School-Based Sex Education in the United States

American College of Pediatricians – September 2018

ABSTRACT: School-based comprehensive sex education (CSE) curricula chiefly emphasize the secondary public health principle of risk reduction. CSE programs in America's schools have not demonstrated long-term effectiveness at increasing sexual abstinence among adolescents, nor have they been shown to increase long-term condom and contraceptive use among sexually active youth. School-based sexual risk avoidance (SRA) curricula, traditionally known as abstinence education, focus on the primary public health principle of risk avoidance and thereby uphold the highest attainable standard of health for all students. School-based SRA programs have been shown to significantly delay the onset of sexual debut among adolescents without diminishing condom use among those who are already sexually initiated. The American College of Pediatricians therefore recommends the adoption of sexual risk avoidance (SRA) programs by all school districts in lieu of curricula described as comprehensive sex education (CSE).

INTRODUCTION

Youth risk behavior data released at the start of 2018 by the Centers for Disease Control and Prevention (CDC) indicate that from 2005–2015 there was a significant decrease in the percentage of high school students who had ever had sexual intercourse. This was especially pronounced among ninth and tenth graders and black students. Although these findings cannot be attributed to any specific intervention, they unquestionably reflect a positive trend and demonstrate that, despite living in an increasingly sexualized culture, youth are capable of sexual abstinence.[1]

As pediatricians we care for thousands of youth in our practices over the course of their lives. We see the benefits of adolescent sexual abstinence, and the suffering caused by adolescent sexual activity, up close. In addition to making significantly healthier life choices than their sexually active peers,[2] sexually abstinent youth also avoid the substantive adverse physical, emotional and social consequences of premature sexual activity. These negative outcomes include but are not limited to:

- teen pregnancy, out-of-wedlock births and abortions[3]
- sexually transmitted diseases (STDs) and infertility[4]
- sexual violence[5]
- adolescent anxiety and depression[6,7]
- adolescent suicide [6,7]
- single parent households and poverty[8]
- deterioration of the nuclear family[9]

On August 28, 2018, the CDC released data that revealed steep and sustained increases in STDs for the fourth year in a row.[10] Reacting to this, David Harvey, executive director of the National Coalition of STD Directors stated, "We are in the midst of an absolute STD public health crisis in this country."[10] Nearly 2.3 million cases

of chlamydia, gonorrhea, and syphilis were diagnosed in the United States in 2017, exceeding the previous year's record high by over 200,000 cases. Comparing data from 2013 to that from 2017, the CDC found chlamydia remained the most common STD, and that 45 percent of the over 1.7 million cases were among 15- to 24-year-old females. Gonorrhea has risen 67 percent over that same time period, and the number of strains resistant to antibiotics is growing rapidly. Similarly, the diagnosis of primary and secondary syphilis, which are the most infectious stages of the disease, increased 76 percent. Gay, bisexual and other men who have sex with men (MSM) made up almost 70 percent of those cases.[10]

Of the 20 million new STDs reported annually, about half occur among young people 15 to 24 years of age.[10] This age group is more at risk for contracting a sexually transmitted infection (STI) than older adults due to the general practice of having multiple and higher risk sexual partners, and to the immaturity of the cervical tissue of girls and young women under 21 years of age.[11,12] Chlamydia, gonorrhea, and syphilis are mostly still curable with antibiotics but very many cases are undiagnosed and untreated. Lack of treatment can lead to infertility, ectopic pregnancy, and stillbirth. Often contracted serially or together, this promiscuous sexual behavior leaves them also at risk for contracting (and transmitting) Hepatitis C and HIV.[10]

Studies suggest that a range of factors may contribute to STD increases, including socioeconomic factors like poverty, stigma, discrimination, and drug use. Nevertheless, one might reasonably ask with regard to our youth, "After forty years of widespread 'comprehensive sex education' (CSE) in American schools, why are STDs at epidemic levels among teenagers, and continuing to rise?"

PUBLIC HEALTH STRATEGIES TO COUNTER HIGH RISK BEHAVIOR

Public health models that respond to health risk behaviors first and foremost emphasize optimal health promotion and disease prevention. The goal of this first principle of public health is to guide the targeted audience toward the best health outcomes through a risk avoidance (RA) or primary prevention approach. The RA strategy is a population-wide approach, communicating the best health messages broadly and in a manner that resonates with a variety of subgroups of the general population. It seeks to positively influence individual decision-making, as well as to inform the conversation surrounding the specific health or safety concern. The goals are to encourage individuals to avoid *all* risk by not engaging in the high-risk behavior, and, if individuals are already engaged in high-risk behavior, to encourage them to stop the behavior and return to risk-free behavior. Common examples of the risk avoidance approach include campaigns to prevent *underage drinking, illicit drug use, smoking, and violence*. This is the philosophy of sexual risk avoidance (SRA) education, traditionally known as abstinence education, which is supported by the following CDC statement:

> ***Abstinence from vaginal, anal, and oral intercourse is the only 100% effective way to prevent HIV, other STDs, and pregnancy. The correct and consistent use of male latex condoms can reduce the risk of STD transmission, including HIV infection. However, no protective method is 100% effective, and condom use cannot guarantee absolute protection against any STD or pregnancy.***[13]

A secondary principle of public health is known as risk reduction (RR). This second strategy is generally applied to a more narrow population. The goal of this strategy is to reduce the risk of harm for those actively engaged in the high risk behavior while still encouraging them to return to risk-free behavior. An example would be needle exchange programs targeted to intravenous drug addicts.

Comprehensive sex education (CSE) purports to incorporate both sexual risk avoidance (SRA) strategies and sexual risk reduction (SRR) strategies within the same curriculum in order to serve the needs of the full spectrum of young people. In other words, CSE is based on a hypothesized dual approach: to simultaneously

increase teen abstinence *and* increase contraception and condom use for those teens not willing to be abstinent, *within the same population of youth*.

However, while promoting sexual abstinence was originally a nominal goal for the CSE paradigm, the amount of attention it receives in specific CSE programs today varies widely; it is often given little emphasis, or may be defined very narrowly, as merely postponing vaginal intercourse but allowing other forms of genital contact. In fact, most CSE curricula appear to be based on the premises that sexual activity for teens is a normal and morally acceptable behavior as long as it is "consensual" and "protected;" that engaging in sexual activity is inevitable for teens, and that once sexually active, they are unable to alter that behavior. Consequently, the underlying philosophy of CSE is that risk avoidance is not attainable, and the best anyone can do to help our youth is to reduce risk by promoting contraceptive education and services.

Less explicit, but included in CSE ideology, is the idea that young people should be free from sexual inhibitions, outdated moral constraints, and that adolescents should make up their own minds about when they are ready for sexual relations; adolescents should be free to enjoy sexual pleasure. For example, in 1988, Debra Haffner, then executive director of the Sexuality Information and Education Council of the United States (SIECUS), wrote in their Report that teens should "explore the full range of safe sexual behavior" and suggested that "a partial list of safe sex practices for teens could include talking, flirting, dancing, hugging, necking, massaging, caressing, undressing each other, masturbation alone, masturbation in front of a partner, and mutual masturbation." [14] Not all CSE programs include these suggestions, but many do.

EFFECTIVENESS OF SCHOOL-BASED CSE

Many youth advocates assert that the CSE approach to prevention is "evidence-based" and has been proven effective, yet when CSE outcomes for programs in U.S. schools are evaluated by reasonable criteria, the pattern of evidence does not support these claims.

A scientific assessment of the effectiveness of CSE in America's schools over the last 25 years was recently published. The authors reviewed sixty rigorous studies of 40 school-based CSE programs; studies that were peer reviewed for selection based on research quality by either the Department of Health and Human Services (HHS), the United Nations Educational, Scientific and Cultural Organization (UNESCO), or the CDC. The claim for these CSE programs has been that "they reduce pregnancies, STDs, and related sexual behaviors." The field of prevention research considers an intervention effective when it generates sustained post-program effects on protective indicators for the main intended population. When the reviewers applied this standard to the programs, they found far more evidence of CSE failure than success: [15]

- **Teen Pregnancy:** Only one of the 40 school-based CSE programs evaluated by the 60 studies reported a reduction in teen pregnancy, but that effect did not extend beyond the end of the program, and a subsequent study in a different location found the same program actually increased pregnancy rates.
- **STI Prevention:** None of the school-based CSE studies demonstrated a reduction in teen STIs: in fact, only two measured it.
- **Teen Abstinence:** Although four of the 60 school-based CSE studies reported 12-month post-program increases in teen abstinence, 12 other studies of the same programs found no such positive effects and one negative effect.
- **Consistent Condom Use:** None of the school-based CSE programs showed effectiveness at increasing consistent condom use by teens (consistent use is necessary to provide meaningful protection from STIs). Although one program reported an increase 12 months after the program, a subsequent replication

study conducted by independent evaluators—not the program's developers—found that this program actually increased teen sexual risk behavior.

- **CSE's Intended Dual Benefit:** None of the school-based CSE programs showed success at achieving the purported dual benefit of the "comprehensive" strategy—increasing both teen abstinence and condom use within the same teen population. No program produced sustained effects on both outcomes one year after the program's completion. Thus, the central rationale for CSE and its purported advantage over sexual risk avoidance (SRA) education has not been realized in school settings, the most common venue for CSE in the U.S.
- **Negative Effects:** Five of the 40 school-based CSE programs evaluated by these 60 studies produced significant negative effects (i.e., increases in sexual initiation, recent sex, oral sex, pregnancy, or decreased contraceptive use) for the target population or a substantial subgroup of teens.

While teen pregnancy, birth, and abortion rates have declined since 1990 (unlike STD rates), they are still the highest in the industrialized world; the racial disparity in rates of sexual activity is decreasing with falling rates among black, Hispanic, and younger white teens, but not among older white teens.[16] The evidence above suggests that this decline has not been the result of CSE programs in U.S. Schools – including those on the federal Teen Pregnancy Prevention list of so called "evidence-based" programs.

POTENTIAL REASONS FOR SCHOOL-BASED CSE FAILURE

In short, Comprehensive Sex Education (CSE) is not comprehensive. Instead, CSE is almost entirely focused on skills to help teens reduce the physical consequences of sex through the use of contraception. Therefore, a more accurate description of CSE curricula is Sexual Risk Reduction (SRR) curricula. This school-based sexual risk reduction model, however, differs considerably from other risk reduction campaigns in the following ways: [17]

1. The school-based SRR (CSE) model targets the general teen population, rather than focusing on an individual intervention for those who are actually engaged in the risk behavior. This is a significant difference from the typical risk reduction model. The sexual risk reduction approach should focus on adolescents in school who are already sexually active, but instead is applied to the broader teen population. This sends the false message that "everyone is doing it", which has the negative effect of normalizing teen sex as an expected standard for all students.

2. The school-based SRR (CSE) model does not seek to move individuals who are engaged in sexual activity toward a renewed risk avoidance (abstinent) behavioral choice, as is true for other risk behavior programs.

3. The school-based SRR (CSE) model claims success even when teens are still participating in behaviors that place them at significant risk.

4. The explicit demonstrations and themes presented within school-based SRR (CSE) set behavioral standards that can easily provoke sexually inexperienced teens to transition into sexual activity.

EFFECTIVENESS OF SCHOOL-BASED SRA EDUCATION

The review cited earlier also examined 18 studies of 16 school-based sexual risk avoidance (SRA) programs, employing the same criteria of effectiveness.[15] These 18 studies are drawn from the same peer reviewed data base referred to above for the CSE studies. Having been on the scene for a shorter period of time, and receiving about one-tenth of the funding for program implementation and evaluation as CSE, there is a smaller SRA data base to draw from. However, within the limited data on SRA that is available, two trends from the research findings have emerged:

1. There appears to be somewhat better evidence in this database for promoting teen abstinence through

school-based SRA than CSE. As already stated, three school-based CSE programs (in four studies) showed sustained 12-month main effects on teen abstinence (delayed initiation), but multiple replication studies (12 total) showed null or negative effects that seem to outweigh the initial positive findings for these three programs. Conversely, among the 18 school-based SRA studies that were of sufficient quality for inclusion in this database, seven programs (in seven studies) showed main effects on teen abstinence at least one year after the program's completion.[14] Five of the seven studies were by independent evaluators. More replication studies should be done to verify the initial positive results of these seven studies.

2. It is important to note that there was strong evidence in this database that contradicts the claim of critics that SRA does harm through reducing the use of condoms by sexually active teens. Of the nine rigorous SRA studies that measured condom use as an outcome, eight found no significant effects and one showed a significant 12-month improvement.[14] This is compelling evidence that SRA does not do harm by causing sexually active teens to *reduce* teen condom use.

Not all SRA curricula are necessarily effective. As with all educational interventions, only those SRA education programs that are well-designed and well-implemented will be effective. There are important characteristics that identify successful SRA programs. These characteristics include: *medical accuracy, age appropriateness, message clarity, a focus on mediating cognitive outcomes, attention to the messenger, multi-modal instruction, adequate program dosage, high quality implementation, rigorous evaluation with a feedback loop, cultural sensitivity, parent involvement, and impact on social norms.*[15] ACPeds therefore encourages continued study of these and all SRA programs with attention to optimal setting and elements, length and repetition of program, ideal form of parental involvement, engagement of at-risk and minority groups, and durability of intervention through high school and college. A compendium of evidence-based and promising SRA programs is published annually by Ascend, formerly the National Abstinence Education Association. It is available at https://weascend.org/resources/.

SRA PROGRAM CONTENT IS HOLISTIC

SRA education is built on the premise that all non-marital teen sexual activity is high-risk behavior, due to the many possible consequences of that conduct, and the likelihood of multiple lifetime sexual partners resulting from the early onset of sexual activity. In contrast to CSE programs, SRA programs teach that abstinence is not another "option" like condoms and contraception; it is singly presented as the *optimally healthy* lifestyle for teens. SRA education teaches teens that it is normal to be curious about sex, but that the healthiest and most rewarding context for sexual intimacy is within marriage. Therefore, the focus of a SRA program is to teach the benefits of choosing to delay sexual activity until marriage and to empower teens to achieve this goal.[17]

SRA education accomplishes this in part by revealing to students that there are physical, emotional, mental, social, and ethical consequences to sexual behavior. School-based CSE programs, in contrast, focus primarily upon potential physical consequences and do not speak to the holistic nature of sex. A typical SRA program therefore covers the following topics: [17]

- Goal setting and future orientation
- Healthy decision making
- Building assets and avoiding negative peer pressure
- Risk clusters and media influence
- Recognizing healthy and unhealthy relationships
- How to prevent and respond to dating violence
- Resistance skills and setting boundaries
- Self-efficacy and self-regulation

- Ability to reverse high risk behavior
- Human development: puberty, reproductive anatomy
- Pregnancy and STD transmission and risks
- Condoms and contraception: methods, effectiveness and limitations

According to the Parents Speak Out Survey by Pulse Opinion Research, 80 percent of parents support these SRA themes,[17] and fully 85 percent believe that all youth, including homosexual youth, benefit from skills that help them choose to wait for sex.

SRA education is also distinctive in that it encourages parent-teen communication. SRA programs provide the framework to facilitate comfortable and informative conversations about sexuality and relationships between parents, or other caregivers, and children. In this way, parents are empowered to be their children's primary sex educators. This is based not only upon a respect for parental rights, but also upon social science research that finds communication of parental expectations is one of the most protective factors against early sexual debut. [18,19] CSE programs, in contrast, often teach teens how to obtain condoms, contraception and/or an abortion without the consent of parents or guardians.

BIOLOGICAL AND PRACTICAL CONSIDERATIONS

In addition to questions of program content and effectiveness, plans to protect young people from the harms of sexual activity must consider certain biological and practical realities that have a bearing on the success of prevention efforts.

The Teenage Brain

Over two decades of neuroscience research indicates that important regions of the human brain are not fully developed until a person reaches their *early to mid-twenties*. These regions include the frontal lobes, which are responsible for governing impulse control, anticipation of consequences, judgment, planning, goal-setting, and prioritizing, and the hippocampus and amygdala, which together mediate motivation, memory, attention, and emotional/affective behavior. [20, 21, 22,23] Thus, the adolescent brain is physiologically geared for risk-taking behavior and impulsiveness with immature processing of information, and failure to anticipate the future impact of behavior, making it "difficult for them to understand and use contraceptive methods effectively and consistently."[24] In other words, adolescents aren't neurologically well-equipped for "reasoned action" or "planned behavior," especially in highly emotional, impulse-driven situations.

> ***The most important conclusion to emerge from recent research is that important changes in brain anatomy and activity take place far longer into development than had been previously thought. . . .there is little room for disagreement about the fact that adolescence is a period of substantial brain maturation with respect to both structure and function. . . Heightened sensitivity to anticipated rewards motivates adolescents to engage in acts, even risky acts, when the potential for pleasure is high, such as with unprotected sex, fast driving, or experimentation with drugs.*** [23]

Condom Use Error & Failure

Related to this is another seldom-mentioned issue: Condom use error and failure can significantly compromise the risk reduction benefit of condom use, and error/failure rates are surprisingly high, even among experienced and motivated *adult* condom users. For example, among 1,973 adults at an urban STI clinic in Denver, who were *consistent condom users*, 57% of women and 48% of men reported at least one incident of condom use error or failure over a four-month period with condom breakage being the most frequent problem and condom error associated with higher STI levels for men. [25,26] Similarly, a study of a sample of 102 college women who put condoms on their male partner(s) found that, 30% to 50% (depending on the type of error) reported they had

committed a common condom use error at least once in the past three months, and 28% reported condom breakage, slippage, or both occurring during sex over the same time frame.[27]Given the immaturity of the teenage brain, rates of condom use error and failure are expected to be significantly higher among adolescent populations.

Fortunately, as noted at the beginning of this paper, adolescents are increasingly demonstrating that they can delay the onset of sexual activity.

PARENT PERSPECTIVES

A 2010 study by the U.S. Department of Health and Human Services under the Obama administration found that roughly 70 percent of American parents are opposed to premarital sex generally and for their own adolescents in particular.[28] The vast majority of parents also favored their adolescents receiving sexual abstinence messages in multiple community settings including schools, doctor offices and community organizations.[28]

The survey findings were intended to inform public policy priorities and sex education implementation strategies. Based on these results, a strong risk- avoidance abstinence message should be the federal priority for sex education.

It is also true that the majority of parents believe that students should be taught about condoms and contraception. According to the Americans Speak Out Survey by the Barna Group in 2015, 75 percent of parents wanted their teens to be given information about condoms and contraception. However, support plummeted to 38% for condom demonstrations and 27% for condom and/or contraceptive distribution.[17] In addition, the Parents Speak Out Survey cited earlier found that 90 percent of parents support teaching teens the medically accurate limitations of condoms for pregnancy and disease prevention.[17] These views are aligned with what most SRA programs offer.

CONCLUSION

Ultimately, when selecting an approach to sex education, the question that must be answered is, “What is truly in the best interest of children, families, communities, and society as a whole?” Our experience with young people, the compelling evidence for harm resulting from adolescent sexual activity, the consistent failure of CSE programs in U.S. schools, the developmental level of the adolescent brain, the promising evidence for SRA education, and the wishes of parents, have led us to conclude that school-based SRA education is superior to CSE. ACPeds therefore recommends the adoption of SRA education by all school systems, with classes beginning in middle school and continuing through high school. ACPeds also endorses continued research on SRA programs, since, as with all education initiatives, ongoing research is necessary to document and monitor effectiveness. America’s young people deserve the best that we can give them; school-based sexual risk avoidance education is the best for children.

Primary Authors: Stan Weed, PhD; Irene Erikson, PhD; Russell Gombosi, MD; Michelle Cretella, MD
September 2018

The American College of Pediatricians is a national association of licensed physicians and healthcare professionals who specialize in the care of infants, children, and adolescents. The mission of the College is to enable all children to reach their optimal physical and emotional health and well-being.

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