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-- John Waters, Filmmaker

Do Abstinence-Only Programs Delay the Initiation of Sex Among Young People and Reduce Teen Pregnancy?

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By Douglas Kirby, Ph.D.

In May of 2001, the National Campaign to Prevent Teen Pregnancy published a thorough review of programs designed to delay the initiation of sex, increase condom or contraceptive use, and reduce teen pregnancy. That review, *Emerging Answers: Research Findings on Programs to Reduce Teen Pregnancy*, said at the time that "the evidence is not conclusive about the impact of abstinence-only programs," and that "there do not currently exist any abstinence-only programs with reasonably strong evidence that they actually delay the initiation of sex or reduce its frequency." *Emerging Answers* also stated, however, that based on the relatively meager evidence available, "one should not conclude that all abstinence-only programs either do or do not delay sex." It suggested that some abstinence-only programs may be effective while others may not.

In April of 2002, Robert Rector, a Senior Research Fellow at the Heritage Foundation, a Washington, DC-based think tank, published a paper titled, "The Effectiveness of Abstinence Education Programs in Reducing Sexual Activity Among Youth." Its conclusions were quite different from those of *Emerging Answers*, published a year before. In particular, the Heritage paper said that "abstinence education programs for youth have been proven to be effective in reducing early sexual activity," and the paper identified ten studies it said demonstrated that abstinence-only programs can reduce sexual activity among youth.

The Heritage Foundation review raises the very important question: Do there now exist studies with good evidence demonstrating that one or more abstinence-only programs actually delay

sex and/or reduce teen pregnancy and have the findings about abstinence-only programs presented in Emerging Answers become outdated? This review will address that question by assessing the ten studies highlighted in the Heritage monograph.

Standards of Evidence

Before doing so, however, it is important to discuss standards of evidence. There are a great many studies of programs, including abstinence-only programs and sex and HIV education programs, that are designed to delay the initiation of sex, help sexually active youth refrain from further sexual activity until they are older, and sometimes increase use of condoms and contraceptives. Some of these studies are very well designed and can provide strong evidence that a particular program either did or did not change sexual behavior. But, unfortunately, many of the studies are not based on generally accepted standards of good research, and therefore little can be learned from these studies about the impact of these programs on actual behavior. Thus, it is important to first establish a set of standards — that is, a set of criteria describing the characteristics a study must have in order for its results to be regarded as scientifically valid evidence. After such standards have been established, then studies meeting those standards should be identified and their evidence examined.

This is exactly what was done by the Effective Programs and Research Task Force (EPR) of the National Campaign to Prevent Teen Pregnancy during the review of studies for Emerging Answers. The Task Force first reached agreement on the criteria that would determine whether or not a study provided sufficiently strong evidence to be included in the review at all (pp. 115 in Emerging Answers). For example, the task force agreed that in order for studies to be included in the review:

- The study must have used an appropriate and valid experimental or quasi-experimental design. (For example, if the intervention targeted either individual youth or classrooms of youth, then at a minimum the study must have used a quasi-experimental design with both intervention and comparison groups and baseline and follow-up data. If the intervention targeted entire schools or entire communities, then at a minimum the study must have used a quasi-experimental design with school-wide or community-wide time-series data, or alternatively a quasi-experimental design with numerous intervention schools or communities and well-matched comparison schools or communities with statistical adjustments for baseline differences, or another appropriate and equally valid quasi-experimental design.)
- Studies employing experimental or quasi-experimental designs are very different from those based on national surveys of youth. For example, studies based on national surveys generally depend upon the respondents' recall of whether they ever participated in a particular type of program. They also have very poor measures of the quality of any programs in which the participants were involved and may have considerable difficulty controlling statistically for other factors that might produce spurious statistical relationships or obscure actual relationships.
- Post-intervention data must have been collected for a minimum number of months after the intervention. This minimum follow-up period varies with the design and the behavioral outcomes of interest. When the study measured impact on the initiation of sex, then it must have followed youth for at least six months after the intervention in order to allow sufficient time for fewer youth in the intervention group than in the comparison group to initiate sex. When the study measured impact on the frequency of sex or use of condoms or contraception, then the study must have measured impact for at least 2 months after the intervention or 4 months after baseline, whichever was shorter.
- To qualify for inclusion in Emerging Answers, studies must also have had a sample size of at least 100 and must have measured actual behavior (as opposed to attitudes or intentions).
- Finally, the study must have employed proper statistical analyses.

After agreeing on the criteria, the EPR task force searched for and then assessed all studies meeting these standards, regardless of whether or not they were published. Because those criteria were thoughtfully developed and because the diverse members of the task force agreed on them, they are also used here to examine the ten studies summarized in the Heritage

Foundation paper.

The EPR Task Force also developed a second much more rigorous set of standards. If a study also met these standards, then it was identified as having especially strong evidence of impact. That is, the Task Force and Emerging Answers used a two-tiered approach to standards of evidence. Studies were included in the review and their results weighed if they met basic standards of good research design. If, in addition, the study was particularly well-designed, its evidence of impact was considered to be especially strong. This same overall approach is used to examine the 10 studies summarized in the Heritage Foundation paper. Readers should note that the ten studies in question are discussed below in the same order as they appear in the Heritage paper.

The Ten Studies Identified in the Heritage Foundation Paper as Effective Abstinence-Only Programs

1. *Virginity Pledge Programs.* The first study, authored by Michael Resnick and others, examined the impact of taking a pledge to be abstinent. That study provided some evidence that taking an abstinence pledge was associated with later initiation of sex. Although the study was based on a large national sample (the National Longitudinal Study of Adolescent Health), it did not meet the criteria for Emerging Answers because it did not include a quasi-experimental design. This is particularly noteworthy, because of at least two factors. First, the analyses relied upon young people's recall and report of whether or not they had taken a pledge and some youth who took the pledge, particularly those for whom it was less meaningful, may have been more likely to forget having taken the pledge. (A study of participation in a different abstinence-only program revealed that many youth reported they had not participated in the program when they actually had and vice versa.) Second, even before they entered the program, youth who voluntarily took the pledge were likely to be different from those who chose not to take the pledge, creating a "self-selection" bias. For example, pledge-takers may have been much more likely to have pro-abstinence values and to intend to delay sex than those who did not take the pledge. Without an equivalent comparison group, it is not possible to determine whether the pledge, or adolescents' preexisting values, or something else made the difference in sexual initiation.

2. *Not Me, Not Now.* The Not Me, Not Now program is a mass communications program to promote abstinence through paid advertising on TV and radio, billboards, posters distributed in schools, educational materials for parents, an interactive Web site, and educational sessions in school and community settings. While some aspects of the program reached many teens, the curriculum implemented in the schools (Postponing Sexual Involvement) only reached about 3% of middle school-aged youth in the county where this intervention was implemented and evaluated.

Because it is more difficult to evaluate the impact of community-wide campaigns, as compared to curriculum-based programs, Emerging Answers had slightly less stringent standards for including these types of programs; studies of this type were included without comparison groups if they had multiple-time-series designs. The study of Not Me, Not Now did include a time-series design and would have been included in Emerging Answers if it had been available sooner.

After the Not Me, Not Now campaign was initiated, the county-wide rates of sexual activity among youth 15 and younger did decline (but those among youth 17 and younger did not decline significantly), and the pregnancy rates among 15-17 year old teens declined faster in the county than in similar upstate New York communities. Thus, the study produced some evidence that the program delayed the initiation of sex and reduced teen pregnancy rates. However, it cannot be known with any certainty that it was this particular program, rather than other factors that caused the county-wide rates of sexual activity and pregnancy to decline. In sum, these results are encouraging; they met the standards to be included in Emerging Answers, but they did not meet the more demanding second set of Emerging Answers standards for "strong evidence."

3. *Operation Keepsake.* This study did not meet the criteria for inclusion in Emerging Answers, because it did not measure the impact on initiation of sex for at least six months; it measured impact for only a very short period of time (14 weeks after the intervention). The effects of the program on the initiation of sex or on returning to abstinence for two months, while positive, were not statistically significant. Although they were very close to significance, the study failed

to control for statistically significant differences between the treatment and control groups in age, gender, and ethnicity. It is unclear what the significance levels would have been if treatment-control group differences had been statistically controlled. Thus, the short-term impact of this program on sexual behavior is unknown.

4. Abstinence by Choice. This study did not meet the minimal criteria for Emerging Answers because it had a very weak research design. In particular, it did not have pre-intervention and post-intervention data from a comparison group of the same age.

5. Virginity Pledge Movement. Although the study by Bearman and Bruckner thoughtfully and scientifically analyzed the impact of taking a virginity pledge on subsequent sexual behavior and pregnancy, and although it does provide some evidence that taking a pledge will, under certain conditions, delay the initiation of sex, it did not meet the Emerging Answers criteria, because it did not include an experimental or quasi-experimental design. Like the first study above by Resnick and others, this study analyzed data from the National Longitudinal Study of Adolescent Health ? a national survey that did not have a quasi-experimental design with independently known intervention and comparison groups nor did it collect pre-intervention and post-intervention data. Rather it had to rely on the memory of youth participating in the survey and it had the many limitations of trying to statistically control for the many factors that cause youth to take the pledge.

While the pledge appeared to delay onset of intercourse, it did so only under selected circumstances. For example, it did not have a significant impact on girls younger than 14 or older than 17; similarly it did not have a significant impact if no peers also pledged or if more than 30% of peers pledged. And, if the youth who pledged did initiate sex, they were less likely to use contraception. Thus, taking the pledge neither significantly decreased nor increased the chances of pregnancy.

6. Teen Aid, Sex Respect, and Values and Choices. This study examined the impact of three different abstinence-only programs, Teen Aid, Sex Respect, and Values and Choices. It did meet the criteria for being included in Emerging Answers and was included. As noted in Emerging Answers, the results indicated that among the group of high school students with the most permissive sexual values, the programs did delay the initiation of sex. However, the results also showed that 1) among all high school students, these curricula did not significantly delay the initiation of sex, 2) among all junior high school students, they did not significantly delay the initiation of sex, 3) among the two groups of high school students with less permissive or least permissive sexual values, the programs did not significantly delay the initiation of sex, and 4) among none of the three groups of junior high school students did they significantly delay the initiation of sex. Thus, overall these programs did not significantly delay the initiation of sex, although in one out of six groups of youth (the most permissive high school students), they appeared to significantly delay the sexual initiation.

7. Family Accountability Communicating Teen Sexuality (FACTS). The evaluation of FACTS did not meet the standards of Emerging Answers, because of an inadequate evaluation design. For example, the duration of time between the pre-intervention surveys and the post-intervention surveys was not the same for treatment and comparison groups, and baseline similarity of the intervention and comparison groups was not established. This is particularly important because the families who volunteered to participate in the FACTS programs were probably different from families who did not volunteer. In addition, no tests of significance were provided.

8. Postponing Sexual Involvement (PSI). The study that measured the impact of PSI in Atlanta, Georgia actually measured the impact of an "abstinence-plus" intervention that had two components: PSI, which was abstinence only, and a second component which included discussions of contraception. This study did meet the standards of Emerging Answers and was included. It provided some evidence that this particular abstinence-plus program delayed the initiation of sex, but the evidence was not strong. It should be noted parenthetically that when PSI was implemented in California as an abstinence-only program (without the unit that included contraception), a rigorous evaluation found that it did not delay the initiation of sex.

9. Project Taking Charge. The study of Project Taking Charge was not included in Emerging Answers because of its small sample size. It's also noteworthy that the measured impact upon

the initiation of sex was not statistically significant. Although the results were very close to significance, the test of significance did not adjust for the fact that groups of students (as opposed to individual students) were assigned to treatment and control groups. Failure to make this adjustment biases the statistical results, and thus this study cannot determine the program's impact on initiation of sex.

10. Teen Aid Family Life Education Project. The results and the summary presented in this study are identical (except for a few words) to those presented in study number six above. That is, the same data were analyzed. This is not a different study, but the same study already summarized above.

Conclusions

In sum, of the ten studies identified by the Heritage Foundation paper as providing proof that their respective programs reduced early sexual activity, nine of them failed to provide credible evidence, consistent with the standards of Emerging Answers, that they delayed the initiation of sex or reduced the frequency of sex.

One of the studies suggests that the program, Not Me, Not Now, may have delayed the initiation of sex among youth 15 and younger, but not among those 17 and younger. Furthermore, it may have reduced county-wide pregnancy rates for youth aged 15-17. These are encouraging findings, but it cannot be determined with any certainty that the declines over time in these county-wide rates were caused by the abstinence-only mass communications campaign, as opposed to other programs, influences, or changes in the county. Nevertheless, people who want to implement large mass communication abstinence campaigns should seriously consider putting this program in place, because among abstinence-only programs, it has the strongest evidence to date that it may delay the initiation of sex among younger teens and even reduce teen pregnancy.

It is also the case that taking an abstinence pledge might delay the initiation of sex among some groups of youth and under certain conditions; it might also decrease their use of contraception when they do have sex. In addition, the Teen Aid program might delay the initiation of sex among high school students with the most permissive values. However, the evidence for these findings is not strong.

While the results of all of these selected studies of abstinence-only programs are somewhat encouraging, it should be fully realized that these studies are not representative of all studies of abstinence-only programs. That is, these studies were carefully selected from a much larger number of studies precisely because they have encouraging results. Other studies have less encouraging results and some even have negative results.

Thus, the major conclusions that can be reached at present are similar to those in Emerging Answers: There do not currently exist any abstinence-only programs with strong evidence that they either delay sex or reduce teen pregnancy. However, this does not mean that abstinence-only programs are not effective, nor does it mean that they are effective. It simply means that given the great diversity of abstinence-only programs combined with very few rigorous studies of their impact, there is simply too little evidence to know whether abstinence-only programs delay the initiation of sex. That is, "the jury is still out." Increasingly it seems likely to this author that sooner or later studies will produce strong evidence that some abstinence-only programs are effective at delaying sex and that others are not. However, until needed research is completed, we won't know which programs delay the initiation of sex nor will we know whether they affect contraceptive use and teen pregnancy.

These conclusions are in contrast to studies of "abstinence-plus" programs that strongly encourage youth to be abstinent because abstinence is the first and best choice for teens, but also encourage youth to use condoms and contraceptives if they do have sex. Many studies with very strong research designs have demonstrated that specific programs, as well as groups of programs with common characteristics, can delay sexual intercourse, reduce its frequency, increase condom use and/or increase contraceptive use. And, of course, these behaviors are linked to reducing adolescent pregnancy as well as sexually transmitted diseases.

There are many good reasons to encourage teens to delay sex, and encouraging abstinence among young people is supported by overwhelming majorities of both adults and teens nationwide (With One Voice, The National Campaign to Prevent Teen Pregnancy, 2001). Therefore, it remains very important to continue to evaluate rigorously the effectiveness of programs that focus on this particular goal and to determine which programs are effective and which are not. People concerned about this topic should look forward to additional studies of abstinence-only programs, including the rigorous evaluation currently underway of selected Title V abstinence education programs by Mathematica Policy Research.

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