

[“Explaining Recent Declines in Adolescent Pregnancy in the United States: The Contribution of Abstinence and Improved Contraceptive Use” \(2007\), by John S. Santelli, Laura Duberstein Lindberg, Lawrence B. Finer, and Susheela Singh](#) ^[1]

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In “Explaining Recent Declines in Adolescent Pregnancy in the United States: The Contribution of Abstinence and Improved Contraceptive Use,” hereafter “Explaining Recent Declines,” researchers John S. Santelli, Laura Duberstein Lindberg, Lawrence B. Finer, and Susheela Singh discuss what led to the major decline in US adolescent [pregnancy](#) ^[5] rates from 1995 to 2002. Working with the Guttmacher Institute, a reproductive health research [organization](#) ^[6], they found that the decline in US adolescent [pregnancy](#) ^[5] rates between 1995 and 2002 was primarily due to improved contraceptive use. They published their article in 2007 after the US government had increased funding for abstinence-only education between 1998 and 2007. “Explaining Recent Declines” challenged US policies by asserting that there was minimal evidence to support abstinence-only sex education as the primary strategy to prevent adolescent [pregnancy](#) ^[5].

Around the time the researchers conducted their work, there was controversy in the US over whether abstinence-only education or comprehensive sexual education was more effective at reducing adolescent [pregnancy](#) ^[5] rates. In general, while abstinence-only education promotes sexual restraint and self-discipline until marriage as the only completely effective method of [birth control](#) ^[7], comprehensive sexual education instructs on a variety of topics including abstinence, [contraception](#) ^[8], reproductive choices, anatomy and puberty, relationships, and other similar topics. Supporters of abstinence-only education are often from religious or self-proclaimed conservative backgrounds, as many religions condemn premarital sexual relations. It has also been more typical for Republican Party leadership to favor abstinence-only education as compared to Democratic Party leadership. In comparison to other developed countries, [pregnancy](#) ^[5] rates among adolescents in the US are typically higher than others, so identifying what constitutes effective sexual education has important implications for adolescents, parents of adolescents, policymakers, and other stakeholders.

Santelli, Lindberg, Finer, and Singh conducted their research through the Guttmacher Institute, which is a research and policy [organization](#) ^[6] based in New York City, New York, whose mission is to advance sexual and reproductive health and rights globally. According to the Guttmacher Institute, Santelli, who initiated the study, has been a national leader in conducting health research that includes adolescents in the US. In his prior research, he examined the impacts of sexually transmitted illnesses and unintended [pregnancy](#) ^[5] among adolescents and adult women. Lindberg, a research scientist, was also involved in establishing the study and was the primary data analyst. Her previous work focused on adolescent sexual behavior, sexual education, and determinants and consequences of unintended [pregnancy](#) ^[5]. Finer, a researcher and policy analyst, contributed to the research by providing expertise on advanced statistical methods. Singh, a social scientist whose previous work focused on the sexual and reproductive behaviors of women and men, provided knowledge on research methods and policy implications.

Santelli, Lindberg, Finer, and Singh divide “Explaining Recent Declines” into four main sections. In the introduction, they explain that their objective was to investigate possible contributions to the US adolescent [pregnancy](#) ^[5] rate decline between 1995 and 2002. In their second section, the authors describe that their methods focused on analyzing data from an existing US survey that collected information related to [pregnancy](#) ^[5], family life, and contraceptive use. They created two indices, with one index analyzing the efficacy of [contraception](#) ^[8] among sexually active adolescents, and the other index measuring the overall risk of [pregnancy](#) ^[5]. In their third section, the researchers discuss how the decline in adolescent [pregnancy](#) ^[5] rates was attributable to increased contraceptive use, and not to the practice of abstinence. In their last section, they conclude that increased use of contraceptives among adolescents appears to be one of the primary factors attributable to the decline in [pregnancy](#) ^[5] rates. They also explore how their findings could influence policy recommendations within the US.

In their introduction, Santelli, Lindberg, Finer, and Singh discuss how the US government promotes abstinence-only education as the primary sexual education for adolescents. The authors state that the US government’s preference for abstinence-only education was possibly due to social conservatives claiming that the decline in adolescent [pregnancy](#) ^[5] rates was due to increased abstinence. They assert that those ideals facilitated a rapid increase of federally-funded policies on abstinence-only education since 1998, despite a lack of statistical support that those programs have any positive impacts. In their article, Santelli and colleagues also reference other studies that claimed there are concerns about the informational content and ethical

acceptability of abstinence-only education programs. In a previous 2006 study reviewing US abstinence-only policies, Santelli and his team found that abstinence as a sole option for adolescents is scientifically and ethically problematic because it often restricts and misrepresents other health information that could be valuable to adolescents. Therefore, in their 2007 article, “Explaining Recent Declines,” the authors claim that they hoped to determine whether they could attribute abstinence-only education to the declining US adolescent [pregnancy](#)^[5] rates between 1995 and 2002.

The researchers further describe in their introduction their rationale for examining the statistical impacts of both abstinence and contraceptive use when assessing the decline of adolescent [pregnancy](#)^[5] rates. Santelli, Lindberg, Finer, and Singh discuss how “Explaining Recent Declines” was motivated as a follow-up to another study conducted by Santelli in 2004. In that study, he found that the decline in adolescent [pregnancy](#)^[5] rates among fifteen to seventeen-year-olds between 1991 and 2001 was attributable to both improved [contraception](#)^[6] use and delayed sexual activity. During that time frame, US adolescent [pregnancy](#)^[5] rates had reached a historic low after declining by twenty-two percent. Therefore, in 2007, Santelli and colleagues sought to update their 2004 study by investigating the relative contributions of improved [contraception](#)^[6] use and delayed sexual activity to the decline in the US adolescent [pregnancy](#)^[5] rate, with regards to updated federal policies on abstinence-only education and a more representative cohort of data.

In their methods section, the authors describe that their three primary variables for adolescent [pregnancy](#)^[5] risk included sexual activity levels, contraceptive use, and contraceptive failure rates. For their first variable, they define recent sexual activity as engagement in heterosexual vaginal intercourse within three months before the survey. They also divide contraceptive use into categories, which included condoms, oral [birth control](#)^[7], injections, withdrawal, non-use, and contraceptive method combinations. Participants could report the use of up to four separate methods for [contraception](#)^[6] simultaneously used during their most recent [sexual intercourse](#)^[9]. Finally, they define contraceptive failure rates as the number of pregnancies that occurred among one hundred women using any specific contraceptive method.

Continuing in their methods section, Santelli, Lindberg, Finer, and Singh report that they narrowed their study to young women who were aged fifteen to nineteen and who took the National Survey of Family Growth, or NSFG, in 1995 and 2002. The NSFG is a US survey administered every seven years by the National Center for Health Statistics division of the Centers for Disease Control and Prevention to gather information and assess trends related to family life, [pregnancy](#)^[5], [infertility](#)^[10], use of [contraception](#)^[6], marriage and divorce, and other related variables. The NSFG is also nationally representative, as it is administered across the US. Using the NSFG, the researchers measured sexual activity levels, contraceptive use, and contraceptive failure rates among fifteen to nineteen-year-old women in the years 1995 and 2002.

The authors then expand upon their methods section by describing how they developed a [pregnancy](#)^[5] risk index for each form of [contraception](#)^[6] to analyze their collected data on sexual activity levels, contraceptive use, and contraceptive failure rates. They developed that risk index to assess the relative contributions of abstinence and contraceptive use to declining adolescent [pregnancy](#)^[5] rates. By assessing the proportion of sexually active women whose contraceptive method failed, Santelli, Lindberg, Finer, and Singh quantified the relative success levels of each contraceptive method. Contraceptive methods with a higher success rate had a lower [pregnancy](#)^[5] risk index than those with a lower success rate. Santelli and colleagues also included abstinence in their analysis for contraceptive methods. For sexually active women who reported that they utilized abstinence as their contraceptive method, the authors analyzed how often those women reported unwanted pregnancies. The researchers then compared their calculated [pregnancy](#)^[5] risk for each contraceptive method with actual [pregnancy](#)^[5] rates.

In their results section, the authors describe that the rates of sexual activity did not decline significantly among fifteen to nineteen-year-old women between 1995 and 2002. They claimed there were smaller changes in the percentage of adolescent women reporting recent [sexual intercourse](#)^[9] than in their history of ever having had [sexual intercourse](#)^[9]. Specifically, between 1995 and 2002, the number of fifteen to nineteen-year-old women who had ever engaged in [sexual intercourse](#)^[9] only declined by ten percent. Further, the researchers claim that there was no decline for the eighteen to nineteen-year-old group in the group’s history of ever having had [sexual intercourse](#)^[9]. However, that only contributed partially to the overall analysis on changes in patterns in sexual activity and its contributions toward adolescent [pregnancy](#)^[5] rates. As there was limited change in sexual activity behavior for the majority of fifteen to nineteen-year-old women, Santelli, Lindberg, Finer, and Singh assert that the decline in adolescent [pregnancy](#)^[5] rates could not be largely attributable to an increased practice of abstinence among adolescents. That means that despite the decreased rates of adolescent [pregnancy](#)^[5], the lack of significant change on sexual activity behaviors would mean that those decreased rates were not due to abstinence.

Also, in their results section, Santelli and colleagues discuss their finding that there was a significant improvement in contraceptive use between 1995 and 2002, with a decrease in non-use of [contraception](#)^[6] and an increase in the use of one or more alternative contraceptive methods. They found that substantially more sexually active adolescent women used condoms and [birth control](#)^[7] pills as a method of [contraception](#)^[6], among other methods. The researchers also found that more women used multiple contraceptive methods, such as using both the condom and [birth control](#)^[7] pill method. Further, the percentage of fifteen to nineteen-year-old women who did not report a method of [contraception](#)^[6] decreased from 33.9 percent to 18.3 percent from 1995 to 2002. According to the authors, the improvements in contraceptive use among fifteen to seventeen-year-olds were larger than the changes among eighteen to nineteen-year-olds, based on the percent increase in condom and pill use, increase in use of multiple contraceptive methods, and the decrease in non-use.

Finally, Santelli, Lindberg, Finer, and Singh complete their results section by asserting that the declining US adolescent [pregnancy](#)^[5] rates between 1995 and 2002 were primarily due to improved contraceptive use rather than abstinence-only practices. Between those years, the researchers found there was a significant decline in the [pregnancy](#)^[5] risk for fifteen to nineteen-year-olds overall, and more specifically, fifteen to seventeen-year-olds. They also state that the decline in [pregnancy](#)^[5] risk among eighteen and nineteen-year-olds was entirely attributable to increased [contraception](#)^[8] use. The researchers attribute fourteen percent of the decline in US adolescent [pregnancy](#)^[5] rates between 1995 and 2002 to a decrease in the percentage of sexually active adolescent women and eighty-six percent of that decline to changes in contraceptive method use. Ultimately, the authors conclude that using [contraception](#)^[8] as opposed to abstinence for [pregnancy](#)^[5] prevention leads to a lower [pregnancy](#)^[5] risk and results in fewer pregnancies.

In their conclusion, the researchers claim that their findings, as well as other scientific data, challenge the US federal government's efforts to promote abstinence-only policies. They assert that their findings give insight into the social forces influencing the changes in behaviors resulting in adolescent [pregnancy](#)^[5]. For example, they claim that increasing rates of multiple methods of [contraception](#)^[8] suggest a desire among adolescent women to avoid [pregnancy](#)^[5] and sexually transmitted illnesses. The authors also claim that delays in initiation of sexual activity are not likely attributable to abstinence-only education, as the trend towards later initiation of sexual activity started prior to the US government's push for abstinence-only policies. Santelli, Lindberg, Finer, and Singh conclude their summary of results by stating that although abstinence promotion may be a worthwhile goal, there is now scientific evidence that shows that abstinence-only sexual education is insufficient to help adolescents prevent unintended [pregnancy](#)^[5]. They assert that policies that promote abstinence-only education without including accurate information on [contraception](#)^[8] are misguided.

The authors also describe some of the limitations to their study in their conclusion. First, they state that the self-reported data of the NSFG is subject to over- and under-reporting. They claim that the growing social stigma of adolescent [pregnancy](#)^[5] may make adolescents more likely to underreport sexual activity and overreport contraceptive use. Further, they said that the sample sizes of the NSFG subgroups were problematically small. Specifically, they state that the Black and Hispanic subgroups were too small to attribute accurate generalizations regarding sexual activity and contraceptive use to either group. Finally, Santelli, Lindberg, Finer, and Singh said that the data assumes there were no changes in the proper use of contraceptives and in adolescent fertility rates.

Santelli and colleagues published their work in the *American Journal of Public Health* in 2007, and as of 2021, their paper has been cited over 500 times. Other researchers have cited the experiment as scientific justification for the US to shift federal funding from abstinence-only education to comprehensive sexual education. However, "Explaining Recent Declines" has also been cited by proponents of abstinence-only education, who have used its findings as justification that there is no evidence that sexually active adolescents have better developmental outcomes than adolescents who practice abstinence. Nevertheless, the American Academy of Pediatrics has referenced the experiment as evidence that it is important for pediatricians to discuss proper contraceptive use in order to promote healthy sexual decision-making among their adolescent patients. Overall, Santelli, Lindberg, Finer, and Singh identified comprehensive sexual education as more effective than abstinence-only education. Therefore, the findings of "Explaining Recent Declines" can aid stakeholders, especially those involved in US policymaking and those who are health professionals, in identifying what constitutes as effective sexual education and which strategies they should pursue.

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