How Effective is School-based Comprehensive Sex Education at Protecting Young People?

The Institute for Research and Evaluation

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The Institute for Research and Evaluation (IRE)

- Evaluating school-based sex education programs for 25 years
- More than 100 evaluation studies
- U.S. federally funded studies in 30 states; three foreign countries
- Invited to provide expert testimony to the U.S. Senate, the U.S. House of Representatives, and the White House
- Studies published in peer-reviewed journals, including:
  - *The American Journal of Preventive Medicine*
  - *The American Journal of Health Behavior*
  - *Issues in Law and Medicine* (in press)

Threats to Physical and Emotional Health from Teen Sex

STDs & HIV

- Worldwide, young people aged 15–24 account for 45% of all new HIV infections.[1]
- Globally, more than 1 million new STD infections occur each day, and youth are especially vulnerable.[2]
- In the U.S. "1 in 4 sexually active adolescent females has an STD" and rates are rising.[3]

Teen Pregnancy

- Rates are still unacceptably high in many youth populations.[4]
- Leads to lower education, higher poverty, higher crime, and
- A self-perpetuating vicious cycle.[5]

Emotional Harm and Violence

- Teenage sexual activity decreases emotional health (more depression, regret, etc.),[6]
- Leads to higher rates of dating violence,[7]
- Especially for girls and younger teens (male and female).[6,7]

The Goal

Decrease Sexual Risk Behavior

in order to

Increase Physical and Emotional Health for Young People

A popular prevention strategy:

Comprehensive Sex Education (CSE)

1. Teaches and promotes condom/contraceptive use
2. Some programs purport to also teach abstinence, although the amount of emphasis varies widely from program to program
3. Claimed dual benefit: to increase teen condom use *and* reduce rates of teen sex, within the same population
4. Usually targets middle school and/or high school youth (12+ years old)

Comprehensive Sex Education (CSE)

Common Concerns:

A "values-free" sexual philosophy that often…

- Contains permissive and explicit content,
- Normalizes teen sexual activity as expected and accepted, and
- Emphasizes sexual pleasure as a priority or "right" for youth

The claim of "evidence-based" has become the rationale for widespread use of CSE

"proven effective"
"based on the latest scientific evidence"
"clear and compelling evidence for the benefits of CSE"[8]

Four Evidence-Based Problems with CSE

1. **Many CSE programs normalize and label as "acceptable" behaviors that have a significant likelihood of harming youth.**
2. **CSE relies on teaching "safer sex/risk reduction" skills—behaviors that the immature teenage brain is not equipped to master.**
3. **CSE in school settings shows little evidence of real effectiveness at reducing teen pregnancy or STDs or the behaviors that produce them.**
4. **CSE in school settings produces more harmful effects than its proponents acknowledge, in fact, there is more evidence of harm than real effectiveness.**

1. **Many CSE programs normalize behaviors that are very risky for young people.**

A common CSE message: "having sex is a normal part of adolescence and can be practiced safely."[9] However…

- Condom use provides only partial protection from STDs, ranging from 30% risk reduction for genital herpes to 80% for HIV.[10]
- Studies find 17% of new condom users are pregnant within one year,[11]
- And 9% of women using birth control pills become pregnant.[12]
- Teen sexual activity increases emotional distress/depression and dating violence, especially for girls and younger teens.[6,7]
- The "sexualization" of girls has negative impact on their cognitive performance, emotional well-being, and health.[13]
- Condoms cannot prevent depression, dating violence, or sexualization.

2. CSE relies on "safer sex/risk reduction" skills—behaviors the immature teenage brain and pre-teen brain are not equipped to master.

- The teenage brain is not yet physically matured—regions of the brain that control impulsiveness, planning, and judgment are not fully developed until the early to mid-20s.[14]
- Negotiating and performing consistent correct condom use is not suited to the capacity of the teenage brain, especially in impulse-driven situations.[14,15]
- Negotiating "consent" is a difficult task, even for mature adults–children are not cognitively or legally capable of giving consent.
- High rates of condom user error and failure are common, even for experienced adults (30% to 50% in a 3-month period); we would expect rates to be even higher for adolescents.[16]

3. **CSE in school settings shows little evidence of real effectiveness at reducing teen pregnancy or STDs or the behaviors that produce them.**

What is evidence of real effectiveness?

A Lenient Definition of Effectiveness
(insufficient evidence of real effectiveness)

- Short-term but not long-term effects, OR
- Improvement on less-protective behaviors (e.g., *frequency of sex*) but not *abstinence* or *condom use* (especially *consistent use*) OR
- Effects found only for a subsample of the targeted population (such as girls but not boys), OR
- Positive effects found in a study by the program developers even though null *or negative* effects were found in studies by independent evaluators.

Insufficient evidence of program effectiveness: *It's Your Game: Keep It Real*

	Study conducted by?	Sexual Initiation (onset of sexual activity)	Consistent Condom Use	Recent/ Frequent Condom Use	Recent Sex	Number of Sex Partners	Pregnancy	STDs
Tortolero, 2010[17]	**Program Developers**	**Decreased 12 mo. after the program** **No significant effect for boys**	Not Measured	**No Effect**	**Decreased 12 months after the program**	**No Effect**	Not Measured	Not Measured
Markham, 2012/2014[18]	**Program Developers**	**Decreased after 10 but not 24 mo.** **No significant effect for boys**	**Increased 10 months after (not 24 months after)**	Not Measured	**Decreased 10 months after (not 24 months after)**	**Harmful Effect (Increased)**	Not Measured	Not Measured
Potter, 2016[19]	Independent Evaluators	**Harmful Effect (Increased)**	Not Measured	**No Effect**	**No Effect**	Not Measured	Not Measured	Not Measured
Coyle, 2016[20]	Independent Evaluator	**No Effect**	Not Measured	Not Measured	Not Measured	Not Measured	Not Measured	Not Measured

Scientific Field of Prevention Research:

evidence-based criteria for program effectiveness

(e.g., *The Society for Prevention Research, Blueprints for Healthy Youth Development*)[21]

A Credible Definition of Sex Education Effectiveness*

- Long-term effects (at least 12 months after the program),
- On a key protective indicator (increased abstinence or condom use--especially consistent use, reduced pregnancy or STDs),
- For the full target population, not just a subgroup.
- All evidence is taken into account, especially studies by independent evaluators.
- Negative program effects nullify a program's label as "effective." ("First, do no harm…")

*Derived from the scientific field of prevention research (e.g., *The Society for Prevention Research, Blueprints for Healthy Youth Development*)[21]

Key Protective Behaviors

Reduced Sexual Initiation/Abstinence from Sexual Activity

- Provides 100% protection from pregnancy, STDs, HIV
- Reduces risk of dating violence[7]
- Eliminates the emotional harm associated with teen sexual activity[6]

Consistent Condom Use (CCU)—with every act of sex

- Maximizes the condom's *partial* protection from pregnancy, STDs, HIV
- "To achieve the maximum protective effect, condoms must be used both consistently and correctly." (Centers for Disease Control & Prevention)[22]
- For studies that did not measure CCU we counted less-protective measures,—recent or frequent condom use—as an indicator of program effectiveness.
- CCU does *not* provide 100% protection from pregnancy or STDs or *any* protection from dating violence or emotional harm.

Database: 120 of the strongest and most up-to-date studies of school-based sex education worldwide

Used studies vetted for adequate scientific quality by either:

- **UNESCO**, 2009 & 2018,[23]
- **CDC**-supported Meta-Analysis Study, 2012,[24] or
- **HHS** Teen Pregnancy Prevention Evidence Review, 2010-2018[25]

120 Studies of School-Based Sex Education (1990-2018):

- 60 studies of CSE in U.S.
- 17 studies of Abstinence Education (AE) in U.S.

(AE promotes abstinence but not condom or contraceptive use)

- 43 studies of CSE in non-U.S. settings (29 in Africa)

(Not enough AE studies in international settings for this review)

Table 1. Evidence of Effectiveness for School-Based Sex Ed[26]

Studies finding at least a 12-month Post-Program Improvement for the Target Population, without also having Harmful Impacts				
	Comprehensive Sex Education (CSE)			Abstinence Education (AE)
EFFECT ON:	U.S. & Non-U.S. 103 studies	Non-U.S. 43 studies	U.S. 60 studies	U.S. 17 studies
Pregnancy	1	1	0	0
STDs	1	1	0	0
Sexual Initiation/Onset	2	1	1	7
Consistent Condom Use (CCU)	0	0	0	N.A.
Condom Use-Recent/Frequent (when CCU was not measured)	2	0	2	N.A.
Dual Benefit (increased both Condom Use & Abstinence)	0	0	0	N.A.
Total Evidence of Effectiveness	6/103 studies	3/43 studies	3/60 studies	7/17 studies
Independent Evidence—the study was not done by the program's developers	1 study	1 study	0 studies	5 studies

Table 2. Evidence of SUCCESS vs. FAILURE[26]

	School-Based Comprehensive Sex Education (CSE)				Abstinence Education (AE)
Key Protective Indicators: • Increased abstinence • Increased condom use /CCU • Reduced pregnancy • Reduced STDs	**Non-U.S. & U.S.** **103 studies**	**Non-U.S.** **43 studies**	**Africa** **29 studies** **(Sub-set of non-U.S.)**	**U.S** **60 studies**	**U.S.** **17 studies**
Success: • % of programs that measured a 12-month main effect on a key indicator and found one, without other negative effects	6/47 13%	3/27 11%	2/19 11%	3/20 15%	7/15 47%
Failure: • % of programs that measured a 12-month main effect on a key	**87%**	**89%**	**89%**	**85%**	**53%**

4. **CSE in school settings produces more harmful effects than its proponents acknowledge, in fact, there is more evidence of harm than real effectiveness.**

Table 3: Evidence of Negative/Harmful Effects[26]

	School-Based Comprehensive Sex Education				Abstinence Education
Negative/Harmful Effects (includes short-term subgroup effects)	**U.S. & Non-U.S.** 103 studies	**Non-U.S.** 43 studies	**Africa** 29 studies (Subset of non-U.S.)	**U.S.** 60 studies	**U.S.** 17 studies
Increased Pregnancy	1	0	0	1	0
Increased STDs	1	1	1	0	0
Increased Sexual Activity (Initiation/Frequency of Sex)	9	5	3	4	0
Decreased Condom Use	3	1	1	2	0
Increased Oral Sex	2	0	0	2	0
Increased #Sex Partners	3	2	2	1	1
Forced or Coerced Sex	2	2	2	0	0
Increase in Paid Sex	1	1	1	0	0
Total #Negative Effects	22	12	10	10	1
Net #Studies finding Negative Effects (Some programs had more than one harmful impact)	**16 studies 16%**	**9 studies 21%**	**7 studies 24%**	**7 studies 12%**	**1 study 6%**

Some popular school-based CSE programs that have produced significant harmful effects*

- ***CAS Carrera*** (increased teen pregnancy)[27]
- ***¡Cuídate!*** (increased vaginal and oral sex and decreased condom use for substantial subgroups of program participants) [28]
- ***It's Your Game: Keep It Real*** (increased sexual initiation and number of partners)[29]
- ***Reducing the Risk*** (increased vaginal and oral sex for substantial subgroups of program participants)[30]
- ***Teen Outreach Program/TOP*** (increased teen pregnancy)[31]

*Even though the *Society for Prevention Research* and *Blueprints for Healthy Youth Development* stipulate that such negative effects should negate designation as an "effective" program, HHS's *Teen Pregnancy Prevention* websites includes the above programs on their list of programs "showing…effectiveness."[20, 24]

Table 4: Evidence of EFFECTIVENESS vs. HARM[26]

	School-Based Comprehensive Sex Education (CSE)				Abstinence Education (AE)
	U.S. & Non-U.S. Combined 103 studies	**Non-U.S.** 43 studies	**Africa** 29 studies (Sub-set of non-U.S.)	**U.S.** 60 studies	**U.S.** 17 studies
Effectiveness = Improvement on a key indicator , for the target population, at least 12 months post-program, without other negative effects	6 studies	3 studies	2 studies	3 studies	7 studies
Harmful Impact = Increased sexual risk behavior, pregnancy, or STDs: • Lasting any duration • For the target population or a substantial subgroup	16 studies	9 studies	7 studies	7 studies	1 study

Why might these CSE results be so different, so much worse, than what you have heard before?

Other CSE Reviews	The IRE Review
Use Lenient Criteria for Effectiveness	Uses Effectiveness Criteria derived from the field of prevention science
Include Clinic/Community-based CSE	Only School-Based Programs
Use Different Criteria for CSE & AE	Uses Same Criteria for CSE & AE
Down-play negative findings (called "unintended results," "effects favoring the control group," "mixed results," etc.)	Negative program effects are called "harmful impacts on program participants," *which is what they are*

A similar lack of evidence of effectiveness was found by the 2019 U.S. Teen Pregnancy Prevention Meta-Analysis[32]

Results of 44 TPP-funded replication studies were combined:

- 85% were CSE programs
- Found no statistically significant positive effects of any duration on teen…
  - Sexual activity
  - Condom use
  - Pregnancy
  - STDs

(Juras R, Tanner-Smith E, Kelsey M, Lipsey M, Layzer J. (2019). Adolescent Pregnancy Prevention: Meta-Analysis of Federally Funded Program Evaluations, American Journal of Public Health, *109*(4), e1-e8.)

Lack of evidence of effectiveness was also found in 2018 by an independent peer-reviewed meta-analysis of 21 U.S. school-based sex education programs[33]

- Approximately 75% were CSE programs (taught condom and/or contraceptive use)
- The combined results produced "no consistent evidence that [the] evaluated programs were effective in reducing pregnancy or in improving results in the secondary outcomes analyzed [condom/contraceptive use and sexual initiation]."

(Marseille E, et al. (2018). Effectiveness of school-based teen pregnancy prevention programs in the USA: a systematic review and meta-analysis, *Prevention Science*, 19(4):468–489.)

A 2012 CDC-supported meta-analysis of Comprehensive Risk Reduction programs (another name for CSE) in the U.S. found a lack of evidence of effectiveness for school-based CSE[34]

The combined results of U.S. school-based CSE studies from 1990-2008 showed no statistically significant positive effects on teen…

- Condom use
- Pregnancy
- STDs
- Use of protection (condoms or other contraceptives)

(Weed SE. (2012). Sex Education Programs for Schools Still in Question: A Commentary on Meta-Analysis, *Am J Prev Med*,42(3):313-315; also Chin, et al. (2012), in the same journal issue.)

IRE Recommendations

1. ***Given the threat posed by STDs, HIV, and pregnancy to the health and well-being of young people…***

All sex education programs that do not meet credible criteria of effectiveness—long term improvement on protective outcomes for the target population—should be removed from lists of evidence-based programs, especially those programs that have had harmful impact.

IRE Recommendations

2. ***Given the condom's partial protection from STDs/HIV and pregnancy and its lack of protection from emotional harm and dating violence combined with the high rate of condom error and the immaturity of the teenage brain…***

A cultural norm should be established that sexual activity is a very risky behavior for all young people (regardless of race, sexual orientation, or gender identity), a behavior that will likely reduce their health and well-being, and one that should be avoided until they reach adulthood.

IRE Recommendations

3. ***Given the considerable lack of evidence of effectiveness for school-based CSE after 30 years and 103 credible studies…***

Policy-makers should abandon plans for the delivery of Comprehensive Sex Education in schools and seek alternative strategies to increase sexual risk avoidance and reduce the harms of teenage sexual activity. Replication studies on the positive results of Abstinence Education in the U.S. should be done to inform the development of new prevention paradigms.

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