for Planning and Evaluation (ASPE), the Office of Adolescent Health (OAH) within the Office of the Assistant Secretary for Health, and the Family and Youth Services Bureau (FYSB) within the Administration for Children and Families (ACF).

As of June 2016, Mathematica had identified 44 programs meeting the review criteria for evidence of effectiveness. These criteria require programs to show evidence of at least one favorable, statistically significant impact on at least one sexual risk behavior or reproductive health outcome of interest (sexual activity, number of sexual partners, contraceptive use, STIs, or pregnancy). In addition, the supporting research studies must meet established criteria for the quality and execution of their research designs. The review team follows pre-specified criteria to assess study design, sample attrition, baseline equivalence, reassignment of sample members, and confounding factors. We detail the review procedures later in this brief.

Mathematica has recently updated the review findings to include research released from August 2015 to October 2016. As part of this update, the review team identified and assessed evidence for 15 programs not previously reviewed. Three of these 15 newly identified programs met the review criteria for evidence of effectiveness. The review team also identified and assessed newly available evidence for 25 programs assessed in previous rounds of the review. One of those 25 programs met the review criteria for evidence of effectiveness for this first time. Therefore, the total number of programs meeting the review criteria for evidence of effectiveness is now 48: 44 programs identified in earlier rounds of the review plus the 4 programs identified in the most recent update to the review findings.

Newly identified programs

The 15 newly identified programs (Table 1) varied in terms of their focus, target population, setting, and content. Three of these 15 programs met the review criteria for evidence of effectiveness, having a High or Moderate study rating and showing evidence of a favorable, statistically significant program impact on at least one sexual risk behavior or reproductive health outcome of interest (as designated by + in Table 1). A High or Moderate study rating is necessary for the findings to be deemed sufficiently credible evidence of program effectiveness.

For nine other programs, the supporting impact studies met the review criteria for a study quality rating of High or Moderate, but the study findings did not show favorable, statistically significant program impacts. For the remaining three programs, the supporting impact studies did not meet the review criteria for a High or Moderate study quality rating.

Nine of the 15 newly identified programs received funding from FYSB or from the OAH TPP program.

Table 1. Newly identified programs: evidence by outcome domain and study rating

Program	Outcome domains					Study rating ^a	FYSB or OAH funded ^b
	Sexual activity	Number of sexual partners	Contraceptive use	STIs	Pregnancy		
Programs with evidence of effectiveness							
Crossroads			+		DNMS	High	Yes
POWER Through Choices	0	0	0	0	+	High	Yes
Possessing Your Power			+			Moderate	Yes
Study quality meets standards, but no positive effects							
BUtiful			0	0	0	High	Yes
Family oriented HIV/STI reduction intervention integrated within multidimensional family therapy (MDFT-HIV)	DNMS		DNMS	0		High	No
Respecting the Circle of Life	0					High	No
Work It Out Together	0		0			High	No
Be Yourself/Sé Tú Mismo	0		0			Moderate	Yes

Program	Outcome domains					Study rating ^a	FYSB or OAH funded ^b
	Sexual activity	Number of sexual partners	Contraceptive use	STIs	Pregnancy		
Health Education Counseling				DNMS		Moderate	No
Need to Know (N2K)	0		0		0	Moderate	Yes
Pono Choices	0		0			Moderate	Yes
Web of Life	0					Moderate	Yes
Study Quality Does not meet evidence standards							
Computer-Assisted Motivational Intervention (CAMI)	n.a.	n.a.	n.a.	n.a.	n.a.	Low	No
Middle School Horizon Program	n.a.	n.a.	n.a.	n.a.	n.a.	Low	Yes
Web-based HIV, hepatitis, and STI prevention program	n.a.	n.a.	n.a.	n.a.	n.a.	Low	No

Note: 0, +, and – indicate evidence of null, favorable, and adverse effects, respectively. Empty cells indicate that the study did not examine program impacts on measures within that outcome domain. DNMS indicates that the findings for measures within the outcome domain did not meet the review standards (DNMS).

^a The review team established ratings for the supporting impact studies following pre-specified criteria to assess study design, attrition, baseline equivalence, reassignment of sample members, and confounding factors. See Table 2 below for a more detailed description.

^b This column indicates which programs received funding from FYSB or from the OAH TPP program.

n.a. = not applicable; following the procedures specified in the review protocol, the review team did not assess evidence of effectiveness for programs with a supporting impact study that received a Low quality rating.

A description of the three new programs meeting the review criteria for evidence of effectiveness, as well as a summary of the research evidence around these programs, are as follows:

Crossroads

Program summary: Crossroads is an intensive three-day intervention for older adolescents at risk of dropping out of school. Program participants meet for 6 to 7 hours per day over three consecutive days outside the regular school day (in the afternoon and during the weekend) in a community-based setting. Trained program facilitators lead a diverse range of activities, including small-group skill-building activities and discussion of how the program activities relate to the adolescents' sexual health, outdoor experiential activities, a tour of a community college campus, and a community service project. During the second and third days of the program, facilitators deliver a version of the *Be Proud! Be Responsible!* curriculum that was adapted so that its entire content could be covered in two days. The focus of the *Be Proud! Be Responsible!* curriculum is building knowledge about STIs, and HIV/AIDS, and teen pregnancy prevention.

Research summary: Crossroads was evaluated in a randomized controlled trial involving 1,174 adolescents ages 17 to 19 classified as high risk for dropping out of high school (Slater and Mitschke 2015). The study recruited participants from one alternative and six traditional high schools in the Arlington Independent School District in Texas. The study found that six months after the end of the program, adolescents participating in the intervention were significantly less likely than those in the study control group to report having had vaginal intercourse without using a condom in the past three months (odds ratio = 0.38, confidence interval = 0.59 to 0.79). For the follow-up conducted 3 months after the program ended, the study found no evidence of statistically significant program impacts on having vaginal, anal, and oral sexual intercourse without a condom. The study also examined program impacts on having sexual activity without using a condom and on ever being pregnant 12 months after the program ended. However, the findings for the 12-month follow-up did not meet the review standards because they were based on a sample with high attrition. The study met the review criteria for a High quality rating.

POWER Through Choices

Program summary: POWER Through Choices is a comprehensive sexual health education program focused on teen pregnancy, HIV, and STI prevention, and is designed to serve adolescents living in foster care, juvenile justice facilities, and other out-of-home care settings. The program includes 10 sessions, each lasting 90-minutes, delivered once or twice a week for 5 to 10 weeks. The sessions include interactive skill-building activities that emphasize self-empowerment and the impact of choices.

Research summary: POWER Through Choices was evaluated in a cluster randomized controlled trial involving 885 adolescents ages 13 to 18 recruited from 44 residential group homes in California, Maryland, and Oklahoma (Covington et al. 2016). The evaluation found that 12 months after the program ended, adolescents in the treatment group were significantly less likely to report ever been pregnant or gotten someone pregnant than the adolescents in the control group (odds ratio = 0.81, confidence interval = 0.75 to 0.88). In addition, 12 months after the end of the program the study found that the subgroup of female adolescents in the treatment group were significantly less likely to report ever been pregnant than their counterparts in the control group (odds ratio = 0.66, confidence interval = 0.56 to 0.77). The study showed no statistically significant impacts on any other sexual behavior outcomes assessed. The study met the review criteria for a High quality rating.

Possessing Your Power

Program summary: Possessing Your Power is a classroom-based youth character development curriculum designed for youth ages 10 to 18 (or in 6th to 12th grades). The curriculum includes 9 lessons covering topics such as self-esteem, conflict resolution, bullying, decision making, and leadership skills. The program also addresses adolescent risk behaviors, such as sexual activity, drug and alcohol use, tobacco use, violence and crime, pornography, and gambling. The curriculum materials on sexual activity take an abstinence-centered approach.

Research summary: Possessing Your Power was evaluated in a cluster randomized controlled trial involving 1,989 adolescents ages 13 to 17 (average age was 15 years) recruited from 48 community-based organization summer programs in Hampton Roads, Virginia (JK Tanner Inc.). In the study, researchers examined program impacts on a measure the study authors describe as “risky sexual behavior”, which is a binary variable that takes the value of 1 if the adolescent had unprotected sex, meaning the adolescent did not use a condom or birth control every time for recent sexual activity (in the past three months), and takes the value of 0 if the adolescent used a condom or birth control every time for recent sexual activity or if the adolescent avoided sexual activity in the previous three months. Six months after the program ended, researchers found that adolescents participating in the intervention who were sexually inexperienced at baseline were less likely to report that they did not use a condom or birth control every time for sexual activity in the past three months than their counterparts in the control group (odds ratio = 0.31, confidence interval = 0.19 to 0.52). The study found no evidence of statistically significant program impacts on that outcome for either the full sample or the subgroup of adolescents who reported being sexually experienced at baseline. The study met the review criteria for a Moderate quality rating.

New evidence for previously reviewed programs

The recent update to the review findings also sought to identify and assess any new evidence for programs examined in previous rounds of the review, several of which have been evaluated only once. However, a growing number of studies have sought to test how these programs perform when implemented on a broader scale, in different settings, or with different populations (Goesling 2015). As part of the update to the review findings, the review team identified and assessed 41 new publications on 25 programs examined in previous rounds of the review. Of those 41 new publications, 36 are reports or journal articles presenting the findings from studies funded through grants for 21 programs provided by FYSB or the OAH TPP program. Of the remaining 5 publications (on 4 programs), 1 received funding from the Centers for Disease Control and Prevention, 1 from the Health Resources and Service Administration, 2 from the National Institutes of Health, and 1 did not report its funding source.

For three of the 25 programs examined in previous rounds of the review, the newly assessed publications provided new evidence of positive impacts. One of these three programs met the review criteria for evidence of effectiveness for the first time. For the other two programs—which had met the review criteria for evidence of effectiveness in previous rounds of the review—the 3 newly assessed publications provide evidence of longer-term program impacts and/or youth outcomes not examined in previously assessed publications.

For the other 22 of the 25 programs examined in previous rounds of the review, the new publications did not materially affect the review team’s previous assessment of these programs or their impacts on other youth outcomes. That is, the program was previously determined to have evidence of effectiveness (15 programs), and the newly assessed publications did not change that assessment (29 publications), or the program was previously determined to not have evidence of effectiveness (7 programs), and the new research maintained that assessment (8 publications).

Nonetheless, the 37 new publications present new results, adding to the evidence-base on those 22 programs.

Below we provide a more detailed description of the new evidence of positive impacts available for three programs, which are the following: (1) Familias Unidas (program meeting the review criteria for evidence of effectiveness for the first time), (2) Positive Potential, and (3) Teen Options to Prevent Pregnancy (T.O.P.P.). We also provide a more detailed description of the findings from the 8 studies of the Teen Outreach Program (TOP), including six new studies of the program reviewed for the first time. One of the six studies provided new evidence of statistically significant program effects and 5 studies found no significant effects.

Familias Unidas

Program summary: Familias Unidas is a family-based, HIV prevention intervention specifically designed to serve Hispanic youth and their families. The Familias Unidas program includes eight 2-hour group sessions with the parents (alone), and four 1-hour family visits with parents and adolescents that are focused on increasing parent-adolescent communication about sex and HIV risks. An adapted version of the intervention, Brief Familias Unidas, reduces the duration of the program, including just five parent sessions and one family visit.

Research summary: The full version of the program has been evaluated in two studies, which were reviewed in previous rounds of the HHS TPP evidence review. The first, published in 2007, involved 266 Hispanic 7th grade students in Miami-Dade County middle schools and their families (Prado et al. 2007). The second, a 2012 study, involved 242 juvenile justice youth and their families in Miami-Dade County (Prado et al. 2012). Both studies met the review criteria for a High rating. However, neither of those two studies found evidence of statistically significant program impacts on student sexual risk behaviors. In the current round of the review, we assessed a more recently published study that involved 160 students in Miami-Dade County high schools and their families (Estrada et al. 2015). In this study, researchers examined the effectiveness of Brief Familias Unidas using a randomized controlled trial. The study reports that 24 months after the baseline survey, the adolescents in the group that received Brief Familias Unidas and who were not sexually experienced at baseline were less likely to have had initiated sex than their counterparts in the group that did not receive the program (odds ratio = 0.42, confidence interval = 0.27 to 0.65). The study met the review criteria for a High rating.

Positive Potential

Program summary: Positive Potential is a school-based, positive youth development program developed primarily for adolescents attending middle school in rural communities. The program is provided as a supplemental program to the health and physical education curricula adolescents receive as part of their middle school education. The Positive Potential program is a three-year program, offered in three middle school grades, where each grade level has a separate curriculum. At each grade level, the program offers five 45- to 50-minute classroom sessions on consecutive days and one class assembly.

Research summary: The program was evaluated in a randomized controlled trial involving 1,374 students in 14 public middle and elementary schools in northwestern Indiana (Piotrowski and Hedeker 2015, 2016a, 2016b). Students were in 6th grade at the time of study recruitment, and were offered the full three-year curriculum, until the end of 8th grade. The study conducted two follow-ups: one at the beginning of the 7th grade (about 12 months after the baseline), and the second 12 months after the end of the three-year program, in spring of 9th grade. We reviewed the findings for the 7th grade follow-up in a previous round of the review (Piotrowski and Hedeker 2015, 2016a), and in the current round of the review we assessed the findings for the 9th grade follow-up (Piotrowski and Hedeker 2016b). The study found that at the beginning of the 7th grade, adolescents in schools that delivered the program were significantly less likely to have had sexual intercourse, ever (odds ratio = 0.28, confidence interval = 0.15 to 0.55) and in the last three months (odds ratio = 0.21, confidence interval = 0.09 to 0.46). At the beginning of the 7th grade, the subgroup of males in the treatment group were also significantly less likely than their counterparts in the control group to have had sexual intercourse, ever (odds ratio = 0.08, confidence interval = 0.04 to 0.16) and in the last three months (odds ratio = 0.08, confidence interval = 0.03 to 0.21). Those program effects persisted 12 months after the program ended, in spring of 9th grade: in schools that implemented Positive Potential, both the full sample of students and the subgroup of males were significantly less likely to ever have had sexual intercourse (odds ratio is 0.78 for the full sample and 0.67 for the subgroup of males) and to have had sexual intercourse in the last 12 months (odds ratio is 0.76 for the full sample and 0.65 for the subgroup of males). In addition, the subgroup of males in the schools implementing Positive Potential were significantly less likely to have had sexual intercourse in the last three months than their counterparts in the schools not implementing the program (odds ratio = 0.62). The study met the review criteria for a Moderate quality rating.

Teen Options to Prevent Pregnancy (T.O.P.P.)

Program summary: T.O.P.P. is a clinic-based intervention for pregnant and parenting adolescent females. The T.O.P.P. program is delivered individually to program participants over 18 months through telephone calls from trained nurse educators provided about once a month, with greater call frequency during the initial months of the program and whenever participants are actively seeking and adopting new forms of birth control. The program promotes healthy birth spacing and use of effective contraception, and it provides direct access to contraceptive services through a program clinic and access to a program social worker.

Research summary: The program was evaluated in a randomized controlled trial involving 493 low-income expectant or adolescent new mothers in the Columbus, Ohio area (Kim et al. 2015; Rotz et al. 2016a). The study collected outcome data six and 18 months after study enrollment. We reviewed the findings for the six-month follow-up in a previous round of the review (Kim et al. 2015) and the findings for the 18-month follow-up in the current round of the review (Rotz et al. 2016a). The study found that six months after study enrollment, adolescents participating in the intervention were significantly less likely to report having had sex without using birth control in the past three months (odds ratio = 0.51, confidence interval = 0.39 to 0.66). Those program effects on sexual activity without use of birth control in the past three months persisted 18

months after study enrollment (odds ratio = 0.56). The study also found that 18 months after study enrollment, adolescents participating in T.O.P.P. were significantly less likely to report having had sex without using a condom in the past three months (odds ratio = 0.65, confidence interval = 0.52 to 0.81), having had a repeated pregnancy (odds ratio = 0.56), an unwanted pregnancy (odds ratio = 0.38), a pregnancy ending in a live birth in the past 18 months (odds ratio = 0.46), and fewer lifetime pregnancies (difference in regression-adjusted means = -0.30). The study met the review criteria for a High quality rating.

Teen Outreach Program (TOP).

Program summary: TOP is a positive youth development program that incorporates weekly curriculum-guided lessons, community service learning, and positive adult guidance and support. TOP is focused on key topics related to adolescent health and development, including healthy relationships, communication, influence, goal-setting, decision making, values clarification, community service learning, and adolescent development and sexuality. The program is facilitated using the experiential learning cycle, multiple intelligences, service learning, and the "Quad-A" approach where facilitators are adaptable, age-appropriate, affective, and active. TOP is provided in school, after-school, and community settings to adolescents 12 to 17 years old.

Research summary: The efficacy of this program was first established in a 1997 study that we assessed in a previous round of the review (Allen et al. 1997). The study involved 695 high school students attending grades 9 to 12 in high schools in 25 cities across the United States. The study found that female adolescents participating in the program were significantly less likely to report a pregnancy during the academic year of the program (odds ratio = 0.41, confidence interval = 0.26 to 0.64). A more recent study, published in 2015 and assessed in a previous round of the review, evaluated the program among a sample of 2,058 adolescents in 26 Florida high schools (Daley et al. 2015; Walsh-Buhi et al. 2016). The study successfully replicated the favorable program impact on pregnancy reported in the earlier 1997 study. In particular, for the follow-up conducted at the end of the program, the study found that students in the treatment group were less likely to report ever having been pregnant or gotten someone pregnant, and the reported effect size (odds ratio = 0.58) falls within the confidence interval for the effect size reported in the prior 1997 study. The study found a similar pattern of results for the longer-term follow-up survey conducted 10 months after the program ended (odds ratio = 0.51). The study also found a statistically significant program impact on sexual activity rates. In particular, for the follow-up conducted at the end of the program, the study found that students in the treatment group were statistically significantly less likely to report ever having had sex (odds ratio = 0.84, confidence interval = 0.78 to 0.90).

Six additional more recent studies (described in Appendix A), which we assessed for the current update of the review findings, examined the effectiveness of TOP when implemented with different populations and in different settings. The studies were conducted in Denver (Bull et al. 2015, 2016), Rochester (Crean et al. 2015; Robinson et al. 2016b), Kansas City (Philliber and Philliber 2016), Louisiana (Robinson et al. 2016a; Robinson et al. 2016b), Chicago (Seshadri et al. 2015), and across five northwestern states: Alaska, Idaho, Montana, Oregon, and Washington

(Philliber et al. 2015). All six studies used random assignment evaluation designs and met the review criteria for either a Moderate (five studies) or High (the study conducted across five northwestern states) quality rating. Four of the six studies failed to replicate the favorable impacts on pregnancy and sexual activity rates found in the earlier 1997 and 2015 studies, respectively. Specifically, the Kansas City and the Rochester study found that adolescents in the group receiving TOP were no less likely than adolescents in the control group to report ever having sex (odds ratio = 0.96 in the Kansas City study, odds ratio = 0.68 in the Rochester study). The Louisiana study found that immediately after the end of the program, the subgroup of adolescents in the group receiving TOP who were sexually inexperienced at baseline were no less likely than their counterparts in the control group to report they had become sexually active (odds ratio = 1.25). The study also found that 12 months after the program, adolescents in the group receiving TOP were no less likely than adolescents in the control group to report ever being pregnant (odds ratio = 0.96). The Chicago study found no evidence of program impacts on recent sexual activity or on having sex without using a condom in the last three months. The study conducted across five northwestern states found mixed effects (Philliber et al. 2015). The study found that immediately after the program ended, the subgroup of male adolescents in the schools that implemented TOP were less likely to report ever causing a pregnancy than their counterparts in schools that did not implement the program (odds ratio = 0.71). For the same time period, the study found that the subgroup of female adolescents in the treatment schools were more likely than those in the control schools to report having ever been pregnant (odds ratio = 1.27). The study found no significant impacts on pregnancy for the full sample immediately and 12 months after the program ended (odds ratio = 1.13 immediately after the program, odds ratio = 1.15 12 months after the program). Finally, the Denver study examined the effectiveness of supplementing TOP with a text message program. The study found no evidence of favorable impacts of the supplemental texting program on ever being pregnant or causing a pregnancy (odds ratio = 1.57) or on sexual activity with use of condoms or contraceptives Bull et al. 2015, 2016).

Summary

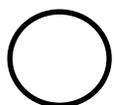
We identified 15 new programs in the current round of the review (Table 1). Three of these newly identified programs—Crossroads, POWER Through Choices, and Possessing Your Power—met the review criteria for evidence of effectiveness, having a study with a High or Moderate quality rating that showed evidence of a favorable, statistically significant program impact on at least one sexual risk behavior or reproductive health outcome of interest. For nine other newly identified programs, the supporting impact studies met the review criteria for a study quality rating of High or Moderate, but the study findings did not show favorable, statistically significant program impacts. For the remaining three programs, the supporting impact studies did not meet the review criteria for a High or Moderate study quality rating.

In this brief (Tables 2 and 3 below) and on the review website (<https://tppevidencereview.aspe.hhs.gov/FindAProgram.aspx>), we summarize the available evidence (positive, negative, and null) across all studies on a particular program model in each of five outcome domains: (1) sexual activity; (2) number of sexual partners; (3) contraceptive use;

(4) STIs or HIV; and (5) pregnancies. The strength of the body of evidence behind a given program model is represented by both the color and size of the icon (see Key below). Visitors to the review website may use this information to compare program models that match their outcome domain of interest, as well as the desired program type, population, age range, or implementation setting.

The HHS Teen Pregnancy Prevention Evidence Review has focused on the quality and rigor of the evaluations and the effect of the program models on a small set of outcomes since 2009. With the evidence that has been gathered, we have been able to identify many programs that met those requirements. Going forward, we will be strengthening the review criteria to identify robust programs with the goal of ultimately improving outcomes.

Key

Color indication	Description
	Uniformly positive impacts on outcomes in domain
	A mix of positive, null, and/or adverse impacts on outcomes in domain
	Uniformly null impacts on outcomes in domain
	Uniformly adverse impacts on outcomes in domain
Size indication	Description
	Five or more studies
	Two to four studies
	One study

Note: A blank cell indicates the studies associated with the program did not examine any outcome measures within that particular outcome domain, or the studies examined outcome measures within that domain but the findings did not meet the review evidence standards.

Table 2. Evidence by outcome domain and study rating for new publications on programs assessed in previous rounds of the review

Program/publication	Outcome domains					Quality rating ^a	FYSB or OAH funded ^b
	Sexual activity	Number of sexual partners	Contraceptive use	STIs	Pregnancy		
Program with new evidence, meeting the criteria for evidence of effectiveness for the first time							
Familias Unidas							
Estrada et al. (2015)	+		0			High	No
Programs with evidence of longer-term impacts and/or youth outcomes not examined in previously assessed publications							
Positive Potential							
Piotrowski and Hedeker (2016a); Piotrowski and Hedeker (2016b)	+	0	0			Moderate	Yes
Teen Options to Prevent Pregnancy (T.O.P.P.)							
Rotz et al. (2016a)	0	0	+		+	High	Yes
Programs with evidence of effectiveness, new publications did not change that assessment							
AIM 4 Teen Moms							
Covington et al. (2017)	0	0	0		0	Moderate	Yes
Becoming a Responsible Teen							
The Policy & Research Group (2015a)	0		0			High	Yes
Ruwe et al. (2016)	0		0			High	Yes
Children's Aid Society (CAS)–Carrera							
Herrling (2015)	0		0			High	Yes
¡Cuidate!							
Kelsey et al. (2016a); Kelsey et al. (2016b)	0		0	0	0	High	Yes

Program/publication	Outcome domains						FYSB or OAH funded ^b
	Sexual activity	Number of sexual partners	Contraceptive use	STIs	Pregnancy	Quality rating ^a	
Generations							
Lewin et al. (2016)			+			Moderate	No
Healthy Futures							
Calise et al. (2016)	+		0			Moderate	Yes
It's Your Game: Keep it Real							
Potter et al. (2016)	-		0			Moderate	Yes
Love Notes							
Barbee et al. (2016)	+	0	+		+	Moderate	Yes
Positive Prevention PLUS							
LaChausse (2016)	+		+		0	Moderate	Yes
Promoting Health Among Teens! Abstinence-Only Intervention (PHAT-AO)							
Walker et al. (2016)	0					High	Yes
Promoting Health Among Teens! Comprehensive Abstinence and Safer Sex Intervention (PHAT-Comprehensive)							
Martin et al. (2015)	0		0			Moderate	Yes
Reducing the Risk							
Barbee et al. (2016)	+	0	+		+	Moderate	Yes
Kelsey et al. (2016c); Kelsey et al. (2016d)	0		0	0	0	High	Yes
Teen Outreach Program (TOP)							
Bull et al. (2015); Bull et al. (2016)					0	Moderate	Yes
Crean et al. (2015); Robinson et al. (2016b)	0		0			Moderate	Yes
Philliber and Philliber (2016)	0		0			Moderate	Yes
Philliber et al. (2016)	0		0		+ and -	High	Yes
Robinson et al. (2016a); Robinson et al. (2016b)	0		0		0	Moderate	Yes
Seshadri et al. (2015)	0		0			Moderate	Yes
Walsh-Buhi et al. (2016)	DNMS		DNMS		DNMS	Moderate	Yes

Program/publication	Outcome domains						Quality rating ^a	FYSB or OAH funded ^b
	Sexual activity	Number of sexual partners	Contraceptive use	STIs	Pregnancy			
Safer Sex								
Kelsey et al. (2016e); Kelsey et al. (2016f)	0	0	0	0	0		High	Yes
The Policy & Research Group (2015b)	0		0				High	Yes
Seventeen Days (formerly What Could You Do?)								
Eichner et al. (2015); Downs et al. (2016)	0		0				High	Yes
Programs with no evidence of effectiveness, new publications did not change that assessment								
Choosing The Best								
JK Tanner Inc. (2016)			0				High	Yes
Gender Matters (GEN.M)								
Smith et al. (2016)	DNMS		DNMS				Moderate	Yes
HealthTeacher								
Goesling et al. (2016)	0						Moderate	Yes
READY-Girls								
Charron-Prochownik et al. (2013)	0	0	0				High	No
Thurheimer (2016)	n.a.	n.a.	n.a.	n.a.	n.a.		Low	No
Teen Prevention Education Program (Teen PEP)								
Rotz et al. (2016b)	0	0	0				Moderate	Yes
Will Power/Won't Power								
Advanced Empirical Solutions (2015)	n.a.	n.a.	n.a.	n.a.	n.a.		Low	Yes
Wise Guys								
Herrman et al. (2016)	n.a.	n.a.	n.a.	n.a.	n.a.		Low	No

Note: 0, +, and – indicate evidence of null, favorable, and adverse effects, respectively. Empty cells indicate that the study did not examine program impacts on measures within that outcome domain. DNMS indicates that the findings for measures within the outcome domain did not meet the review standards (DNMS) because the quality rating for the findings is not consistent with the overall quality rating of the study.

^a The review team established quality ratings for the publications listed in this table following pre-specified criteria to assess study design, attrition, baseline equivalence, reassignment of sample members, and confounding factors. See Table 4 below for a more detailed description.

^b This column indicates which publications are reports or journal articles presenting the findings from studies funded through grants provided by FYSB or the OAH TPP program.

n.a. = not applicable; following the procedures specified in the review protocol, the review team did not assess evidence of effectiveness for programs with a supporting impact study that received a Low quality rating.

Table 3. Evidence by outcome domain for programs assessed in previous rounds of the review

Program	Outcome domains				
	Sexual activity	Number of sexual partners	Contraceptive use	STIs	Pregnancy
Program with new evidence, meeting the criteria for evidence of effectiveness for the first time					
Familias Unidas					
Programs with evidence of longer-term impacts and/or youth outcomes not examined in previously assessed publications					
Positive Potential					
Teen Options to Prevent Pregnancy (T.O.P.P.)					
Programs with evidence of effectiveness, new publications did not change that assessment					
AIM 4 Teen Moms					
Becoming a Responsible Teen					
Children's Aid Society (CAS)–Carrera					
<i>¡Cuidate!</i>					

Program	Outcome domains				
	Sexual activity	Number of sexual partners	Contraceptive use	STIs	Pregnancy
Generations			●		
Healthy Futures	●		●		
It's Your Game: Keep it Real	●	●	●		
Love Notes	●	●	●		●
Positive Prevention PLUS	●		●		●
Promoting Health Among Teens! Abstinence-Only Intervention (PHAT-AO)	●	●	●		
Promoting Health Among Teens! Comprehensive Abstinence and Safer Sex Intervention (PHAT-Comprehensive)	●	●	●		
Reducing the Risk	●	●	●	●	●
Teen Outreach Program (TOP)	●		●		●
Safer Sex	●	●	●	●	●

Program	Outcome domains				
	Sexual activity	Number of sexual partners	Contraceptive use	STIs	Pregnancy
Seventeen Days (formerly What Could You Do?)					
Programs with no evidence of effectiveness, new publications did not change that assessment					
Choosing The Best					
Gender Matters (GEN.M)					
HealthTeacher					
READY-Girls					
Teen Prevention Education Program (Teen PEP)					
Will Power/Won't Power					
Wise Guys	n.a.	n.a.	n.a.	n.a.	n.a.

Note: n.a. indicates not applicable. Following the procedures specified in the review protocol, the review team did not assess evidence of effectiveness for programs with supporting impact studies that received a Low quality rating.

Review procedures

This update to the review findings followed procedures similar to those used for prior rounds of the review. In October 2016, the review team released a public call for studies requesting new research for consideration. The team also identified studies through a comprehensive literature search that entailed keyword searches of electronic databases and manual searches of relevant academic journals. The identified studies were then screened against pre-specified eligibility criteria.

For studies that met the eligibility criteria, the Mathematica review team first assessed the quality and execution of each study's research design (Table 4). The reviewers assigned each study a quality rating of High, Moderate, or Low according to the risk of bias in the study's impact findings. A more detailed description of these ratings is provided in the review protocol available online at the review website (available at <https://tppevidencereview.aspe.hhs.gov/ReviewProtocol.aspx>).

For the subset of studies that achieved a Moderate or High quality rating, the review team extracted information on the features of the program tested, evaluation setting, study sample, and research design, as well as detailed information on the program impact estimates. The review team then identified programs with evidence of effectiveness, defined as having a statistically significant favorable impact (and no adverse effects) on at least one priority outcome measured for either the full analytic sample or a subgroup defined by (1) gender or (2) sexual experience at baseline. The priority outcomes include sexual activity, number of sexual partners, contraceptive use, STIs, and pregnancy.

This update to the review findings did not introduce any changes to the review criteria. More detailed information on the review process and criteria is available on the review website.

Table 4. Summary of study quality ratings

Criteria category	High study rating	Moderate study rating	Low study rating
Study design	Random or functionally random assignment	Quasi-experimental design with a comparison group; random assignment design with high attrition or reassignment	Does not meet criteria for High or Moderate quality rating
Attrition	What Works Clearinghouse conservative standards for overall and differential attrition	No requirement	Does not meet criteria for High or Moderate quality rating
Baseline equivalence	Must control for statistically significant baseline differences in age, gender, race/ethnicity, and outcome measures	Must establish baseline equivalence of research groups and control for baseline outcome measures	Does not meet criteria for High or Moderate quality rating
Reassignment	Analysis must be based on original assignment to research groups	No requirement	Does not meet criteria for High or Moderate quality rating
Confounding factors	Must have at least two subjects or groups in each research group and no systematic differences in data collection methods	Must have at least two subjects or groups in each research group and no systematic differences in data collection methods	Does not meet criteria for High or Moderate quality rating

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Appendix A. New publications identified and assessed for programs previously reviewed

Program/publication	Quality rating ^a	Description
Program with new evidence, meeting the criteria for evidence of effectiveness for the first time		
Familias Unidas		
Estrada et al. (2015)	High	This publication reports the findings from a randomized controlled trial of a brief version of the Familias Unidas program involving 160 students in Miami-Dade County high schools and their families. The study found a statistically significant program impact on sexual initiation for adolescents who had not had sex at baseline.
Programs with evidence of longer-term impacts and/or youth outcomes not examined in previously assessed publications		
Positive Potential		
Piotrowski and Hedeker (2016a); Piotrowski and Hedeker (2016b)	Moderate	These publications include a government report that presents findings from a previously reviewed randomized controlled trial of Positive Potential, as well as an academic journal article that highlights findings from the study. The study involved 1,374 adolescents attending grades 6 to 8 in elementary and middle schools in five northwestern Indiana counties (Piotrowski and Hedeker 2015). The study measured longer-term impact findings about 3 and 12 months after the end of the program. For the follow-up occurring 3 months after the end of the program, the study found no statistically significant findings. However, the study found evidence of favorable program impacts for the 12 months after end of program follow-up.
Teen Options to Prevent Pregnancy (T.O.P.P.)		
Rotz et al. (2016a)	High	This publication is a government report that presents the longer-term impact findings of a randomized controlled trial of T.O.P.P. (Smith et al. 2015). The study involved 493 low-income expectant or adolescent new mothers in the Columbus, Ohio area. The longer-term impact findings, measured 18 months after program enrollment, show evidence of favorable, statistically significant program effects on measures of contraceptive use and pregnancy.

Program/publication	Quality rating ^a	Description
Programs with evidence of effectiveness, new publications did not change that assessment		
AIM 4 Teen Moms		
Covington et al. (2017)	Moderate	This publication is a government report that presents the longer-term impacts findings of a previously reviewed randomized controlled trial of AIM 4 Teen Moms (Covington et al. 2015). The study involved 800 low-income, adolescent new mothers in Los Angeles County. The longer-term impact findings, measured about 21 months after the program ended, show no evidence of statistically significant, favorable program effects on sexual behavior outcomes.
Becoming a Responsible Teen		
The Policy & Research Group (2015a)	High	This publication is a government report that presents the findings of a randomized controlled trial of Becoming a Responsible Teen (BART), a sexual education curriculum designed for African-American teens. The study involved 850 adolescents recruited from youth summer employment programs in New Orleans. The study examined the effects of the program on inconsistency of condom use and frequency of sexual activity. The study found no evidence of favorable program effects on those outcome measures six months after the end of the program.
Ruwe et al. (2016)	High	This publication is a government report that presents the findings of a randomized controlled trial of Haitian-American Responsible Teen (HART), a cultural adaptation of BART designed for Haitian teens living in the U.S. The study involved 552 youth of Haitian descent attending 9th through 11th grades in schools located in the greater Boston area. The study examined program effects on ever having sex, having sexual intercourse in the past three months, and having sex without using a condom or using any birth control method in the past three months. Six months after the end of the intervention, the study found no evidence of favorable program effects on any of the sexual behavior outcome measures that were examined.
Children's Aid Society (CAS)–Carrera		
Herrling (2015)	High	This publication is a government report that presents the findings of a randomized controlled trial of the CAS–Carrera program involving 338 students in elementary and middle schools in Chicago. The study examined the effects of the program on measures of sexual initiation and sexual activity without the use of contraception. The study did not find any statistically significant program impacts on those measures at the follow-up conducted four years after the baseline.

Program/publication	Quality rating ^a	Description
<i>¡Cuidate!</i>		
Kelsey et al. (2016a); Kelsey et al. (2016b)	High	These publications include a government report that presents findings from a previously reviewed randomized controlled trial of the <i>¡Cuidate!</i> curriculum, as well as an academic journal article that highlights findings from the study. The study involved 2,022 adolescents attending grades 8 to 12 in middle and high schools in Arizona, California, and Massachusetts (Abt Associates 2015c). The longer-term impact findings (16 months after the end of the program) show no statistically significant, favorable program impacts on sexual behavior outcomes.
Generations		
Lewin et al. (2016)	Moderate	This publication highlights key findings, in an academic journal article, from a previously reviewed quasi-experimental design study of the Generations program. The study involved 124 teen mothers and their children in Washington, DC, and it found statistically significant, favorable program effects on measures of condom and effective contraception use (Lewin et al. 2015).
Healthy Futures		
Calise et al. (2016)	Moderate	This publication is an academic journal article that highlights key findings from a previously reviewed government report of a cluster randomized controlled trial of the Healthy Futures program. The study involved 2,346 students from 15 middle schools in three cities in northeastern Massachusetts (Calise et al. 2015). At the end of 8th grade, the study found that female adolescents in the schools that delivered the intervention were significantly less likely to report ever having vaginal sex.
It's Your Game: Keep it Real		
Potter et al. (2016)	Moderate	This publication is an academic journal article that highlights key findings from a previously reviewed government report on a cluster randomized controlled trial of the It's Your Game: Keep it Real program (Coyle et al. 2015). The study involved 2,487 students from 24 rural middle schools in South Carolina, and found no evidence of favorable program effects for the 8th grade follow-up. For the 9th grade follow-up, the study reports no statistically significant impacts on measures of recent sexual activity, and having sex without using effective birth control or a condom in the last three months. It also found evidence of an adverse effect: students in the treatment schools were more likely than those in the control schools to report having initiated sexual activity.
Love Notes		
Barbee et al. (2016)	Moderate	This publication is an academic journal article that highlights key findings from a previously reviewed government report on a cluster randomized trial of the Love Notes program (Cunningham et al. 2016). The study involved 933 adolescents recruited from community-based organizations serving youth in low-income areas of Louisville, Kentucky. Six months after the program ended, the study found that adolescent participants were significantly less likely than youth in the study control group to report ever having had sex, ever having been pregnant, having had sex in the last three months, and having had sex without a condom or without birth control in the last three months.

Program/publication	Quality rating ^a	Description
Positive Prevention PLUS		
LaChausse (2016)	Moderate	This publication is an academic journal article that highlights key findings from a previously reviewed government report on a randomized controlled trial of Positive Prevention Plus (LaChausse 2015). The study involved 3,490 9th grade students in 21 public high schools in southern California. Six months after the end of the program, the study found that students in the schools that offered the program were significantly less likely to initiate sexual activity and to have had sex in the last three months without using birth control.
Promoting Health Among Teens! Abstinence-Only Intervention (PHAT-AO)		
Walker et al. (2016)	High	This publication is a government report that presents the findings of a randomized controlled trial of PHAT-AO program involving 1,319 students in 6th and 7th grades in public schools in Yonkers, New York. This study examined the program's effectiveness on ever having sex at 3, 6, and 12 months after the end of the program. The study found no evidence of favorable program effects on ever having sex at any of the follow-ups.
Promoting Health Among Teens! Comprehensive Abstinence and Safer Sex Intervention (PHAT-Comprehensive)		
Martin et al. (2015)	Moderate	This publication is a government report that presents the findings of a randomized controlled trial of Alaska Promoting Health Among Teens, Comprehensive Abstinence and Safer Sex (AKPHAT), an adaptation of PHAT-Comprehensive. The study adapted the PHAT-Comprehensive program to: (1) use peer educators to deliver the program instead of adult facilitators, (2) serve a different target population of older youth in rural areas, (3) use talking circles and talking sticks, and (4) use fingers rather than a penis model in the condom demonstrations module. The study involved 302 Alaskan Native youth recruited from four non-profit organizations serving youth in Alaska, and examined program effects on recent sexual activity and use of condoms during recent sexual intercourse. Six months after the end of the intervention, the study found no evidence of favorable program effects on any of those sexual behavior outcome measures.
Reducing the Risk		
Barbee et al. (2016)	Moderate	This publication is an academic journal article that highlights key findings from a previously reviewed government report on a cluster randomized trial of Reducing the Risk (Cunningham et al. 2016). The study involved 939 adolescents recruited from community-based organizations serving youth in low-income areas of Louisville, Kentucky. The study found that three months after the program ended, adolescents in the treatment group were significantly less likely to report ever having had sex or having been pregnant in the last three months. In addition, six months after the program ended, adolescents in the treatment group were significantly less likely to report having had sex without birth control in the last three months.

Program/publication	Quality rating ^a	Description
Kelsey et al. (2016c); Kelsey et al. (2016d)	High	These publications include a government report that presents findings from a previously reviewed cluster randomized controlled trial of Reducing the Risk, as well as an academic journal article that highlights findings from the study. The study involved 2,689 students in 150 classrooms in public middle, junior high, and high school in three study sites in Missouri, Texas, and California, respectively (Abt Associates 2015a). The longer-term impact findings of the study, measured about 24 months after program enrollment, show no evidence of favorable program impacts on sexual behavior outcomes.
Teen Outreach Program (TOP)		
Bull et al. (2015); Bull et al. (2016)	Moderate	These publications include a government report that presents findings from a cluster randomized controlled trial examining the effectiveness of supplementing TOP with a text message program called Youth All Engaged (YAE), as well as an academic journal article that highlights findings from the study. YAE consists of five to seven text messages a week while TOP is being delivered, and about three messages per week after TOP ends for 12 weeks. All text messages reinforced the topics covered by TOP and delivered additional teen pregnancy prevention content. The study involved 854 adolescents recruited from Boys & Girls Clubs in Denver, CO, and examined program effects on measures of condom and contraceptive use. Immediately after the program ended, the study found no evidence of favorable program impacts.
Crean et al. (2015); Robinson et al. (2016b)	Moderate	These publications include a government report that presents findings from a cluster randomized controlled trial of TOP, as well as an academic journal article that highlights findings from the study. The study involved 1,188 adolescents recruited from recreation centers in Rochester, NY. The study examined the effects of TOP on measures of sexual initiation and contraceptive use, and found no evidence of favorable program impacts on those measures immediately after the program ended (about nine months after the baseline).
Philliber and Philliber (2016)	Moderate	This publication is a government report that presents the findings of a cluster randomized controlled trial of TOP involving 934 students in middle and high schools in Kansas City, Missouri. The study examined the effects of the program on measures of sexual initiation and contraceptive use. Twelve months after the end of the program, the study did not find any favorable, statistically significant program impacts on those measures.
Philliber et al. (2016)	High	This publication is a government report that presents the findings of a cluster randomized controlled trial of TOP involving 8,662 adolescents attending schools in five northwestern states. The study found evidence of mixed program effects. Immediately after the program ended, the study found a positive program impact on pregnancy rates for male adolescents in the sample. For the same time period, the study also found an adverse effect on pregnancy rates for female adolescents in the sample.
Robinson et al. (2016a); Robinson et al. (2016b)	Moderate	These publications include a government report that presents findings from a randomized controlled trial of TOP, as well as an academic journal article that highlights findings from the study. The study involved 4,769 adolescents recruited from Community Based Organizations in Louisiana. The study examined the effects of the program on measures of contraceptive use and pregnancy immediately and 12 months after the program ended. The study found no evidence of favorable program effects on those measures in any of the follow-ups.

Program/publication	Quality rating ^a	Description
Seshadri et al. (2015)	Moderate	This publication is a government report that presents the findings of a cluster randomized controlled trial of TOP involving 5,633 9th grade students in Chicago Public Schools. The study examined the effects of the program on measures of recent sexual activity and contraceptive use. Immediately after the end of the program (about 10 months after the baseline), the study did not find evidence of any favorable, statistically significant program impacts.
Walsh-Buhi et al. (2016)	Moderate	This publication is an academic journal article that highlights findings from a previously reviewed government report on a cluster randomized controlled trial of TOP (Daley et al. 2015). The study involved 2,058 students attending 9th through 12th grades in high schools in Florida, and examined program effects on measures of sexual initiation and pregnancy immediately and 10 months after the end of the program. The study findings presented in the government report met the review criteria for a High rating. The findings presented in Walsh-Buhi et al. (2016) are based on sample sizes that indicate there was high attrition for that sample. Because of the high attrition these findings received a rating of Moderate, which is not consistent with the overall rating of the study (High rating, based on the findings presented in the government report). For that reason, these findings did not meet the review criteria for evidence of effectiveness.
Safer Sex		
Kelsey et al. (2016e); Kelsey et al. (2016f)	High	These publications include a government report that presents findings from a previously reviewed randomized controlled trial of the Safer Sex intervention, as well as an academic journal article that highlights findings from the study. The study involved 1,809 young women who sought treatment in one of three study sites (health clinics) in Florida, Minnesota, and Tennessee (Abt Associates 2015b). The longer-term impact findings of the study, measured 18 months after baseline, show no statistically significant, favorable program impacts on measures of sexual initiation, recent sexual activity, number of partners, contraceptive use, STIs incidence, and pregnancy.
The Policy & Research Group (2015b)	High	This publication is a government report that presents the findings of a randomized controlled trial of Safer Sex involving 319 young women who sought treatment in five health clinics in New Orleans, LA. The study examined the effects of the program on measures of inconsistency of condom use, inconsistency of use of any contraceptive, and frequency of sexual activity. Six months after the end of the program, the study found no evidence of favorable, statistically significant program effects.
Seventeen Days (formerly What Could You Do?)		
Eichner et al. (2015); Downs et al. (2016)	High	These publications include a government report that presents findings from a randomized controlled trial of Seventeen Days, as well as an academic journal article that highlights findings from the study. The study involved 1,317 young women who sought treatment at health clinics in Ohio, Pennsylvania, and West Virginia. The study examined the effects of the program on measures of abstinence and contraceptive use three and six months after program enrollment. The study found no evidence of favorable, statistically significant program effects on those measures at any of the follow-ups.

Program/publication	Quality rating ^a	Description
Programs with no evidence of effectiveness, new publications did not change that assessment		
Choosing The Best		
JK Tanner Inc. (2016)	High	This publication is a government report that presents the findings of a cluster randomized controlled trial of Choosing the Best. The study involved 1,535 adolescents participating in the summer programs offered by 105 community-based organizations in Hampton Roads, Virginia. The study found no evidence of favorable program effects on a measure of consistent use of a condom or birth control in the last three months, in follow-ups conducted six and 12 months after the program ended.
Gender Matters (GEN.M)		
Smith et al. (2016)	Moderate	This publication is a government report that presents the longer-term impacts findings of a previously reviewed randomized controlled trial of GEN.M. (Smith et al. 2015). The study involved 754 adolescents in Travis County, Texas. Similarly to the shorter-term impact findings (measured 6 months after study enrollment), the longer-term impact findings (measured 18 months after program enrollment) show no evidence of favorable programs effects on sexual behavior outcomes. However, the longer-term impact findings did not meet the review criteria for evidence of effectiveness because they had high attrition and received a rating of Moderate, which is not consistent with the overall rating of the study (High rating, based on the shorter-term impact findings ⁵⁵).
HealthTeacher		
Goesling et al. (2016)	Moderate	This publication is an academic journal article that highlights key findings from a previously reviewed government report on a cluster randomized controlled trial of the HealthTeacher program (Goesling et al. 2014). The study involved 1,189 students in 14 middle schools in Chicago and found no evidence of favorable programs impacts on sexual behavior outcomes.
READY-Girls		
Charron-Prochownik et al. (2013)	High	This publication presents the findings of a randomized controlled trial of the READY Girls program involving 113 female adolescents with type 1 or type 2 diabetes and who were recruited from health clinics in Pittsburg, PA. The study examined the effects of the program on measures of sexual initiation, abstinence, number of partners, unprotected sexual intercourse, and condom use 3, 6, and 12 months after the end of the program. The study did not find any statistically significant program impacts on those measures at any of the follow-ups.
Thurheimer (2016)	Low	This publication presents the findings of a quasi-experimental study of the READY-Girls program. The study received a low rating because the timing of data collection differed for the intervention and comparison groups.

Program/publication	Quality rating ^a	Description
Teen Prevention Education Program (Teen PEP)		
Rotz et al. (2016b)	Moderate	This publication is a government report that presents the longer-term impact findings of a previously reviewed cluster randomized controlled trial of Teen PEP, measured 18 months after the program ended (Rotz et al. 2015). The study involved 942 adolescents recruited from high schools in New Jersey and North Carolina. The longer-term impact findings show no evidence of favorable, statistically significant program impacts on sexual behavior outcomes.
Will Power/Won't Power		
Advanced Empirical Solutions (2015)	Low	This publication presents the findings of a randomized controlled trial of the Will Power/Won't Power program that involved 561 female adolescents attending middle schools in Los Angeles. The study received a low rating because it had high attrition and did not establish baseline equivalence for the final analysis sample.
Wise Guys		
Herrman et al. (2016)	Low	This publication presents the findings from a study of Wise Guys, a pregnancy prevention program aimed at male adolescents. The study received a low rating because it did not have an external comparison group.

^a The review team established quality ratings for the publications listed in this table following pre-specified criteria to assess study design, attrition, baseline equivalence, reassignment of sample members, and confounding factors. See Table 4 for a more detailed description of the study quality ratings.