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Nurses as Sexual Health Educators in Evidence Based Teen Pregnancy Prevention (TPP) Programs in USA – A Review

Nkechi M. Enwerem*, Zillah J. Wesley, Davene M. White and Meseret Asfaw

Department of Nursing, College of Nursing and Allied Health Sciences, Howard University, Washington, DC, USA.

***Correspondence:**
Nkechi M Enwerem, PhD, RN; Department of Nursing, College of Nursing and Allied Health Sciences, Howard University, Washington, DC, USA.

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Keywords
Nurses, Teen pregnancy prevention, Sexual health education.

Introduction

According to CDC, the US teen birth rate (births per 1,000 females aged 15-19 years) has declined 78% from 1991 to 2021. Teen birth rates declined from 15 births per 1,000 females in 2020 to 14 births per 1,000 females in 2021 [1]. Although steadily declining, the US teen birth rate is higher than in other high-income countries [2]. The rates vary among different racial, ethnic, geographic, and socioeconomic groups [3]. Teen pregnancy affects teen mother and the child, in many negative ways. It can cause emotional, psychological and educational challenges. It also, affects the life and opportunities of young mothers and their children [4]. Teen parents are more likely to be from low-income families, unmarried, lacking sufficient resources for housing, food, health care, and childcare [5]. Teen mothers have difficulty attending and completing high school, leading to low educational attainment and employment [5]. The children of teenage mothers are more likely to have lower school achievement and to drop out of high school, have more health problems, be incarcerated at some time during adolescence, give birth as a teenager, and face unemployment as a young adult [6].

Because of the high rates and persistent disparities in teen births, the teen pregnancy prevention (TPP) was created. TPP, is one of six major evidence-based policy initiatives currently funded across the federal government [7]. The Teen Pregnancy Prevention Program (TPP) supports public and private entities to replicate evidence-based teen pregnancy prevention programs that have been proven effective through rigorous evaluation [7].

In the US, The Department of Health and Human Services (HHS) Office of Adolescent Health (OAH) is responsible for implementing and administering the Teenage Pregnancy Prevention Program, which has two funding tiers: the replication of evidence-based intervention (EBI) models (tier 1), and the testing of new or innovative approaches (tier 2). Tier 1, consists of Evidence-based programs that have demonstrated impacts, through rigorous evaluation, on key sexual behavioral outcomes including reduction of teen pregnancy, delay of sexual activity, increased contraceptive use, or reduced transmission of STIs [7].

Since 2009, the U.S. Department of Health and Human Services has sponsored an ongoing systematic review of the research literature on programs to reduce teen pregnancy, sexually transmitted infections (STIs), and associated sexual risk behaviors [8]. These interventions are rigorously evaluated for possible integration into evidence-based practice [8]. Mathematica conducts the TPP Evidence Review (TPPER), Mathematica use findings from the assessed studies to identify programs with evidence of effectiveness in reducing teen pregnancy, STIs, or associated sexual risk behaviors [8,9]. Evaluation criteria include [8,9], the types of participants included in the study, (2) the types of programs examined, (3) the types of research designs and data used in the study, (4) the timeliness of the study findings, and (5) the types of outcome measures examined. Mathematica, categorizes the level of evidence into 'High', 'Moderate' and 'Low'.

The highest study quality rating (High) is reserved for randomized controlled trials (RCTs) and similar studies that randomly assigned subjects to the study's research groups. Quasi-experimental designs with an external comparison group are eligible for at best a moderate rating (Moderate). Quasi-experimental designs without an external comparison group (for example, pre-post designs) are

given a low study rating (Low). Quasi-experimental and random assignment studies that do not meet the other criteria for a high or moderate rating are also assigned the lowest rating (Low) [8,9].

TPP program consists of seven components [10,11]. The Components include the intended content (the intended subject matter being), the delivery mechanisms (The intended principles and practices by which the content is provided), format (The intended structure and organization by which the program content is delivered), the staff delivering the content. (The intended training and characteristics of the individuals delivering content), the dosage (The intended duration, frequency, and intensity of the program), the location for implementation. (The intended settings or locations where the program occurs), and features of the group intended to receive (The characteristics of the intended population receiving programming).

These seven component types are not independent, stand-alone elements of programs. Rather, program components exist and operate together in many combinations. Program content is intended to be offered through a particular delivery mechanism, for a certain dosage, in a certain environment, and so on. These combinations of features describe the intended program delivery, and it might be these specific combinations that are necessary for TPP programs to favorably affect youth outcomes [10,11].

The staff delivering content could be a nurse or a trained sexual health educator. Staff selection is the beginning point for building a competent workforce that has the knowledge, skills, and abilities to carry out evidence-based practices with benefits to consumers. Staff training is important because evidence-based programs and other innovations represent new ways of providing treatment and support. Innovation-based training helps practitioners (and others) in an organization learn when, where, how, and with whom to use (and not to use) new approaches and new skills [12].

The goal of this study is to examine TPP evidence based programs with nurses as the staff delivering the content.

Method

We searched CINAHL with Full Text, Cochrane Methodology Register, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, MedLine PsycInfo Science Direct SocINDEX with Full Text for interventions for adolescent reproductive health that has shown some evidence from evaluation. We also, examined the teen pregnancy prevention (TPP) Evidence review [13]. These programs have rigorous evidence of effectiveness in improving sexual behavior, reducing teen pregnancy, or increasing contraceptive use of or STI prevention.

Results

Table 1, summarized the Teen Pregnancy Prevention Programs (TPP) by summary, implementor (health educator), setting, type, structure, length, sessions, population served, gender, race and ethnicity, age, special populations, age, grade, level of evidence.

Table 2, summarized the activities in category and their percentage. Ten categories were identified. These are program type, program structure, race & ethnicity, gender, special populations, age, grade level, program setting (school based, community based, clinic based, residential, technology based), geography, and program length.

Program Type

Sexual health constituted the largest proportion of program types, followed positive youth development 17.0%. Clinic based and sexual risk avoidance were of the same proportion, 5.7%. Healthy relationship was the least type at 3.8%. Most organizations were focused on sexual health education.

Program Structure

There were nine types of activities. Curriculum based program delivered to a group; Curriculum based program delivered individually, Motivational interviewing delivered individually, Online synchronous, Online: asynchronous (self-directed online), Case management delivered individually, Text-based delivered individually, Clinic based program delivered individually, Mobile app based program delivered individually. Of these, 58.7 % was curriculum based program delivered to a group, followed by Curriculum based program delivered individually and Online: asynchronous (self-directed online both at 9.3%. The least was Online: asynchronous (self-directed online) at 1.3%.

Program Length

Most of the programs, 54.0 %, lasted between 0-6 months. Only 6% lasted over 48 months (4 years).

Program focus by race and ethnicity

Youth of any race or ethnicity constituted a larger proportion of the population evaluated at 39.8%. followed by African American and Black at 25% and Hispanic or Latinos of any race at 21.3%. No information was found for Asians and Native Hawaiian or other Pacific Islander.

Program focus by gender

There were five groups of gender. Nonbinary youth, Transgender youth, Young men, Young women, Youth of any gender. 56% was youth of any gender, followed by young women and young men respectively at 34.9% and 6.1%. Nonbinary youth and transgender youth. Both at 1.5%.

Special Populations

29.5% of the programs, focused on sexually active youth. 13.6%, focused on Adult parents and caregivers. 11.4% focused on LGBTQ youth, 11.4% on pregnant or parenting youth and another 11.4% on rural youth. No information, was found on youth who are victims of trafficking and youth with developmental disabilities.

Program focus by Age

39% of programs designed their activities for teenagers 14 to 17, followed by 28.2% for 18-19 year olds and 24.9% for ages 13 or younger. 20 years and older, accounted 7.5%.

Table 1: Summary of Evidence based Teen Pregnancy Prevention (TPP) Programs by: summary, implementor (health educator), setting, type, structure, length, sessions, population served, gender, race and ethnicity, age, special populations, age, grade, level of evidence.

Programs/Reference	Program Summary	Implementor	Program Setting	Program Type	Program Structure	Program length	# of sessions	Intended Population	Gender	Special populations	Age	Grade level	Level of evidence
Aban Aya Youth Project Flay, B. R., Graumlich, S., Segawa, E., Burns, J. L., & Holliday, M. Y. (2004). Effects of 2 prevention programs on high-risk behaviors among African American youth: A randomized trial. Archives of Pediatrics & Adolescent Medicine, 158(4), 377-384. [14].	A four-year program. Practice abstinence, avoid drugs and alcohol, resolve conflicts non-violently, using an Afrocentric social development curriculum.	Health Educator	In school/ class-room-based community-based organizations	Sexual health education	Curriculum-Based program Delivered to a group	64 to 84 hours total over 4 years	Sixteen -Twenty-one 45-Minute sessions annually	**African American**	**Young men; Young women Youth of any gender**	**NA**	**13 or younger**	**Middle school**	**Moderate**
Adult Identity mentoring (AIM) Clark, L. F., Miller, K. S., Nagy, S. S., Avery, J., Roth, D. L., Liddon, N., et al. (2005). Adult identity mentoring: Reducing sexual risk for African-American seventh grade students. Journal of Adolescent Health, 37(4), 337e1-337e10. [15].	A group-level youth development. Reduce sexual risk behaviors, motivation, safe choices; barriers to sexual risk prevention (e.g., hopelessness, poverty, risk opportunities in low-income environments). 12 fifty-minute sessions typically delivered twice a week over six weeks.	Preservice training	In school/ class-room-based community-based setting.	Positive youth development	Curriculum-Based program Delivered to a group	10 hours total over 6 weeks	Twelve 50-Minute session	African American **Youth of any race or ethnicity**	Youth of any gender	NA	14-17	Middle school	High
AIM 4 Teen Moms Covington, Reginald D., Dara Lee Luca, Jennifer Manlove, and Kate Welti. "Final Impacts of AIM 4 Teen Moms." Washington, DC: U.S. Department of Health and Human Services, Office of Adolescent Health, February 2017. [16].	Reduce rapid repeat pregnancies; teen mothers define specific life aspirations, role of contraception. Ten-week program of six one-hour individual sessions, one ninety-minute group session at the half-way point, and another 90-minute group session at the end of the program.	Advisors	Community based-Organization Home-based	Sexual health education	Curriculum-Based program Delivered individually	9 hours over 10 weeks	Six 1-hour Individual sessions And two 1.5- hour Group sessions	Hispanic **Youth of any race or ethnicity**	Young women	Pregnant or Parenting youth	14-20 or older	High school; Post secondary	Moderate
All4You! Glassman, J. R., Franks, H. M., Baumler, E. R., Coyle, K. K. (2014). Mediation analysis of an adolescent HIV/STI/ pregnancy prevention intervention. Sex Education: Sexuality, Society and Learning, 14(5), 497-509. [17].	Reduce the number of students who have unprotected sexual intercourse, risk of HIV, other sexually transmitted infections (STIs), unplanned pregnancy. Change key determinants related to sexual risk (attitudes, beliefs, and perceived norms). A skills-based HIV, other STD, pregnancy prevention curriculum. Service- learning visits in the community—integrated and delivered as a 14-session program (about 26 hours total).	Classroom teachers or community-based educators	Alternative high schools; In school/ class-room-based	Sexual health education	Curriculum-Based program Delivered to a group	26 hours total over 7 weeks	Fourteen sessions (including nine 70-90 minute Lessons and five 140-minute service learning visits	Hispanic **Youth of any race or ethnicity**	Youth of any gender	NA	14-19	High school	High

Be Proud! Be Responsible! Borawski, E. A., Tufts, K. A., Trapl, E. S., Hayman, L. L., Yoder, L. D., & Lovegreen, L. D. (2015). Effectiveness of health education teachers and school nurses teaching sexually transmitted infections/ human immunodeficiency virus prevention knowledge and skills in high school. The Journal of School Health, 85(3), 189-196. doi:10.1111/ josh.12234 [doi] [18].	Modify behaviors, STD/HIV (condom use, sexual behaviors such as initiation and frequency of intercourse. Five hour intervention (delivered in six fifty-minute modules).	Trained adults	After school; In school/ classroom-based; Community-based organization	Sexual health education	Curriculum-Based program Delivered to a group	5 hours total	Six 50-minute sessions	African American; White; **Youth of any race or ethnicity**	Young men; Youth of any gender	NA	13 - 19	High school; Middle school;	High
Be Proud! Be Responsible! Be Protective Koniak-Griffin, D., Lesser, J., Nyamathi, A., Uman, G., Stein, J. A., & Cumberland, W. G. (2003). Project CHARM: An HIV prevention program for adolescent mothers. Family and Community Health, 26, 94-107 [19].	Reduce unprotected sex (knowledge, beliefs, and intentions related to condom use and sexual behaviors, impact of HIV/AIDS on mum and child, prevention of disease (pregnancy postpartum period, and special concerns). Eight 60-minute modules focusing on behavioral attitudes, expectations, negotiation, problem solving skills, self-efficacy, and feelings of maternal protectiveness.	Professional nurses	In school/ classroom-based; Community center, Community-based organization	Sexual health education	Curriculum-based program delivered to a group	8 hours Over 1 year	Eight 1-Hour sessions	Hispanic or Latinix of any race; **Youth of any race or ethnicity**	Young women	Pregnant or Parenting youth	14-19	High school; Middle school;	High
Children's Aid Society (CAS)-Carrera Program Herrling, S. (2015). "Evaluation of the Children's Aid Society (CAS)-Carrera Adolescent Pregnancy Prevention Program in Chicago, IL: Findings from the Replication of an Evidence-Based Teen Pregnancy Prevention Program." Accord, NY: Philliber Research & Evaluation. [20].	Avoid parenthood and other risky behaviors during adolescence. Seven-year program which relies on a holistic, youth development approach. Delivered by trained and certified staff. The program may be integrated into the school day or implemented after school and in community-based locations.	Pre-service	After school; In school/case Management; In school/ classroom based; community Center; community-Based organization; Rural Suburban; urban	Positive youth development	Case Management Delivered Individually, Curriculum-based program delivered individually; Curriculum-based program delivered to a group	7 years	Weekly 1-hour Family Life and Sexuality Education Sessions And daily 1-hour Educational tutoring	African American; **Youth of any race or ethnicity**	Youth of any gender	Adult parents And caregivers; LGBTQ youth; Rural youth; Sexually active youth; Youth involved in the welfare system	13 or younger; 14-19	Elementary school; High school; Middle school;	High

Crossroads/Turning the Corner Achievement Program (TCAP) Slater, H.M., and Mitschke, D.B. (2015). "Evaluation of the Crossroads Program in Arlington, TX: Findings from an Innovative Teen Pregnancy Prevention Program" Arlington, TX: University of Texas at Arlington. [21].	Reduce risky sexual Three-day program is an adaptation of the Be Proud! Be Responsible! Program. Include developing interpersonal skills, building connections with community resources, and educational/vocational goal setting. Participate in Drop Out Prevention services	Teaching, counseling, or social work.	after school; community college; community-based organization	Sexual health education	Curriculum-based program delivered to a group	21 hours over 3 days	Three-7-hour sessions	Hispanic or Latinix of any race **Youth of any race or ethnicity**	Youth Of any gender		14-19	High school;	High
¡Cuidate! (Take Care of Yourself)" Kelsey, M., Layzer, J., Price, C., and Juras, R. "¡Cuidate!: Final Impact Report." Draft Teen Pregnancy Prevention Replication Study, Abt Associates: Cambridge, MA, November 2016b. [22].	Prevent unwanted pregnancy and sexually transmitted diseases, HIV/AIDS. Adaptation of the Be Proud! Be Responsible! program. emphasizes Latino cultural beliefs (abstinence, condom use)	Trained staff	In school/ classroom-based; community-based organization;	Sexual health education	Curriculum-based program delivered to a group	6 hours over 2 or more days	Six 1-hour sessions	Hispanic or Latinix of any race	Youth of any gender	NA	13 or younger; 14-19	High school; middle school	High
Draw the Line/Respect the Line Coyle, K. K., Kirby, D. B., Marin, B. V., Gomez, C. A., & Gregorich, S. E. (2004). Draw the Line/ Respect the line: A randomized trial of a middle school intervention to reduce sexual risk behaviors. American Journal of Public Health, 94, 843-851. [23].	Prevent HIV, other sexually abstinence, knowledge and skills to (STDs) and pregnancy, limit setting and refusal skills in a nonsexual context. Condom use. Use an interactive approach	Classroom teachers or community-based educators	In school/ classroom-based;	Sexual health education	Curriculum-based program delivered to a group	14 hours Over 3 years	Nineteen 45- minute sessions	Hispanic or Latinix of any race **Youth of any race or ethnicity**	Youth of any Gender		13 or younger 14 - 17	Middle school;	High
Famillias Unidas Estrada, Y., Rosen, A., Huang, S., Tapia, M., Sutton, M., Willis, L., Quevedo, A., Condo, C., Vidot, D. C., Pantin, H., & Prado, G. (2015). Efficacy of a brief intervention to reduce substance use and human immunodeficiency virus infection risk among latino youth. Journal of Adolescent Health, 57(6), 651-657. [24].	HIV prevention- increasing parent-adolescent communication about sex and HIV risks. Eight 2-hour group sessions with the parents (alone), and four 1-hour family visits with parents and Adolescents. An adapted version of the intervention, Brief Familias Unidas, reduces the duration of the program, to five parent sessions and one family visit.	Two trained co-facilitators	In school/case management; Community-based Organization; Suburban; Urban	Sexual Health Education	Curriculum-based program delivered to a group	20 hours over 3 weeks	Eight 2-hour parent sessions and four 1-hour family sessions	Hispanic or Latinx of any race	Youth of any gender	Adult parents and caregivers; Youth involved in the juvenile justice system	13 or younger; 14-17	High school; Middle school	High

Families Talking Together Guilamo-Ramos, V., Benzekri, A., Thimm-Kaiser, M., Dittus, P., Ruiz, Y., Cleland, C. M., McCoy, W. (2020). A triadic intervention for adolescent sexual health: A randomized clinical trial. em Pediatrics /em, 145(5). [25].	Prevent and/or reduce sexual risk behavior. Program includes - parent discussions, family workbook, parent's effective communication skills, parent-adolescent relationships, parents successful monitoring strategies, adolescent's assertiveness and refusal skills. Delivered to parents either individually or in small group sessions,	Trained facilitators	After school; Community-based Organization; Health clinic or Medical facility;	Sexual health education	Clinic-based program delivered individually; Curriculum-based program delivered individually; Curriculum-based program delivered to a group	60 – 90 minutes total	One or two 30-to45-minute sessions (session length varies)	African American; Hispanic or Latinx of any race; Youth of any race or ethnicity	Young men; Young women; Youth of any gender	Adult parents And caregivers	13 or younger; 14-17	High school; Middle school	High
Focus Boyer, C. B., Shafer, M. A., Shaffer, R. A., Brodine, S. K., Pollack, L. M., Betsinger, K., et al. (2005). Evaluation of a cognitive-behavioral, group, randomized controlled intervention trial to prevent sexually transmitted infections and unintended pregnancies in young women. Preventive Medicine, 40(4), 420-31. [26].	Promotes healthy behavior and responsible decision-making among young women. Program includes - responsible behavior, relationships, pregnancy prevention, and STI prevention. Eight-hour cognitive-behavioral group intervention	Female health educators	Alternative School; In school/ Classroom based;	Sexual health Education	Curriculum-based program delivered to a group	8 hours total	Four 2-hour sessions	White; Youth of any race or ethnicity	Young women	-	18 – 19; 20 or older	High school; Postsecondary	High
Generations Lewin, A., Mitchell, S., Beers, L., Schmitz, K., & Boudreaux, M. (2016). Improved contraceptive use among teen mothers in a patient-centered medical home. Journal of Adolescent Health, 59(2), 171-176. [27].	Improve mental, physical health outcomes and to reduce repeat pregnancies. Program includes: integrated medical care, pregnancy prevention, mental health care, social work services comprehensive support, i primary care, developmental screenings,	Physicians and/or nurse practitioners; (2) one or more clinically licensed social workers; (3) one or more mental health providers, which can be licensed psychologists	Health clinic or medical facility	Clinic-based	Case management delivered individually; Clinic-based program delivered individually	Program length varies	Session length varies	African American or Black; Youth of any race or ethnicity	Young women; youth of any gender	Pregnant or parenting youth	14-20 or older	High school; Postsecondary	Moderate
Get Real (Middle School) Grossman, J. M., Tracy, A. J., Charmaraman, L., Ceder, I., & Erkut, S. (2014). Protective Effects of Middle School Comprehensive Sex Education with Family Involvement. Journal of School Health, 84, 739-747. [28].	Delay sex and increase correct and consistent use of protection methods. Program includes: responsible decision-making, healthy communication with partners and family members on sexual health. Delivered in nine 45-minute lessons. 3-year curriculum	Trained teachers	In school/ classroom-based;	Sexual health Education	Curriculum-based program delivered to a group	20 hours over 3 years	Twenty-seven 45 Minute sessions	Hispanic or Latinix of any race; Youth of any race or ethnicity	Youth of any gender	-	13 or younger; 14-17	Middle school	Moderate

Girl2Girl Ybarra, M., Goodenow, C., Rosario, M., Saewyc, E., Prescott, T. (2021). An mHealth intervention for pregnancy prevention for LGB teens: An RCT. Pediatrics, 147(3). https://doi.org/10.1542/peds.2020-013607 [29].	Girl2Girl is a 20-week teen pregnancy prevention program delivered via text messaging to cisgender girls between the ages of 14 to 18 who identify as lesbian, bisexual, or queer ('cisgender' refers to individuals whose current gender identity is the same as the sex they were assigned at birth); focuses on teen pregnancy prevention, sexually transmitted infection (STI) testing, communication skills, and healthy and unhealthy relationships. In addition to receiving program content, participants have the option to be paired with another participant (a Text Buddy) they can text for support throughout the program	Trained staff	Technology based: Mobile app; Texting; website	Sexual health Education	Text-based delivered individually	20 weeks total	Four to 12 text messages per day during the first seven weeks of programming, one text message two or three days per week for the following 12 weeks, and eight to 15 messages during the one week booster period.	White; Youth of any race or ethnicity	Young women	LGBTQ Youth; Rural youth; Sexually active youth	14 – 19	High school	High
Health Improvement Project for Teens (HIP Teens) Morrison-Beedy, D., Crean, H. F., Passmore, D., & Carey, M. P. (2013). Risk reduction strategies used by urban adolescent girls in an HIV prevention trial. Current HIV Research, 11(7), 559-569. [30].	Reduce sexual risk behavior. Program includes: positive youth development, motivational information on HIV and risk reduction, communication, negotiation, decision-making skills, identify triggers to risk behavior, motivation to reduce risk, and risk reduction strategies. A four small group sessions (total time: 8 hours) Delivered by trained facilitators with a focus on interviewing. Participants receive Additional 90-minute booster sessions, delivered three and six months after the program and continue to build upon interpersonal and self-management skills learned in the initial sessions.	Trained facilitators	After school; Alternative school; In school/case management; In school/ classroom based; Community center; Community based organization; Faith based facility; Health clinic or medical facility; mental health clinic; school-based health clinic; Correctional facility; Residential or group home; Rural; Suburban urban	Sexual health Education	Curriculum-based program delivered to a group	8 hours total	Four 2-hour sessions or eight 1-hour sessions and two 90-minute booster sessions	Youth of any race or ethnicity	Young women	Sexually active youth	14-20 or Older	High school	High

Healthy Futures Calise, T. V., Chow, W., Dore, K. F., O'Brien, M. J., Heitz, E. R., & Millock, R. R. (2016). Healthy futures program and adolescent sexual behaviors in 3 massachusetts cities: A randomized controlled trial. American Journal of Public Health, 106, S103-S109. doi:10.2105/AJPH.2016.303389 [31].	Empowers participants to avoid the health, social, and psychological consequences of risky decisions Program includes: increasing the knowledge, skills, and self-efficacy necessary to delay sexual activity and reduce the risk of teen pregnancy and sexually transmitted infections, increase parent-child communication A three-year program that uses a multi-level approach, peer education parent education workshops,	Health educators	After school; In school/ classroom – based Community-based organizations; Faith based facility Correctional facility; correctional; Residential or Group home, Website. Rural, suburban, urban	Sexual health Education	Curriculum-based program delivered to a group; Online: Asynchronous (self-directed/ online); Online: Synchronous	20 hours over 3 years	Twenty four 5—minute sessions In school/ classroom	Hispanic or Latinix of any race; Youth of any race or ethnicity	Youth of Any gender	-	13 or younger; 14-17	Middle school	Moderate
Heritage Keepers Abstinence Education Weed, S. E., Birch, P. J., Ericksen, I. H., & Olsen, J. A. (2011). Testing a predictive model of youth sexual intercourse initiation. Unpublished manuscript. [32].	Reduction of Sexual Behaviors: Program includes: benefits of practicing sexual abstinence, risks associated with sexual activity outside of marriage. Resistance skills and tactics to build relationships without having sex. information about male and female reproductive systems, sexually transmitted diseases.	Certified regular classroom educator	After school; Alternative school; In school/ classroom-based; Community center; Community college; Faith-based facility; Health clinic or medical facility; Mental health clinic; Correctional facility; Home-based; Residential or home group; Suburban; Urban.	Sexual risk avoidance	Curriculum-based program Delivered to a group	7.5 hours total	Five 1.5-hour ten 45-minute sessions	African American or black; Youth of any race or ethnicity	Youth of any gender	-	13 or younger; 14-17	High school; Middle school	moderate

High School FLASH, Coyle, K., Anderson, P., Laris, B.A., Barrett, M., Unti, T., Baumler, E. (2021). A group randomized trial evaluating High School FLASH, a comprehensive sexual health curriculum. *Journal of Adolescent Health*, 68(4), 686–695. https://doi.org/10.1016/j.jadohealth.2020.12.005 [33].	High School FLASH is a sexual health education curriculum designed for classroom settings in grades 9–12. The program aims to (1) prevent unintended pregnancy, HIV and other sexually transmitted diseases (STDs), and sexual violence; (2) increase knowledge about reproductive and sexual health; and (3) improve family communication about relationships and reproductive health. FLASH covers the following topics: healthy relationships, communication, decision making, online safety, coercion and consent, pregnancy, the reproductive system, sexual orientation and gender identity, abstinence, birth control and condoms, HIV and STD prevention, STD testing, and improving school health.	Classroom teachers or community-based educators	In school/ classroom-based;	Sexual health education	Curriculum-based program Delivered to a group; Online: Asynchronous (self-directed)	12.5hours over 3-5 weeks	Fifteen 15-minute sessions	African American or black; Youth of any race or ethnicity	Youth of any gender	-	14-19	High school	High
Horizons DiClemente, R. J., Wingood, G. M., Sales, J. M., Brown, J. L., Rose, E. S., Davis, T. L., Lang, D. L., Caliendo, A., & Hardin, J. W. (2014). Efficacy of a telephone-delivered sexually transmitted infection/ human immunodeficiency virus prevention maintenance intervention for adolescents: A randomized clinical trial. JAMA Pediatrics, 168(10), 938-946. [34].	Reduction of STI/HIV Program includes: assertive communication skills, proper condom use, fosters cultural and gender pride. Delivered through two 4-hour small group sessions followed by four 15-minute booster phone calls over the following year.	Two skilled African American female health educators	Community center Community-based organization Health clinic or medical facility	Sexual health education	Curriculum-based program Delivered to a group	9 hours	Two 4-hour sessions and Four 15-minute phone calls	African American or black;	Young women	Sexually active youth	14-20 or older	High school; Post secondary	High

INCLUED: Inclusive Healthcare-Youth& Providers Empowered Philliber, A. (2021). The Inclued program: a randomized control trial of an effective sex education program for lesbian, gay, bisexual, transgender, queer, and questioning youths. Journal of Adolescent Health, 69(4), 636-643. [35].	IN·clued is an educational program that addresses the sexual health disparities affecting lesbian, gay, bisexual, transgender, and queer/questioning (LGBTQ+) youth. The program aims to address teen pregnancy and sexually transmitted infection (STI) rates among LGBTQ+ youth ages 14 to 19. The IN-·clued program takes a dual approach to address the sexual health outcomes for LGBTQ+ young people: (1) a three-hour workshop for LGBTQ+ youth on sexual health and accessing health care, and (2) two 90-minute workshops for health care providers and clinic staff on best practices for providing care to LGBTQ+ young people. The health center workshop is co-facilitated by adult facilitators and peer educators. This combination ideally results in the outcome of these youth seeking and receiving sexual health services more consistently.	Community-based educators or staff	After school; Community center; Community-based organization; Health clinic or medical facility;	Sexual health education	Curriculum-based program delivered to a group	6 hours over 1 or 2 days	One 3-hour youth session and one 3-hour health center session	White; Youth of any race or ethnicity	Nonbinary Youth; Transgender youth; Young men; Young women; Youth of any gender	LGBTQ youth; Youth serving professionals;	14-19	High school; Post secondary	High
It's your game: Keep it real (IYG) Potter, S. C., Coyle, K. K., Glassman, J. R., Kershner, S., & Prince, M. S. (2016). It's your game. . .keep it real in south carolina: A group randomized trial evaluating the replication of an evidence-based adolescent pregnancy and sexually transmitted infection prevention program. American Journal of Public Health, 106, S60-S69. doi:10.2105/AJPH.2016.303419 [36].	HIV, STI, and pregnancy prevention program Program includes: role plays, group discussion, and small group activities, personalized journaling and individually tailored activities that are computer-based. Consists of twenty-four 50-minute lessons delivered during 7th and 8th grade. In each grade, the program integrates group-based classroom activities (e.g	Respectful of student	In school/ classroom-based; website; urban	Sexual health education	Curriculum-based program Delivered to a group; Online: Asynchronous (self-directed)	20 hours over 2 years	Twenty four 50-minute sessions (including 12 for 7th-graders and 12 for 8th graders)	Hispanic or Latinix of any race; White; Youth of any race or ethnicity	Youth of any gender	-	13 or younger; 14-17	Middle school	Moderate

LeadHer Malofeeva, E., Warnke, A.S., Rogers, H., Browning, K. (2022). Evaluation of LeadHer, a pregnancy prevention curriculum, in Detroit, Michigan. Evaluation Strategies. [37].	LeadHer is a multicomponent intervention emphasizing female leadership and sexual health that aims to reduce teen pregnancy and risky sexual behavior among at-risk adolescent girls. The program includes 30 hours of group learning sessions over a six-week period. It focuses on topics such as healthy relationship skills, goal-setting and decision-making skills, communication skills, adolescent development, and career development. The program is delivered by trained peer educators supported by an adult facilitator. It is also highly recommended that youth participate in two goal-setting sessions with a case planner who will help youth make plans for their future and provide referrals to programs and services that support youths' ongoing healthy growth and development.	Trained peer educators	After school; alternative school; In school/classroom-based; community center; community-based organization; faith-based facility; residential or group home; mobile app; urban	Positive Youth development	Case management delivered individually, Curriculum-based program delivered to a group	32 hours over 6 weeks	Six 5-hour group sessions and two 1-hour case planner sessions.	Youth of any race or ethnicity	Young women	LGBTQ youth; Sexually active youth;	14-19	High school	High
Linking Families and Teens (LiFT) Brown, S.A., Turner, R.E., Christensen, C. (2021). Linking families and teens: Randomized controlled trial study of a family communication and sexual health education program for rural youth and their parents. *Journal of Adolescent Health, 69*(3), 398–405. https://doi.org/10.1016/j.jadohealth.2021.05.020 [38].	The Linking Families and Teens (LiFT) program is a six-hour family connection workshop designed to improve sexual health outcomes for high school–age youth across the United States. The workshop is intended to increase the frequency and quality of communication about sexuality between teens and their supportive adults, enhance the relationship between teens and these adults, increase teens' confidence about preventing unwanted pregnancy, increase supportive adults' comfort with their youth receiving sexual health services, and decrease the number of unplanned teen pregnancies. After the workshops, participants can opt to receive 12 follow-up text messages that serve as reminders of the skills taught in LiFT and include conversation prompts and resources. Four weeks after the workshop, all supportive adults receive a booster call from a LiFT facilitator to reinforce concepts discussed during the workshop and provide any necessary resources.	Two trained co-facilitators	In school/case management; Health clinic or medical facility; rural	Positive Youth development	Curriculum-based program delivered to a group	6 hours over 1 or 2 days	One 6-hour session with weekly follow-up text messages for 12 weeks or two 3-hour sessions with weekly follow-up text messages for 12 weeks	Youth of any race or ethnicity	Young women; Youth of any gender	Adult parents and caregivers; Rural youth;	13 or younger; 14-19	High school	High

Love Notes Cunningham, M. R., van Zyl, M. A., & Borders, K. W. (2016). Evaluation of Love Notes and Reducing the Risk in Louisville, Kentucky. Final Evaluation Report to the University of Louisville Research Foundation, Louisville, KY. [39].	Cultivating healthy relationships, selves, and sexual behaviors relationship education Program includes: how to build healthy romantic relationships, prevent dating violence, improve impulse control, planning and pacing relationships, sex, self-efficacy and resilience, communication skills, and understanding how family formation impacts children. Consists of 13 one-hour lessons on decision-making, communication, sexual and overall safety.	Instructors must be trained by a Dibble certified trainer	After school; alternative school; In school/classroom-based; community center community based; faith-based facility; correctional facility; residential or group home; rural, suburban and urban	Sexual health education	Curriculum-based program delivered to a group	13 hours total	Thirteen 1- hour sessions	African American or Black; Youth of any race or ethnicity	Youth of any gender;	-	14-20 or older	High School	Moderate
Making Proud Choices! Jemmott, J. B., Jemmott, L. S., & Fong, G. T. (1998). Abstinence and safer sex HIV risk-reduction interventions for African American adolescents: A randomized controlled trial. JAMA: Journal of the American Medical Association, 279(19), 1529-1536. [40].	STDs, Teen Pregnancy, and HIV prevention program. Program includes: knowledge, confidence and skills necessary to reduce their risk of sexually transmitted diseases (STDs), HIV, abstaining from sex or using condoms if they choose to have sex. Consists of eight modules delivered by trained facilitators	Health educators, social workers, nurses, and others who provide social services	After school; In school/ classroom based; community based;	Sexual health education	Curriculum-based program delivered to a group	Eight hours over 1 year	Eight 1-hour sessions	African American or Black; Youth of any race or ethnicity	Young women; Youth of any gender	-	13 or younger; 14-17	High school; Middle school	High
Peer Group Connection – High school(PGC-HS) Walsh, S., Jenner, E., Qaragholi, N., Henley, C., Demby, H., Leger, R., & Burgess, K. (2022). The Impact of a High School-Based Positive Youth Development Program on Sexual Health Outcomes: Results from a Randomized Controlled Trial. Journal of School Health, 92(12), 1155-1164. [41].	Peer Group Connection - High School (PGC-HS) is a cross-age, peer-to-peer group mentoring program for 9th grade students, designed to facilitate the transition from middle to high school and to develop social and emotional skills, enhance student engagement, and improve educational outcomes. The program encourages and supports 11th and 12th grade students to become peer leaders for 9th graders. The program includes 18 weekly 45-minute outreach sessions for 9th grade students.	School staff	In school/ classroom-based; rural; suburban; urban	Positive youth development	Curriculum-based program delivered to a group	10.5 – 18.5 hours over 4 years	Eighteen 45- minute sessions and three 2.5-hour booster sessions	Hispanic or Latinx of any race; Youth of any race or ethnicity	Young women; Youth of any gender	-	14-19	High school	High

Plan A Jenner, E., Walsh, S., Henley, C., Demby, H., Leger, R., & Falk, G. (2023). Randomized trial of a sexual health video intervention for black and hispanic adolescent females. Prevention Science, 1-10. [42].	Plan A is intended to reduce unplanned pregnancies and sexually transmitted infections (STIs) among Black and Latina women ages 18 to 19. The program includes a 23-minute video and an optional handout that provides more resources. The video includes three stories about three young women as they navigate testing and treatment for STIs, condom use, birth control options, and emergency contraception. There are two version of the video, one featuring intrauterine devices (IUDs) and implants only, and another with the full range of birth control methods. The video is distributed on a DVD, a USB drive, or a video link that can be emailed or texted to participants. Participants will need either a DVD player and monitor, a computer, or personal electronic device such as a smartphone or tablet, to view the Plan A video.	No staff	After school; Alternative school; In school/classroom-based; community center; community-based; Health clinic or medical facility; school-based health clinic; home-based; residential or group home; website; rural; suburban; urban	Sexual health education	Clinic-based program delivered Individually, Online: Asynchronous (self-directed)	23 min over 1 day	One 23-minute session	Hispanic or Latinx of any race;	Young women	Young women	18-19	High school; Postsecondary	High
Positive Potential Piotrowski, Z. H., and Hedeker, D. Evaluation of Positive Potential Middle School Longitudinal Program in Rural Northwest Indiana Communities: Findings from an Innovative Teen Pregnancy Prevention Program. Report Prepared for Office of Adolescent Health, [43].	Reduce or delay sexual behaviors, use of alcohol, tobacco, and drugs, and promote positive youth development. Three-year program consists of five 45 to 50 minute sessions per year, and an end-of-the-year assembly designed to support existing health and physical education instruction.	School teachers or from outside organizations	In school/ classroom-based; Rural	Positive youth development	Curriculum-based program delivered to a group	5 hours over 3 years	Five 45 to 50-minute sessions and one end-of-year assembly session	White	Youth of any gender	Rural youth	13 or younger;	Elementary school; Middle school	moderate
Positive Prevention PLUS LaChausse, R. G. (2016). A clustered randomized controlled trial of the positive prevention PLUS adolescent pregnancy prevention program. American Journal of Public Health, 106, S91-S96. doi:10.2105/AJPH.2016.303414 [44].	Addresses risk factors and behaviors associated with unplanned teen pregnancy Program includes: increasing adolescent's ability to use risk-reduction skills, contraceptive use, resistance and negotiation skills, access to reproductive health services. Either delay/abstain from sexual activity or use birth control consistently and correctly when engaging in sexual activity. A 13-lesson curriculum	Trained-credentialed health teacher or health educator	In school/ classroom-based; Community based organization;	Sexual health education	Curriculum-based program delivered to a group	9.75 hours over 13 days	Thirteen 45-minute sessions	Hispanic or Latinix of any race; Youth of any race or ethnicity	Youth of any gender	-	13 or younger; 14 to 17	High school; Middle school	moderate

Possessing Your Power JK Tanner Inc. "Evaluation of Choosing the Best and Possessing Your Power: Comparison of an Evidence-Based Teen Pregnancy Prevention Program and to a New Program." Lighthouse Outreach, Inc. Yes! Dare-2Dream Final Report, 2016. [45].	Character development and youth empowerment for adolescents. Program includes: addresses risk behaviors, including drugs, alcohol, tobacco, premarital sex and teen pregnancy, violence/crime, pornography, gambling, school dropout, and technology/social media. abstinence-centered approach.	Certified facilitator at a community-based organization	In school/ classroom-based; Community-based organization	Sexual risk avoidance	Curriculum-based program delivered to a group	8 hours over 2 to 6 weeks	Eight sessions (session length varies)	Youth of any race or ethnicity	Youth of any gender	-	13 or younger; 14 to 17	High school; Middle school	Moderate
Power Through Choices Oman, R. F., Vesely, S. K., Green, J., Fluhr, J., & Williams, J. (2016). Short-term impact of a teen pregnancy-prevention intervention implemented in group homes. Journal of Adolescent Health, 59(5), 584-591. [46].	Teen pregnancy, HIV, and STI prevention. Program includes: self-empowerment , informed decision-making regarding sexual risk behaviors, inspires youth to imagine a positive future for themselves10 sessions that,	Two trained facilitators	Correctional facility; Home-based case management; Residential or group home	Sexual health education	Curriculum-based program delivered to a group	15 hours over 5 to 10 weeks	Ten 1.5 hour sessions	Hispanic or Latinix of any race; Youth of any race or ethnicity	Youth of any gender	Youth involved in the child welfare system; Youth involved in the juvenile justice system	13 or younger; 14 to 19;	High school; Middle school	Did not meet eligibility criteria
Prime Time Sieving, R. E., McRee, A., Secor-Turner, M., Garwick, A. W., Beiringer, L. H., Beckman, K. J., McMorris, B. J., & Resnick, M. D. (2014). Prime time: Long-term sexual health outcomes of a clinic-linked intervention. Perspectives on Sexual and Reproductive. [47].	Prevent pregnancy among vulnerable teens. Program includes one-on-one case management, peer educator groups, delivered in tandem. build skills, confidence, motivation, and supportive relationships An 18-month youth development program, t	Trained case managers	Health clinic or medical facility	Positive youth development	Case management delivered individually; Curriculum-based program delivered to a group;	36 hours over 18 months	Eighteen 1-2 hour case management sessions and Sixteen 2 – hour training sessions	African American or black; Youth of any race or ethnicity	Young women	Sexually active youth;	13 or younger 14-19	High school; Middle school	High
Project IMAGE Champion, J. D. & Collins, J. L. (2012). Comparison of a theory-based (AIDS risk reduction model) cognitive behavioral intervention versus enhanced counseling for abused ethnic minority adolescent women on infection with sexually transmitted infection: Results of a randomized controlled trial. International Journal of Nursing Studies, 49(2), 138-150. [48].	reduce subsequent STIs Program includes: small group workshops, individual counseling sessions, health-promoting elements of African- and Mexican-American culture.	Community health worker or women's sexual health professional	Health clinic or medical facility	Clinic-based	Case management delivered individually; Curriculum-based program delivered to a group; Motivational interviewing delivered individually	Program length varies	Two or Three 4-hour sessions, three 1.5 to 2- hour group sessions; two 1-hour counseling sessions	African American or black; Hispanic or Latinx of any race	Young women	Sexually active youth;	14-19	High school; Middle school	moderate

Project TALC May, S., Lester, P., Ilardi, M., & Rotheram-Borus, M. J. (2006). Childbearing among daughters of parents with HIV. American Journal of Health Behavior, 30(1), 72-84. [49].	Reduce emotional distress, problem behaviors, and pregnancy. Program includes: coping skills to HIV-positive A 24-session social learning program	Trained facilitator	Community center; Community based organization	Healthy relationship	Curriculum-based program delivered individually; Curriculum-based program delivered to a group;	48 to 72 hours over 12 weeks or over 4 to 6 years	Twenty four 2- to 3 hour sessions	Hispanic or Latinx of any race	Youth of any gender	Adult parents and caregivers	13 or younger; 14 – 20 or older	High school; Middle school	High
Promoting Health Among Teens! Abstinence only Intervention Elaine M. Walker; Inoa, R,. & Coppola, N. (2016). Evaluation of Promoting Health Among Teens Abstinence-Only Intervention in Yonkers, NY. Sametric Research. Princeton, N.J. 08540 [50].	Promoting Health Among Teens! Abstinence-Only (PHAT-AO) is an eight-hour abstinence-only HIV/STD- and pregnancy-prevention intervention for adolescents. The interactive and student-centric curriculum is designed to teach participants about puberty, HIV/STDs, and pregnancy prevention, and building refusal and negotiation skills, with a focus on abstinence as the best method for avoiding infection and pregnancy.	Trained facilitator	After school; In school/ classroom-based; Community center; Community-based organization; Urban	Sexual risk avoidance	Curriculum-based program delivered to a group	8 hours over 1 year	Eight 1- hour sessions or nine 45-minute sessions	African American or black; Hispanic or Latinx of any race; Youth of any race or ethnicity.	Youth of any gender	-	13 or younger; 14-17	High school; Middle school	High
Promoting Health Among Teens! Comprehensive Abstinence and Safer Sex Intervention Martin, S., Hill, A., Nye M., Hollman-Billmeier, K. (2015) Evaluation of Alaska Promoting Health Among Teens, Comprehensive Abstinence and Safer Sex (AKPHAT) in Alaska. Institute of Social and Economic Research, University of Alaska Anchorage. [51].	HIV/STD- and pregnancy-prevention intervention for adolescents Program includes: knowledge of HIV/STDs, abstinence as the best way to avoid infection and pregnancy, condom use, refusal and negotiation 12-hour interactive and student-centric for small and larger groups	Trained staff	After school; In school/ classroom-based; Community center; Community-based organization Urban	Sexual health education	Curriculum-based program delivered to a group	12 hours over 1 year	Twelve 1-hour sessions	African American or Black; American Indian or Alaska Native; Youth of any race or ethnicity	Youth of any gender	-	13 or younger; 14-17	High school; Middle school	Moderate

Pulse Manlove, J., Whitfield, B., Finocharo, J., Cook, E. (2021). Lessons learned from replicating a randomized control trial evaluation of an app-based sexual health program. International Journal of Environmental Research and Public Health, 18(6), 3305. https://doi.org/10.3390/ijerph18063305 [53].	Pulse is a web-based mobile health app designed to support healthy sexual behavior for Black and Latina women ages 18 to 20. Pulse includes content on birth control methods and method reminders; healthy relationships, sex readiness, and consent; reproductive anatomy, physiology, and sexually transmitted infections (STIs); reproductive health care access; and pregnancy and pregnancy testing. Pulse delivers content through audio, interactive comics and quizzes, and videos. It also provides a clinic locator and calendar tools to facilitate accessing reproductive care. The program includes an optional text message component that allows participants to receive three text messages per week for six weeks, reminding them to use the Pulse mobile health app.	Self-led program	Mobile app; Texting; website	Sexual health education	Mobile app-based program delivered individually	3 hours total	One 3-hour session	African American or Black; Hispanic or Latinix of any race	Young women	-	18-20 or older	Postsecondary	High
Raising healthy children (formerly known as the Seattle Social Development Project) Hawkins, J. D., Kosterman, R., Catalano, R. F., Hill, K. G., & Abbott, R. D. (2008). Effects of Social Development Intervention in Childhood 15 Years Later. Archives of Pediatrics & Adolescent Medicine, 162(12), 1133-1141. [54].	comprehensive school wide action to strengthen instructional practices and family involvement The progra includes: multi-year social development approach to positive youth development. creates strong connections and bonds that children need to succeed in school and life: opportunities, skills, and recognition.	Classroom teachers.	In school;/ classroom-based; Home-based	Positive youth development	Curriculum-based program delivered to a group	-	Five sessions (session length varies)	White; Youth of any race or ethnicity	Youth of any gender	-	13 or younger	Elementary school	Moderate
Reducing the Risk Barbee, A. P., Cunningham, M. R., van Zyl, M. A., Antle, B. F., & Langley, C. N. (2016). Impact of two adolescent pregnancy prevention interventions on risky sexual behavior: A three-arm cluster randomized control trial. American Journal of Public Health, 106, S85-S90. doi:10.2105/AJPH.2016.303429 [55].	Prevents Pregnancy, STDs & HIV Program includes: development of attitudes and skills such as risk assessment, communication, decision-making, planning, and refusal strategies.	Classroom teachers or family life educators.	In school/ classroom-based; Community-based organization; Rural; suburban; urban	Sexual health education	Curriculum-based program delivered to a group	16 hours over 1 year	Sixteen 45-minute to 1-hour sessions	African American or Black; White; Hispanic or Latinix of any race; Youth of any race or ethnicity	Youth of any gender	-	14-19	High school	Moderate

Safer Choices Kirby, D. B., Baumler, E., & Coyle, K. K. (2011). The Impact of "Safer Choices" on Condom Use and Contraceptive Use among Sexually Experienced Students at Baseline. Unpublished manuscript. [56].	STD, HIV, and teen pregnancy prevention Program includes: condom use, behavioral change, knowledge about HIV and STDs, promote more positive norms and attitudes abstinence	Trained teachers	In school/ Classroom-based	Sexual health education	Curriculum-based program delivered to a group	16 hours over 2 years	Twenty-one 45 minute sessions	White; youth of any race or ethnicity	Youth of any gender	-	14-19	High school	High
Safer Sex Intervention (SSI) Kelsey, M., Layzer, J., Price, C., Juras, R., and Walker, J. "Safer Sex Intervention: Short-Term Impact Report." Draft Teen Pregnancy Prevention Replication Study, Abt Associates: Cambridge, MA, November 2016f. [57].	Reduce STIs Program includes: condom use Delivered one-on-one through a 30- to 50-minute session with a health educator, with three 10- to 30-minute follow-up sessions over the following six months.	Trained female health educator	Community-based organization; Health clinic or medical facility; School-based health clinic	Sexual health education	Clinic-based program delivered individually, Motivational interviewing delivered individually	2 hours over 6 months	One 30-50 minute session and Three 10-30 minute booster sessions	African American or Black; youth of any race or ethnicity	Young women	Sexually active youth	13 or younger; 14-20 or older	Elementary school; high school; middle school; post-secondary	High
Seventeen Days (formerly what could you do?) Downs, J. S., Ashcraft, A. M., & Murray, P. J. (2016). Video for adolescent pregnancy prevention: Promises, challenges, and future directions. American Journal of Public Health, 106, S29-S31. doi:10.2105/AJPH.2016.303428. [58].	Contraception and STDs. Program includes: The use of DVD. The DVD presents the viewer with different scenarios involving decision that young women face in relationships. Participants can practice what they would do in similar situations through the frequent use of "cognitive rehearsal."	Trained educator	After school; community-based organization; Health clinic or medical facility; Mobile app; website	Sexual health education	Curriculum-based program delivered individually, Mobile app-based program delivered individually, Online: Asynchronous (self-directed/online)	3.5 hours over 1 day	One 3.5-hour session and optional booster sessions	African American or black; White; youth of any race or ethnicity	young women	Sexually active youth	14 - 19	High school	High
Sexual Health and Adolescent Risk Prevention (SHARP) Schmiege, S. J., Broaddus, M. R., Levin, M., & Bryan, A. D. (2009). Randomized trial of group interventions to reduce HIV/STD risk and change theoretical mediators among detained adolescents. Journal of Consulting & Clinical Psychology, 77(1), 38-50. [59].	STI/HIV prevention intervention. Program includes: STI/HIV knowledge, condom use, sexual risks alcohol use, and set long-term goals. Session is about four hours long. Organized by gender.	Staff are familiar with Motivational Interviewing techniques.	Correctional facility;	Sexual health education	Curriculum-based program delivered to a group	3.5 to 4 hours total over 1 day	One 3.5 to 4 hour session	White; youth of any race or ethnicity	Young men; Young women; Youth of any gender	Youth involved in the juvenile justice system	14 - 19	High school	Moderate

SiHLE (Sisters, Informing, Healing, Living, Empowering) Klein, C. H., & Card, J. J. (2011). Preliminary efficacy of a computer-delivered HIV prevention intervention for African American teenage females. AIDS Education and Prevention, 23(6), 564-576. [60].	Reduce sexual risk behaviors. Program includes: HIV prevention, relationships, dating, sexual health both cultural and gender pride to give participants the skills and motivations to avoid HIV and other STDs. A peer-led, group-level, social-skills training intervention	One adult and two peer facilitators	Community-based organization; Health clinic or medical facility	Sexual health education	Curriculum-based program delivered to a group	16 hours Over 1 month	Four 4-hour sessions	African American or Black	Young women;	Sexually active youth	14-19	High school	High
Sisters Saving Sisters Jemmott, J. B., Jemmott, L. S., Braverman, P. K., & Fong, G. T. (2005). HIV/STD risk reduction interventions for African American and Latino adolescent girls at an adolescent medicine clinic: A randomized controlled trial. Archives of Pediatrics & Adolescent Medicine, 159(5), 440-449. [61].	Reduce risk of HIV/STDs, Program includes: number of sexual partners, sexually transmitted infections. Provided in small groups and led by trained facilitators	Health educators, social workers, nurses, and others who provide social service	In school/ classroom-based; Community-based organization; Health clinic or medical facility	Sexual health education	Curriculum-based program delivered to a group	5 hours Over 1 year	Five 1-hour sessions	African American or Black; Hispanic or Latinx of any race	Young women;	Sexually active youth	13 or younger; 14-19	High school	High
STRIVE (Support to Reunite, Involve and Value Each Other) Milburn, N. G., Iribarren, F. J., Rice, E., Lightfoot, M., Solorio, R., Rotheram-Borus, M., Desmond, K., Lee, A., Alexander, K., Maresca, K., Eastmen, K., Arnold, E. M., & Duan, N. (2012). A family intervention to reduce sexual risk behavior, substance use, and delinquency among newly homeless youth. The Journal of Adolescent Health, 50(4), 358-364. [62].	Reduce sexual risk behaviors, substance use, and delinquency among youth who have recently run away from home. A five-session family-based intervention By a trained specialist.	Facilitators should have experience working with at-risk adolescents.	Community-based organization; Home-based; Home-based case management	Healthy relationship	Curriculum-based program delivered individually; Curriculum-based program delivered to a group	10 hours over 5 weeks	Five 1.5- to 2—hour sessions	Hispanic or Latinix of any race; Youth of any race or ethnicity	Youth of any gender	Youth experiencing homelessness	13 or younger; 14 - 17	High school; Middle school;	Moderate

Teen Health Project Sikkema, K. J., Anderson, E. S., Kelly, J. A., Winett, R. A., Gore-Felton, C., Roffman, R. A., et al. (2005). Outcomes of a randomized, controlled community-level HIV prevention intervention for adolescents in low-income housing developments. AIDS, 19(14), 1509-1516. [63].	A community-level HIV-prevention intervention Program includes: modeling, peer norm, and social reinforcement; small group workshops, follow-up sessions, a teen leadership council, parent education, and a community campaign. HIV-prevention messages. condom use. approaches to discussing abstinence with their children	Two trained facilitators	Community-based organization	Sexual health education	Curriculum-based program delivered to a group	37.5 hours over 6 months	One 1.5-hour parent session, Twenty-four 1.5-hour council sessions, and community events	African American or Black; Youth of any race or ethnicity	Youth of any gender	NA	13 or younger; 14 - 17	High school; Middle school;	Moderate
Teen Options to Prevent Pregnancy (T.O.P.P.) Rotz, Dana, Dara Lee Luca, Brian Goesling, Elizabeth Cook, Kelly Murphy, and Jack Stevens. "Final Impacts of the Teen Options to Prevent Pregnancy Program." Cambridge, MA: Mathematica Policy Research, July 2016a. [64].	Prevent Rapid Repeat Pregnancy program includes: motivational interviewing, contraceptive access, social service support over an 18-month period birth control plan. Delivered by trained nurse educators through home and telephone-based care coordination.	Nurse educators	Health clinic or medical facility; Home-based	Clinic-based	Clinic-based program delivered individually, Motivational interviewing delivered individually	18 months	18 sessions (Session length varies)	White; Youth of any race or ethnicity	Young women	Pregnant and parenting teen	13 or younger; 14-19	Elementary school; high school; middle school	High
Teen Outreach Program (TOP) Robinson, W. T., Seibold-Simpson, S., Crean, H. F., & Spruille-White, B. (2016b). Randomized Trials of the Teen Outreach Program in Louisiana and Rochester, New York. American Journal of Public Health, 106, S39-S44. doi:10.2105/AJPH.2016.303403. [65].	Promotes the positive development of adolescent's health Program includes curriculum-guided, interactive group discussions; positive adult guidance support; community service learning. Building social, emotional, and life skills; developing a positive sense of self; connecting with others. health and wellness, sexuality, emotion management, self-understanding, peers in the program.	Trained facilitators	After school; Alternative school; In school/classroom-based; community center; community-based organization; Residential or group home; Rural; Suburban; urban	Positive youth development	Curriculum based program delivered to a group	36 hours over 9 months	Thirty six -1 hour sessions	African American or Black; White; Youth of any race or ethnicity	Youth of any gender	NA	13 or younger; 14-19	High school; Middle school	Moderate
Vision of you Dainis, A. (2021). Evaluation of Vision of You in the Commonwealth of Virginia./em Dainis Company, Inc.[66].	Vision of You is an online, self-paced sexuality education program that aims to reduce sexual activity and the number of sexual partners, increase contraceptive use, and prepare participants for adulthood. It is designed for youth ages 13 to 19. It includes content on healthy relationships, life skills, communication skills, and adolescent development. The online curriculum is interactive and includes games, videos, quizzes, character scenarios, and reflection questions.	Trained instructor	After school; Alternative school; Community-based organization; correctional facility; Home-based; Website; rural	Sexual health education	Online: Asynchronous (self-directed/online)	6.75 hours over 4 to 6 weeks	Nine 45 minute sessions	White; Youth of any race or ethnicity	Young women; Youth of any gender	LGBTQ youth; Pregnant or parenting youth; Rural youth; Sexually active youth; Youth involved in the juvenile justice system	14 -19	High school	High

Table 2: Percentage (%) of individual activities by category.

CATEGORY	ACTIVITY	PERCENTAGE (%)
PROGRAM TYPE		
	Sexual health education	67.9
	Positive youth development	17.0
	Clinic based	5.7
	Healthy relationship	3.8
	Sexual risk avoidance	5.7
PROGRAM STRUCTURE		
	Curriculum based program delivered to a group	58.7
	Curriculum based program delivered individually	9.3
	Motivational interviewing delivered individually	4.0
	Online synchronous	2.7
	Online: asynchronous (self-directed online)	9.3
	Case management delivered individually	5.3
	Text-based delivered individually	1.3
	Clinic based program delivered individually	6.7
	Mobile app based program delivered individually	2.7
RACE & ETHNICITY		
	African American & Black	25
	American Indian or Alaska Native	0.9
	Asian	0
	Hispanic or Latinx of any race	21.3
	Native Hawaiian or other Pacific Islander	0
	White	13
	Youth of any race or ethnicity	39.8
	other	
GENDER		
	Nonbinary youth	1.5
	Transgender youth	1.5
	Young men	6.1
	Young women	34.9
	Youth of any gender	56.0
SPECIAL POPULATIONS		
	Adult parents and caregivers	13.6
	LGBTQ youth	11.4
	Pregnant or parenting youth	11.4
	Rural youth	11.4
	Sexually active youth	29.5
	Youth experiencing homelessness	4.5
	Youth involved in the child welfare system	9.1
	Youth involved in the juvenile justice system	6.8
	Youth who are victims of trafficking	0
	Youth with developmental disabilities	0
	Youth serving professionals	2.3
AGE		
	13 or younger	24.9
	14 to 17	39.0
	18 to 19	28.2
	20 older	7.5
GRADE LEVEL		
	Elementary school	5.9
	High school	50.7
	Middle school	34.2
	postsecondary	9.4
PROGRAM SETTING		
SCHOOL BASED	After school	31.7
	Alternative school	15.0
	In school/case management	5.0
	In school/classroom based	48.4
COMMUNITY BASED	Community center	19.5
	Community college	3.7
	Community based organization	61.1
	Faith-based facility	11.1
CLINIC BASED	Health clinic or medical facility	71.4
	Mental health clinic	9.5
	School based health clinic	19.0
RESIDENTIAL	Correctional facility	28.0
	Home-based	28.0
	Home-based case management	8.0
	Residential or group home	36.0
TECHNOLOGY BASED		
	Mobile app	28.6
	Texting	14.3
	website	57.2
GEOGRAPHY		
	Rural	32.4
	Suburban	29.7
	urban	37.8
PROGRAM LENGTH		
	0 -6 MONTHS	54.0
	6 - 12	6.0
	12 -18	16.0
	18 - 24	2.0
	24 - 30	6.0
	30- 36	0
	36 - 48	10.0
	>48	6.0
LEVEL OF EVIDENCE		
	High	62
	Moderate	38

Grade Level

50.7% of the studies were conducted in High school, followed by middle school at 34.2%. 9.4% in postsecondary and 5.9% in elementary school.

Program Setting

- **School based:** 48.4% were conducted in school/classroom. After school accounted for 31.7%, Alternative school was 15.0%. The least was school/case management which accounted 5.0%.

- **Community Based:** 61.1% of the programs was conducted in community based organization. 19.5% the community center. 11.1% was conducted in a faith-based facility. Community College, accounted the least at 3.7%.
- **Clinic Based:** 71.4 % were conducted in Health clinic or medical facility. 19.0% in school based health clinic. The least was in mental health clinic, 9.5%.
- **Residential:** 36% was conducted in Residential or group home. Some programs were conducted in correctional facility and homebased. Both representing 28% of the residential centers. Home-Based Case management accounted for 8.0%.
- **Technology based:** 57.2% of the technology used was website. Mobile app accounted for 28.6. The least, was texting which accounted for 14.3%.
- **Geography:** Most programs were implemented in the urban (37.8%), followed by rural which accounted for 32.4% and suburban for 29.7%.

Discussion

This review, examined the evidence based programs used in teen pregnancy prevention in terms of type, structure, the population served, race and ethnicity, gender, age, special populations, age, grade level, program location, technology based, geography, program length, level of evidence and the health educators. This review is focused on programs that are delivered by nurses [14-64].

Nurses are uniquely positioned to lead multidisciplinary teams to foster health. As a profession, nurses have extensive experience talking to people about sensitive topics. Nurses have been rated as more sensitive interviewers [65,66] and are expected to discuss a broad spectrum of reproductive health issues with individuals of all ages and backgrounds, including HIV/AIDS, sexual pleasure, and condom use. These expectations begin very early during a nurses' formal education with nurses in their first year of training being expected to become competent communicators on a wide range of sensitive topics. Being skilled at conducting sensitive discussions may result in nurses being more likely to address salient points, even if they are sensitive.

Of the fifty-one evidenced-based TPP programs, only five (5) are delivered by nurses (Table 1).

Be Proud! Be Responsible! Be Protective

The overall goal of this program is to Reduce unprotected sex (knowledge, beliefs, and intentions related to condom use and sexual behaviors, impact of HIV/AIDS on mum and child, prevention of disease (pregnancy postpartum period, and special concerns). An Eight 60-minute modules focusing on behavioral attitudes, expectations, negotiation, problem solving skills, self-efficacy, and feelings of maternal protectiveness. The program is focused on sexual health education, Curriculum-based program delivered to a group, in school/classroom-based; Community center, Community- based organization, Delivered for 8 hours, over 1 year in a Eight 1- Hour sessions. Focused on Young women, Pregnant or Parenting Youth 14-19 years of Hispanic or Latinos of any race; **Youth of any race or ethnicity**, in High school and Middle school. The level of evidence is considered 'High' [19].

Generations

The overall goal is to Improve mental, physical health outcomes and to reduce repeat pregnancies. Program includes: integrated medical care, pregnancy prevention, mental health care, social work services comprehensive support, primary care, developmental screenings. The program is clinic based, focused on Case management delivered individually, for African American or Black; Youth of any race or ethnicity; Young women; youth of any gender; Pregnant or parenting youth14-20 or older. Program location is Health clinic or medical facility, High school Program and session length varies

The level of evidence is. Considered 'Moderate' [27].

Making Proud Choices!

The overall goal of this program is STDs, Teen Pregnancy, and HIV prevention program. Program includes: knowledge, confidence and skills necessary to reduce their risk of sexually transmitted diseases (STDs), HIV, abstaining from sex or using condoms if they choose to have sex. Consists of eight modules. The program is focused on Sexual health education; Curriculum-based program delivered to a group; Eight hours over 1 year; Eight 1-hour sessions for Young women; Youth of any gender, 13 or younger; 14-17 year old Youth of any race or ethnicity; African American or Black. Program location is After school; In school/classroom based; community based; High school; Middle school. The level of evidence is 'High' [40].

Sisters Saving Sisters

The overall goal of this program is to Reduce risk of HIV/STDs, Program includes: number of sexual partners, sexually transmitted infections. Provided in small groups.
The program is focused on Sexual health education; Curriculum-based program delivered to a group; 5 hours Over 1 year; Five 1-hour sessions; for African American or Black; Young women; Hispanic or Latinx of any race Sexually active youth, 13 or younger; 14-19; Program location is in school/classroom-based; Community-based organization; Health clinic or medical facility, High school. The level of evidence is 'High' [61].

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

The overall goal of this program is to Prevent Rapid Repeat Pregnancy program includes: motivational interviewing, contraceptive access, social service support over an 18-month period birth control plan. Delivered by trained nurse educators through home and telephone-based care coordination. This is a Clinic-based program delivered individually, Motivational interviewing delivered individually; 18 months; 18 sessions (Session length varies). The program is focused on White; Youth of any race or ethnicity, Young women, Pregnant and parenting teen, 13 or younger; 14-19,

Program location is Health clinic or medical facility; Home-based, Elementary school; high school; middle school. The level of evidence is 'high) [64].

Most of these programs are delivered in school. School nurses have always been useful in enhancing health protective behavior[6] as well as providing one-on-one instruction and guidance to adolescents regarding their reproductive health.[7] However, for the most part, school-based instruction on reproductive health and the prevention of disease (e.g., STIs, HIV) has been carried out by health education and science teachers[8] who have received varying levels of preparation to deliver such programming [66].

There is evidence to suggest that parents feel that their children, particularly their high school children, should learn this information and if not through their traditional health and science classes, from a medical or health professional [67,68].

Schools are a logical setting for disseminating information about HIV/STI prevention and risk reduction behaviors to adolescents [67,69], and most often this information is provided as part of the regular science and/or health education curricula. Some studies, have suggested that while classroom health education teachers may be skilled at imparting knowledge, they may be less effective with instruction involving skills aimed at reducing risky sexual behaviors. In these studies, Students reported more positive views of health education teachers' performance with regard to the presentation of materials, the comfort level of the facilitator, and the degree to which the curriculum challenged how students thought about health. However, students who participated in sessions that were taught by school nurses were more likely to report significant and sustainable changes in a broad range of sex-related cognitive mediators including self-efficacy, condom-related beliefs, and peer behavior beliefs while those taught by health education teachers reported long-term impact on condom knowledge only. Previous studies have indicated that teens' perceptions of facilitators contributes to program outcomes [67]. Research by Akpabio et al. [68] found that attitudes toward HIV preventative measures were most potent when given by nurses [67].

School nurses discussed the importance of using condoms, negotiation of condom use, how to control sexual impulses, and the mechanics of using a condom with numerous adolescents during one-on-one encounters. They were able to effectively apply these experiences to the classroom setting. In contrast, the training and role of classroom health education teachers with regard to teaching reproductive health is more varied and focuses more on the transfer of information than skill development, such as how HIV is transmitted versus how to correctly use a condom [66]. A number of the teacher facilitators split their time between teaching health, physical education, and coaching, thereby potentially reducing the opportunity and experience of discussing explicit reproductive health issues with adolescents, such as how to use a condom correctly [67].

School nurses are also likely to have more experience with facilitating the acquisition of technical skills; teaching individuals to perform technical tasks ranging from self-injection of medication to colostomy care [70]. Nurses are recognized for their expertise in building self-efficacy and self-competence in patient encounters and interactions with individuals across healthcare and community-based settings [71]. Thus, the nurses' skill in this area may have accounted for the students reported continued confidence in their ability to use a condom (condom technical skills) at 12 months while the confidence of students who were taught by health education teachers had diminished well before that time [67].

The majority of these programs showed a high level of evidence. Suggesting that these studies were rigorously evaluated. Our review shows that only few programs used nurses. One possible explanation for this low number may be involving school nurses in classroom reproductive health education may not be realistic for most school districts today to commit school nurse time to the classroom due to the increasing student to nurse ratio and growing fiscal constraints [67].

Another possible reason may be that nursing students do not have adequate training as nurse educator. Several studies, it has emerged that most medical students and medical health professionals do not receive sufficient education on sexual health and do not feel comfortable when dealing with sexual problems [72-74].

Conclusion

Most pregnancy prevention programs are made up of more than one component. As a result, it is difficult to determine which components cause a difference, which make the biggest difference, or whether all components are necessary. In addition, comparisons between programs are problematic because the number of sessions and the length of the intervention period vary from program to program. For example, Be Proud! Be Responsible! Be Protective is delivered for 8 hours, over 1 year in a Eight 1- Hour sessions, Generations the sessions vary, Making Proud Choices! consists of Eight hours over 1 year; Eight 1-hour sessions, Sisters Saving Sisters is delivered for 5 hours Over 1 year; Five 1-hour sessions and Teen Options to Prevent Pregnancy (T.O.P.P.) delivered for 18 months; 18 sessions (Session length also varies).

This study found a gap in the number of sex educators who are nurses. It is recommended that more nurses should be involved as sex educators in school, community and clinic based programs.

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