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Emerging Answers: Research Findings on Programs to Reduce Teen Pregnancy (*Summary*)

Douglas Kirby

Abstract

In 1997, I wrote No Easy Answers: Research Findings on Programs to Reduce Teen Pregnancy *for the National Campaign to Prevent Teen Pregnancy. At that time, with only a few exceptions, most studies assessing the impact of programs to reduce teen sexual risk-taking failed either to measure or to find sustained long-term impact on behavior. Now, 4 years later, the research findings are definitely more positive, and there are at least five important reasons to be more optimistic that we can craft programs that help to reduce teen pregnancy. First, teen pregnancy, abortion, and birth rates began to decrease about 1991 and have continued to decline every year since then. Second, larger, more rigorous studies of some sex and HIV education programs have found sustained positive effects on behavior for as long as 3 years. Third, there is now good evidence that one program that combines both sexuality education and youth development (i.e., the Children's Aid Society—Carrera Program) can reduce pregnancies for as long as 3 years. Fourth, both service learning programs (i.e., voluntary community service with group discussions and reflection) and sex and HIV education programs (i.e., Reducing the Risk) have been found to reduce sexual risk-taking or pregnancy in several settings by independent research teams. Fifth, there is emerging evidence that some shorter, more modest clinic interventions involving educational materials coupled with one-on-one counseling may increase contraceptive use. Given the stronger and more consistent research findings demonstrating program effectiveness, this report has been titled* Emerging Answers.

When the National Campaign to Prevent Teen Pregnancy released its first major report, *No Easy Answers: Research Findings on Programs to Reduce Teen Pregnancy* (Kirby, 1997), it was not clear that the recent modest reductions in rates of teen pregnancy and childbearing noted at the time were going to continue. Four years later, there is good news to report: teen pregnancy and childbearing rates have continued their significant decline for several years among all racial and ethnic groups and in all parts of the United States. The credit for this welcome trend goes, of course, to teens themselves, who have obviously changed their behavior for the better. Evaluation research completed since *No Easy Answers* was published offers additional good news: more programs to prevent teen pregnancy are making a real difference in encouraging teens to remain abstinent or use contraception when they have sex. As a result of these encouraging trends in the rates

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The full 200-page report, Emerging Answers: Research Findings on Programs to Reduce Teen Pregnancy, is available from the National Campaign to Prevent Teen Pregnancy, 1776 Massachusetts Ave. NW, Suite 200, Washington, DC 20036, (202) 478-8500, campaign@teenpregnancy.org, www.teenpregnancy.org.

and in the research, this updated research review is titled *Emerging Answers.*

However, what was true in 1997 is still true today: teen pregnancy and childbearing remain very serious problems in the United States. Even with recent declines, the United States still has the highest teen pregnancy and birth rates among comparable industrialized nations, twice as high as Great Britain and ten times as high as the Netherlands, for instance. In other words, this is no time to be complacent; there is still a long way to go.

Not surprisingly, people from all over the country still come to the National Campaign with one principal question: "What can I do in my community to prevent teen pregnancy—what really works?" This new research review helps answer that question more definitively. However, it is important from the outset to note some of its limitations. The full report, which is summarized here, discusses only those programs that have been subjected to evaluation research that meets certain methodological criteria (see Criteria for Inclusion). It does not discuss what parents can do; it does not evaluate the role of broad cultural values and norms; and it does not review the relative efficacy of various methods of contraception. And the paper examines only primary prevention programs; it does not review interventions to prevent second pregnancies and births among teen mothers, although some of the conclusions would apply to these pregnancies and births as well. In addition, it is crucial for leaders to understand that although effective programs can help reduce teen pregnancy—a few quite substantially—it is naive to think that they can completely solve the problem by themselves. Indeed, no single approach to preventing teen pregnancy can provide a 100% solution.

Nonetheless, prevention programs can be an important part of the answer, and it is encouraging that research is revealing more about what makes the successful ones work. The research reviewed here offers some important "emerging answers" about what effective programs look like. It summarizes what has and has not worked in many communities. Of course, local decisions about programming are often affected by more than research, including such important considerations as community values, available resources, complementary services already available, the preferences of teens and parents, and, of course, local politics. Fortunately, a number of manuals to help communities put all these pieces together are available, including the National Campaign's *Get Organized: A Guide to Preventing Teen Pregnancy.*

The following summary outlines some facts that explain why communities must remain vigilant about teen pregnancy, childbearing, and sexually transmitted diseases (STDs), outlines the criteria for including studies in this review, discusses some of the antecedents of teen sexual risk-taking, and, finally, summarizes the findings of the research review and their implications for communities.

THE PROBLEM OF TEEN PREGNANCY

The recent and steady decline in teen pregnancy and birth rates in the United States should provide encouragement that continued progress is possible. However, there remain compelling reasons to increase prevention efforts.

- Despite the declining rates, more than 4 in 10 teen girls still get pregnant at least once before age 20, which translates into nearly 900,000 teen pregnancies per year.
- Despite a leveling off of sexual activity among teens, about two-thirds of all students have sex before graduating from high school—potentially exposing themselves to pregnancy and STDs.
- When teens give birth, their future prospects become more bleak. They become less likely to complete school and more likely to be single parents, for instance. Their children's prospects are even worse—they have less supportive and stimulating home environments, poorer health, lower cognitive development, worse educational outcomes, more behavior problems, and are more likely to become teen parents themselves.
- Despite indications of better use of contraception by sexually active teens (particularly of condoms at first sex), many do not use contraceptives correctly and consistently every time they have sex.
- As a result of sexual risk-taking, about one in four sexually experienced teens contract an STD each year—some of which are incurable, including HIV, which is, of course, life-threatening.
- Despite recent encouraging trends in teen pregnancy, it is important to remember that each year a new set of teens arrives on the scene, meaning that efforts to prevent teen pregnancy must be constantly renewed. In addition, between 1995 and 2010, the population of teen girls aged 15–19 is expected to increase by 2.2 million, which means that even declining rates may not necessarily mean fewer numbers of teen pregnancies and births.

THE CRITERIA FOR INCLUSION IN THIS REVIEW

Evaluation studies included in *Emerging Answers* had to meet certain scientific criteria. Whereas *No Easy Answers* used publication in a peer-reviewed journal as the primary qualification for including a study, this review relied on an expanded set of methodological criteria. This change was made for two reasons: (1) some studies employed rigorous research methods but, for a variety of reasons, were never published in peer-reviewed journals; and (2) a few studies published in peer-reviewed journals employed very weak methods and provided misleading results. To be included in *Emerging Answers*, a program evaluation had to meet multiple criteria, the most important of which were to have:

- been completed in 1980 or later;
- been conducted in the United States or Canada;
- been targeted at adolescents of middle school or high school age (roughly 12–18);
- employed an experimental or quasi-experimental design;
- had a sample size of at least 100 in the combined treatment and control group; and

• measured impact on sexual or contraceptive behavior, pregnancy, or childbearing.

ANTECEDENTS TO SEXUAL RISK-TAKING, PREGNANCY, AND CHILDBEARING

The reasons behind teen pregnancy are complex, varied, and overlapping. In fact, from a review of at least 250 studies, *Emerging Answers* culls more than 100 precursors or "antecedents" to early teen sexual intercourse, poor contraceptive use, pregnancy, and childbearing. These risk and protective factors fall under such categories as community disadvantage; family structure and economic disadvantage; family, peer, and partner attitudes and behavior; and characteristics of teens themselves, including biology, attachment to school, other behaviors that put young people at risk, emotional distress, and sexual beliefs, attitudes, and skills. Although all teens are at some risk, some teens are at much higher risk than others. These antecedents can be used to identify those youths at higher risk of sexual risk-taking and to guide the development of effective programs. No single program could—or should—try to address all of these antecedents; yet, at the same time, effective programs are more likely to focus intentionally on several of them in a clear, purposeful way.

Because the reasons behind teen pregnancy vary, so do the types of programs adults design to combat the problem. When most people think of preventing teen pregnancy, they probably conjure images of sex or abstinence education classes or clinics that offer contraceptive services. Although the most important antecedents of teen pregnancy and childbearing relate directly to sexual attitudes, beliefs, and skills, many influential family, community, cultural, and individual factors closely associated with teen pregnancy actually have little to do directly with sex (such as growing up in a poor community, having little attachment to one's parents, failing at school, and being depressed). In fact, one program with strong evidence for success in reducing teen pregnancy concentrates on the nonsexual antecedents of teen pregnancy. Simply put, the antecedents to teen pregnancy come in two categories: those that are sexual in nature (such as attitudes toward sex and contraception) and those that are not.

FINDINGS ON PROGRAMS

With these two categories of antecedents in mind, one can divide programs to prevent teen pregnancy into three types: those that focus on sexual antecedents, those that focus on nonsexual antecedents, and those that do both. *Emerging Answers* organizes its findings on programs into these three broad categories—and then into several subcategories—and offers conclusions about the research in each. Of course, given the great diversity of programs that exist, any typology will be inadequate to the task of capturing all the various ways that programs can be defined.

Programs that Focus on Sexual Antecedents of Teen Pregnancy

Programs that focus on the sexual antecedents of teen pregnancy are divided in this review into four groups: curricula-based programs for young people (including abstinence education and sex education) that are typically offered in schools; sex and HIV education programs for parents and families; programs to improve access to condoms and other contraceptives; and multicomponent, community-wide initiatives that have a strong emphasis on sex education or contraceptive services.

Curricula-Based Programs

According to recent national surveys, nearly every teenager in this country receives some form of sex or abstinence education, but the curricula vary widely in both focus and intensity. This review places curricula into two groups: abstinence-only education and sex or HIV education (sometimes also called abstinence-plus or comprehensive sex education). There has been a great growth in the former category since the 1996 welfare reform law made $85 million in federal and state funding available each year for abstinence-until-marriage interventions. However, in practice, curricula-based programs do not really divide neatly into these two groups; they actually exist along a continuum. For instance, whereas all abstinence-only programs focus on abstinence as the only truly healthy and correct choice for young people, some also discuss condoms and other contraception, focusing primarily on their failure rates; others mention the protective uses of condoms in a medically accurate manner while still stressing abstinence. Similarly, many sexuality education programs describe abstinence as the safest, and often the best, choice for teens but also encourage the use of condoms and other contraception for sexually active teens. A few—particularly those for high-risk, sexually active youth—focus primarily on consistent use of contraceptives, especially condoms.

Abstinence-Only Programs. Very little rigorous evaluation of abstinence-only programs has been completed; in fact, only three studies met the criteria for this review. The primary conclusion that can be drawn from these three studies is that the evidence is not conclusive about abstinence-only programs. None of the three evaluated programs showed an overall positive effect on sexual behavior, nor did they affect contraceptive use among sexually active participants. However, given the paucity of the research and the great diversity of abstinence-only programs that is not reflected in these three studies, one should be very careful about drawing conclusions about abstinence-only programs in general. Fortunately, results from a well-designed, federally sponsored evaluation of Title V-funded abstinence programs should be available within the next 2 years.

Sex and HIV Education Programs. A large body of evaluation research clearly shows that sex and HIV education programs included in this review do not increase sexual activity—they do not hasten the onset of sex, increase the frequency of sex, nor increase the number of sexual partners. To the contrary, some sex and HIV education programs delay the onset of sex, reduce the frequency of sex, or reduce the

number of sexual partners. In fact, since the publication of *No Easy Answers*, two independent studies have found that one particular curriculum, *Reducing the Risk*, delayed the onset of intercourse. (*Reducing the Risk* also increased the use of condoms or contraceptives among some groups of youths.) This is the first time that research on replications of a sex education program has confirmed initial findings of effectiveness.

Other sex and HIV education programs, including *Safer Choices*; *Becoming a Responsible Teen*; *Making a Difference: An Abstinence Approach to STD, Teen Pregnancy, and HIV/AIDS Prevention*; and *Making a Difference: A Safer Sex Approach to STD, Teen Pregnancy, and HIV/AIDS Prevention*, have also been shown to delay sex or increase condom or other contraceptive use and thereby to decrease unprotected sex substantially. The studies of these four curricula employed experimental designs and found positive behavioral effects for at least 12 to 31 months. All five of these curricula have also been identified by the Centers for Disease Control and Prevention as having strong evidence of success.

The programs that have changed teens' sexual behavior share 10 necessary characteristics (Figure 1). The absence of even one of these characteristics appears to make a program appreciably less likely to be effective. Generally speaking, short-term curricula, whether abstinence-only or sexuality education programs, do not have measurable impact on the behavior of teens.

Figure 1. Ten Characteristics of Effective Sex and HIV Education Programs

The curricula of the most effective sex and HIV education programs share 10 common characteristics. These programs:

1. Focus on reducing one or more sexual behaviors that lead to unintended pregnancy or HIV/STD infection.
2. Are based on theoretical approaches that have been demonstrated to influence other health-related behavior and identify specific important sexual antecedents to be targeted.
3. Deliver and consistently reinforce a clear message about abstaining from sexual activity and/or using condoms or other forms of contraception. This appears to be one of the most important characteristics that distinguishes effective from ineffective programs.
4. Provide basic, accurate information about the risks of teen sexual activity and about ways to avoid intercourse or use methods of protection against pregnancy and STDs.
5. Include activities that address social pressures that influence sexual behavior.
6. Provide examples of and practice with communication, negotiation, and refusal skills.
7. Employ teaching methods designed to involve participants and have them personalize the information.
8. Incorporate behavioral goals, teaching methods, and materials that are appropriate to the age, sexual experience, and culture of the students.
9. Last a sufficient length of time (i.e., more than a few hours).
10. Select teachers or peer leaders who believe in the program and then provide them with adequate training.

Sex and HIV Education Programs for Parents and Families

Most parents want to impart their values about sexuality to their children. But because parents often have difficulty talking with their children about sexual topics, a number of educational programs have been developed to improve parent/child communication. Many studies have demonstrated short-term increases in parent/child communication, as well as increases in parent comfort with that communication, although the positive effects dissipate with time. Neither of the two studies that measured whether these programs delayed the onset of sexual intercourse found statistically significant effects, but the characteristics of the studies might have obscured possible program impact. This does not mean that parental influence and parent/child communication are not important. In fact, other research confirms the importance of parent/child "connectedness," for instance, in reducing risky sexual behavior among teens.

Programs Designed to Improve Access to Condoms or Other Contraceptives

Many community family planning clinics, school-based health clinics, and school-linked clinics offer services to teens, including access to condoms and other contraceptives. With regard to family planning clinics in particular, it is clear that they provide many adolescents with contraceptive services, which presumably prevent pregnancies among those teens. Nonetheless, because the long-term impact of family planning services on the frequency of sexual behavior is not known, the number of teen pregnancies prevented by family planning services is difficult to estimate.

However, there are clearer findings regarding particular clinic protocols or programs within health or family planning clinics. These programs—in which youths were provided with information about abstinence, condoms, and/or contraception; were engaged in one-on-one discussions about their own behavior; were given clear messages about sex and condom or contraceptive use; and were provided condoms or contraceptives—consistently increased the

use of condoms and contraception without increasing sexual activity.

Many studies of schools with health clinics and schools with condom-availability programs have consistently shown that the provision of condoms or other contraceptives through schools does not increase sexual activity. Studies also show that substantial proportions of sexually experienced students have obtained contraceptives from these programs. However, given the relatively wide availability of contraceptives in most communities, most school-based clinics, especially those that did not focus on pregnancy or STD prevention, did not appear to markedly increase the school-wide use of contraceptives; that is, there appeared to be a "substitution effect," meaning that teens merely switched from getting contraception from a source outside of school to getting it in school. By contrast, two studies suggested that school-based or school-linked clinics did increase use of contraception when they focused much more on contraception, gave clear messages about abstinence and contraception, and provided or prescribed contraceptives.

Although studies of school condom-availability programs consistently demonstrated that the programs did not increase sexual activity, they provided conflicting results about their impact upon school-wide use of condoms. These differences may reflect methodological limitations, differences in the availability of condoms in the community, or differences in the programs themselves.

Taken together, these studies suggest that family planning clinic protocols or programs, school-based and school-linked clinics, and condom-availability programs in schools that increased condom or other contraceptive use shared common characteristics. They focused primarily (or solely) on reproductive health and provided young people with a combination of educational material (however modest), the opportunity for one-on-one counseling or discussions, a clear message about abstinence and condom or contraceptive use, and actual condoms or contraceptives.

Community-Wide Initiatives with Many Components

In the past two decades, recognizing the complexity of the problem of teen pregnancy, more communities have put in place multicomponent efforts to reduce rates of teen pregnancy. These initiatives typically combine such interventions as media campaigns, increased access to family planning and contraception services, sex education classes for teens, and training in parent/child communication. The research evidence on these initiatives is mixed. Each of the studies reviewed in the report measured effects on teens throughout the community, not just on those teens directly served by programs. The two most effective programs were the most intensive ones, and, in fact, when the interventions ceased, the use of condoms or pregnancy rates returned to preprogram levels, suggesting that such programs need to be maintained to have continuing effects. However, one of these two effective programs did not show positive results when it was tried again in a different community. The bottom line seems to be that it is very hard to change adolescent sexual or contraceptive behavior throughout an entire community. When such change is accomplished, it takes intense effort, which must be sustained.

Programs that Focus on Nonsexual Antecedents

Programs in this category focus on broader reasons behind why teens get pregnant or cause a pregnancy, including disadvantaged families and communities; detachment from school, work, or other important social institutions; and lack of close relationships with parents and other caring adults. For instance, research suggests that teens who are doing well in school and have educational and career plans for the future are less likely to get pregnant or cause a pregnancy. Increasingly, programs to prevent teen pregnancy concentrate on helping young people develop skills and confidence, focus on education, and take advantage of job opportunities and mentoring relationships with adults, thereby helping them create reasons to make responsible decisions about sex. These efforts include service learning, vocational education and employment programs, and youth development programs, broadly defined. Early childhood programs also focus on nonsexual antecedents that may have an impact on the later sexual behavior of their participants.

Early Childhood Programs

Only one study evaluating an early childhood program met the criteria for this review. In the study of the Abecedarian Project, infants in low-income families were randomly assigned to a full-time, year-round day care program focused on improving intellectual and cognitive development or to regular infant day care. In elementary school they were again randomly assigned to a 3-year parent involvement program or to a normal school environment. The children were followed until age 21. The kids in the preschool program delayed childbearing by more than a year in comparison with the control group; they also performed higher on a number of intellectual and academic measures. Although this is encouraging, it is only one study with a small sample, albeit with a strong scientific design.

Youth Development Programs for Adolescents

Service Learning Programs. Service learning programs include two parts: (1) voluntary service by teens in the community (e.g., tutoring, working in nursing homes, and fixing up parks and recreation areas), and (2) structured time for preparation and reflection before, during, and after service (e.g., group discussions, journal writing, and papers). Sometimes the service is part of an academic class. Service learning programs may have the strongest evidence of any intervention that they reduce actual teen pregnancy rates while the youth are participating in the program. Among the programs with the best evidence of effectiveness are the Teen Outreach Program and Reach for Health service learning program. Although the research does not clearly indicate why service learning is so successful, several possibilities seem plausible: participants develop relationships

Table 1. Programs with Strong Evidence of Success

Programs that Focus Primarily on Sexual Antecedents

Sex education programs covering both pregnancy and STDs/HIV[a]
- Reducing the Risk
- Safer Choices

HIV education programs[a]
- Becoming a Responsible Teen: An HIV Risk Reduction Intervention for African-American Adolescents
- Making a Difference: An Abstinence Approach to STD, Teen Pregnancy, and HIV/AIDS Prevention
- Making a Difference: A Safer Sex Approach to STD, Teen Pregnancy, and HIV/AIDS Prevention

Programs that Focus Primarily on Nonsexual Antecedents

Service learning[b]
- Teen Outreach Program (TOP)
- Reach for Health Community Youth Service Learning

Programs that Focus on Both Sexual and Nonsexual Antecedents

Multicomponent programs with intensive sexuality and youth development component
- Children's Aid Society–Carrera Program[c]

[a]Although the sex and HIV education programs identified in this table demonstrated a positive impact on sexual behavior and condom and contraceptive use, some other sex and HIV education programs did not have positive effects. Studies indicated that the sex and HIV education programs in this table reduced sexual risk-taking, but they did not provide evidence they reduced teen pregnancy.

[b]All the service learning programs that have been evaluated, including the Learn and Serve programs, have found results suggesting a positive impact on either sexual behavior or pregnancy. The Learn and Serve study is not included on this list because it did not meet the criteria for being on this list, but it did confirm the efficacy of service learning. According to the analysis of TOP, the particular curriculum used in the small group component did not appear to be critical to the success of service learning.

[c]This program has provided the strongest evidence for a 3-year impact on pregnancy.

with program facilitators, they gain a sense of autonomy and feel more competent in their relationships with peers and adults, and they feel empowered by the knowledge that they can make a difference in the lives of others. All such factors, in turn, may help increase teenagers' motivation to avoid pregnancy. In addition, participating in supervised activities, especially after school, may simply reduce the opportunities teens have to engage in risky behavior, including unprotected sex.

Vocational Education Programs. Vocational education programs provide young people with remedial, academic, and vocational education sometimes coupled with assistance in getting jobs and other health education and health services. Four studies have evaluated the effect of such programs on teen sexual risk-taking, pregnancy, and childbearing. A strong study of the Summer Training and Education Program revealed that the program did not have a consistent and significant impact on either sexual activity or use of contraception. Similarly, evaluations of three programs, the Conservation and Youth Service Corps, the Job Corps, and JOBSTART, revealed that they did not affect overall teen pregnancy or birth rates at 15- to 48-month follow-up. Thus, these studies provide rather strong evidence that programs like these four, which offer academic and vocation education and a few support services and are quite intensive, will not decrease pregnancy or birth rates among disadvantaged teens.

Other Youth Development Programs. Two other youth development programs have been evaluated for their effect on teen pregnancy or birth rates. One of them, the Seattle Social Development Program, was designed to increase grade schoolers' attachment to school and family by improving teaching strategies and parenting skills. When these students were followed to age 18, those receiving the intervention were less likely to report a

pregnancy than the comparison group. This is encouraging, but the evaluation design was not strong.

PROGRAMS WITH BOTH SEXUALITY AND YOUTH DEVELOPMENT COMPONENTS

Three studies have examined programs that address both reproductive health and youth development simultaneously. The first study evaluated three programs in Washington state that provided teens with small group and individualized education and skill-building sessions, as well as other individual services. Results indicated that the programs did not delay sex nor increase contraceptive use, but they did decrease the frequency of sex. The second study evaluated different programs in 44 sites in California targeted to the sisters of teen girls who had become pregnant—an interesting strategy that is based on the well-known fact that having an older sister become pregnant increases the chances that younger sister will do the same. The programs offered individual case management and group activities and services. The evaluation showed that the interventions delayed sex and decreased reported pregnancy nine months later.

Finally, a recent and very rigorous study of the comprehensive Children's Aid Society (CAS)—Carrera Program demonstrated that, among girls, it significantly delayed the onset of sex, increased the use of condoms and other effective methods of contraception, and reduced pregnancy and birth rates. The program did not reduce sexual risk-taking among boys. The CAS-Carrera Program, which is long-term, intensive, and expensive, includes many components: (1) family life and sex education; (2) individual academic assessment, tutoring, help with homework, preparation for standardized exams, and assistance with college entrance; (3) work-related activities, including a job club, stipends, individual bank accounts, employment, and career awareness; (4) self-expression through the arts; (5) sports activities; and (6) comprehensive health care, including mental health and reproductive health services and contraception. This is the first and only study to date that includes random assignment, multiple sites, and a large sample size and that found a positive impact on sexual and contraceptive behavior, pregnancy, and births among girls for as long as 3 years.

WHAT DOES ALL THIS MEAN?

Just as in 1997, there are still no easy answers to the problem of teen pregnancy. However, recent research suggests that there are programs in each of the three main categories described above with evidence that they reduce sexual risk-taking, pregnancy, and childbearing among teens (Table 1).

• *Programs that focus on sexual antecedents.* Several sex and HIV education programs delay the onset of sex, reduce the frequency of sex, reduce the number of sexual partners among teens, or increase the use of condoms and other forms of contraception. The most successful programs share 10 specific characteristics (Figure 1). In addition, several particular protocols and interventions in clinic programs also increase the use of condoms or other forms of contraception.

• *Programs that focus on nonsexual antecedents.* Certain service learning programs, which do not focus on sexual issues at all, have the strongest evidence that they actually reduce teen pregnancy rates. Other types of youth development programs, especially vocational education, have not reduced teen pregnancy or childbearing.

• *Programs that focus on both sexual and nonsexual antecedents.* A comprehensive, intensive, and long-term intervention, the CAS—Carrera Program, which includes both youth development and reproductive health components, substantially reduces teen pregnancy and birth rates among girls over a long period of time.

These three categories of programs may seem contradictory; one focuses directly on issues of sex and contraception, one addresses nonsexual factors, and the third targets both. But finding effective programs in each category is heartening news and conforms with what the research says about the antecedents of teen pregnancy and childbearing. If very different approaches prove to be effective, then communities benefit because they have more options from which to choose.

Studies of a number of other types of interventions, including community-wide initiatives and collaboratives, school-based clinics and school condom distribution programs, and some sex and HIV education programs, offer mixed results of effectiveness. In addition, the few rigorous studies of abstinence-only curricula that have been completed to date do not show any overall effect on sexual behavior or contraceptive use. That said, one should not conclude that these various interventions have no value at all or that they should necessarily be abandoned as part of the overall mix of prevention strategies. There may be a variety of such interventions whose value has not yet been identified by rigorous evaluation.

In addition, the research indicates that encouraging abstinence and urging better use of contraception are compatible goals for at least two reasons. First, the overwhelming weight of evidence shows that sex education that discusses contraception does not increase sexual activity. Second, programs that emphasize abstinence as the safest and best approach, while also teaching about contraceptives for sexually active youth, do not decrease contraceptive use. In fact, effective programs shared two common attributes: (1) being clearly focused on sexual behavior and contraceptive use and (2) delivering a clear message about abstaining from sex as the safest choice for teens and using protection against STDs and pregnancy if a teen is sexually active.

So, what should communities do with the information gleaned from the research literature? *Emerging Answers* suggests three strategies for employing promising approaches.

(1) The best option is to replicate with fidelity (that is, carefully copy) programs that have been demonstrated to be effective with similar populations of teens.

(2) The next best option is to select or design programs with the common characteristics of programs that have been effective with similar populations.

(3) If a community cannot do either No. 1 or No. 2, it should use a careful, deliberate process to select or design new programs and not just rely on accustomed ways of doing things. A useful strategy is to use a process adopted by many of the people who designed the effective programs reviewed above: develop logic models. A logic model (also called a causal or program model) is a concise, causal description of exactly how certain program activities can be expected to affect particular behaviors by teens. At a minimum, a logic model requires that one be specific about what behavior one wants to change. A logic model identifies, in the following order, (a) the behaviors to be changed, (b) the precursors or antecedents of these behaviors (i.e., the individual, family, social, and community factors that predispose teens to risky behaviors), and (c) the particular program activities designed to change these antecedents. This way of thinking and planning usually results in programs that have clear goals and orderly and plausible plans for reaching those goals.

In the final analysis, professionals working with youths should not adopt simplistic solutions with little chance of making a dent on the complex problem of teen pregnancy. Instead, they should be encouraged by declining rates and new research showing that some programs are making a difference. They should continue to explore many ways to address the various causes of teen pregnancy. They should replicate those programs that have the best evidence for success, build their efforts around the common elements of successful programs, and continue to explore, develop, and evaluate innovative and promising approaches.

Of course, all young people live in a larger culture that is influenced by such disparate forces as parents, peers, schools, the economy, faith institutions, and the entertainment media. So, even as professionals continue to develop, implement, and evaluate better and more effective prevention programs, there is still enough work for other sectors of society to help make adolescence in America a time of education and growing up, not pregnancy and parenting.

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References are available in the final report.

knowledge of OWF was intriguing. Women who were more knowledgeable about OWF had a more positive attitude toward contraceptives than women who were least knowledgeable about OWF. Additional research should be conducted to further verify this relationship and to clarify how it may relate to contraceptive behavior. Perhaps by focusing on improving knowledge of welfare reform and current attitudes toward contraceptives, educators can create programs that will increase contraceptive use.

Finally, caution must be exercised when interpreting these findings. This study used a small convenience sample of OWF women residing in only one Ohio county, limiting the external validity of the findings. Future research needs to examine a larger and more representative sample of women on welfare. Future research should also focus on improving the survey design; participants often complained that the survey was too long, especially the attitude section. Efforts should be made to shorten the survey and make it more user-friendly. The sample size was small but represents a pilot study. Such a small sample size limits the power of the results, possibly resulting in a Type II error.

Overall, this study indicates that problems exist in educating Hamilton County, Ohio, women about OWF. Although many of the women had been exposed to OWF information, they still were not well informed on the program. It also indicates that modifying benefit requirements may not be an effective way to improve contraceptive behavior to reduce pregnancies. Further research studies are needed to substantiate the results of this study and identify future directions for OWF.

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