

# Preventing Sexual Risk Behaviors and Pregnancy Among Teenagers: Linking Research and Programs

Recent trends in adolescent sexual behavior offer mixed messages. It is very encouraging that teenagers' overall rates of sexual activity, pregnancy and childbearing are decreasing, and that their rates of contraceptive and condom use are increasing.<sup>1</sup> However, the proportion of young people who have had sex at an early age has increased.<sup>2</sup> Moreover, while adolescent females' contraceptive use at first sex is rising, their use at most recent sex is falling.<sup>3</sup>

There is general consensus that the proportion of teenagers who engage in behaviors that put them at risk of pregnancy and of HIV and other sexually transmitted infections (STIs) remains too high. Each year, approximately one million young women aged 15–19—or one-fifth of all sexually active females in this age-group—become pregnant; the vast majority of these pregnancies are unplanned.<sup>4</sup> In the United States, the risk of acquiring an STI is higher among teenagers than among adults.<sup>5</sup> Moreover, rates of unprotected sexual activity, STIs, pregnancy and childbearing continue to be substantially higher among U.S. adolescents than among young people in comparable industrialized countries.<sup>6</sup>

Research has also begun to highlight an alarmingly high rate of involuntary sex among young people. In the 1995 National Survey of Family Growth, 13% of 15–19-year-old females reported that they had been forced to have sex.<sup>7</sup> When asked about their first sexual experience, 22% of 15–44-year-old women for whom it occurred before age 15 reported that the act was involuntary, as did 16% of those who first had sex before age 16. Involuntary sexual activity is typically unprotected and thus puts its victims at very high risk of pregnancy and STIs.

Finally, recent research and clinical observations suggest that a substantial proportion of teenagers, including those who report having never had vaginal sex, are engaging in oral sex.<sup>8</sup> This trend has negative implications for teenagers' sexual health because many seem unaware that STIs can be acquired through unprotected oral sex.

Adolescent health professionals are faced with the dilemma of how to refine programmatic and research efforts to maintain the progress that has been made while reducing those risk behaviors that remain too prevalent. The solution may lie, in part, in bridging the gap between research and programs. For more than 30 years, researchers have studied the antecedents of teenagers' high-risk sexual behaviors, and service providers have designed programs to prevent those behaviors. Their efforts have typically proceeded independently, however, and each professional community's work has not routinely informed that of the other.

This lack of communication is understandable, given the differences in professional backgrounds and training, work settings and day-to-day activities. We believe, however, that this lack of communication inevitably compromises the quality of both research and programs related to teenage sexual health and behaviors.

We are an interdisciplinary group of public health researchers and service providers who are committed to bridging the chasm between research and programs. In this comment, we suggest ways in which work to reduce levels of teenage pregnancy and risk-taking can proceed in a more integrated and collaborative fashion. We believe that research on prevention should be designed and conducted to inform the development of programs and policy. The issues that emerge as these programs and policies are implemented, in turn, will raise questions that promote further research, which ultimately will inform the next generation of programs and policies.

The structure of this comment models this process. We begin on the research side and give a brief overview of findings on the antecedents of adolescent sexual risk behaviors and pregnancy, and discuss their implications for program and policy development. This effort is grounded in a comprehensive literature review that we conducted for the Centers for Disease Control and Prevention (CDC).<sup>\*</sup> We then move to the program side. On the basis of our own clinical observations and discussions with other providers in a variety of settings, we identify a set of critical programmatic issues that hinder success in reducing adolescents' sexual risk-taking. Finally, we outline the specific research questions raised by these service-related issues. The answers to these questions will potentially enhance program efficacy.

## RESEARCH SIDE

### Antecedents of Risky Sexual Behaviors and Pregnancy

In our literature review for the CDC, we targeted three risky sexual behaviors—early onset of sexual activity, nonuse of contraceptives and nonuse of condoms—and one possible outcome of those behaviors, teenage pregnancy. Major literature reviews on these topics were published in 1987 and 1995;<sup>9</sup> we supplemented and updated them by systematically examining the research published in peer-reviewed journals from 1994 to 2002.

The literature identifies four key sets of factors that have been associated with risky sexual behaviors and pregnan-

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<sup>\*</sup>The literature review, which contains a detailed section on study methodology, is available from the first author.

cy: race and ethnicity; socioeconomic status; social influences; and attitudes toward contraception, condoms and pregnancy and safer-sex behavioral skills. Differences by race and ethnicity vary across risk behaviors. For example, black teenagers are more likely to have very early vaginal sex than Hispanics, who are more likely to do so than whites.<sup>10</sup> (Specifically, black males initiate vaginal sex more than two years earlier than Hispanic males, and three years earlier than white males.<sup>11</sup>) Hispanic adolescents are the least likely to have used a condom or another contraceptive method at last intercourse.<sup>12</sup> The combined influences of earlier sexual debut among blacks and greater nonuse of contraceptives among Hispanics yield higher teenage pregnancy rates among nonwhite than white teenagers.<sup>13</sup>

These racial and ethnic differences in sexual risk-taking and pregnancy are partly attributable to differences in socioeconomic disadvantage. More broadly, socioeconomic status is related to each of the four outcomes studied. Among the socioeconomic indicators that significantly predict risky sexual behaviors and pregnancy are the adolescent's having a parent with low educational attainment and living in a single-parent family.<sup>14</sup> A teenager's own level of academic achievement is positively related to age at sexual debut.<sup>15</sup>

Young people's social influences clearly affect their likelihood of engaging in risky behaviors, particularly early sexual debut and nonuse of condoms. For example, having friends who are sexually active or who do not use condoms enhances one's own risk of these behaviors.<sup>16</sup> Moreover, teenagers who perceive that their mother disapproves of their having sex or who talked with their mother about condom use before first intercourse are less likely than others to become sexually active or to fail to use condoms.<sup>17</sup> Finally, teenagers who are more actively involved in religious activities and those who avoid general nonsexual high-risk behaviors tend to initiate sex later than other teenagers.<sup>18</sup> In all likelihood, the effects of religiosity and avoidance of risk operate through social influence mechanisms.

Sexual risk behaviors are also related to attitudes and behavioral skills. Adolescents' attitudes toward practicing contraception, using condoms and becoming pregnant predict the likelihood that each will occur.<sup>19</sup> In addition, their specific attitudes toward pregnancy affect the likelihood that they will practice contraception and use condoms.<sup>20</sup> Furthermore, teenagers who feel they have the requisite skills to use condoms (i.e., they can obtain them and successfully negotiate their use with a partner) are more likely than others to use condoms.<sup>21</sup> Similarly, young people who have demonstrated to themselves that they can use contraceptives (i.e., they used them once) are more likely than others to use them again.<sup>22</sup>

Not surprisingly, age and age at menarche strongly affect the likelihood of sexual initiation and teenage pregnancy.<sup>23</sup> Older female adolescents and those who reach menarche at younger ages, because of their longer intervals of exposure, are more likely than their younger peers to become sexually active and to get pregnant.<sup>24</sup> Despite the positive correlation between age and pregnancy, older sexually ac-

tive teenagers are, paradoxically, more likely than younger ones to have used a contraceptive method at last sex.<sup>25</sup>

### Programmatic Implications of the Research

Taken together, these research findings have implications for programs that are designed to reduce high-risk behaviors among adolescents. The programmatic implications yield the following eight broad recommendations.

- **Programs should begin earlier and target younger adolescents.** Since adolescents who experience early puberty are at increased risk for early sexual activity, primary health care providers should be screening and counseling youth regarding puberty, sex and sexual risk behaviors at younger ages than they currently do. Many young adolescents receive health care from pediatricians or family practice physicians; these health professionals should inquire about each patient's sexual experiences and intentions during pre-adolescence and early adolescence. They then should provide developmentally appropriate educational and counseling messages that are responsive to the young person's stage of sexual activity. Because at least some young people have oral sex before vaginal sex, it is important that these conversations include oral sex.

- **New program models for minority teenagers need to be developed.** The data documenting the early onset of vaginal sex among black males and the relatively low levels of contraceptive and condom use among Hispanic teenagers suggest that current prevention models are ineffective at reducing these behaviors in nonwhite communities.

- **Risk reduction programs need to be systematically linked to other youth programs that directly address socioeconomic disadvantage.** The literature paints an overall picture of heightened risk among poor and disadvantaged adolescents. Programs that address sexual and reproductive health issues in disadvantaged communities tend to offer a vital but limited array of services. With some notable exceptions (e.g., the Children's Aid Society-Carrera Program<sup>26</sup>), these programs have not addressed the fact that poor teenagers' motivation to avoid pregnancy is undermined by their blocked opportunities for advancement.

We recognize that it is both difficult and costly to incorporate vocational and academic counseling and support, as well as mentoring and related services, into sexual and reproductive health programs. Rather than attempt to provide these important services, sexual risk reduction programs could form active partnerships with youth programs that are focused on these other goals. Such partnerships would connect teenagers to a supplementary web of services as well as increase the level of coordination between a wide array of youth organizations and providers.

- **Programs need to understand that many youth lack the skills to practice safer sex.** A variety of behavioral skills are necessary for condom use, including communication, negotiation and refusal skills, and technical condom use skills. Programs must train clients in these skills and provide time and a comfortable place for them to practice. While the resource investment needed for such skills training may appear to

be beyond the normal scope of adolescent health and family planning programs, ignoring this component undermines the value of safer-sex education and counseling.<sup>27</sup>

• *Programs need to effectively address the influence of peer groups, social norms and pressures to have sex.* The influence of social norms is particularly acute during adolescence, which is characterized by a strong need to fit in with one's peers. Small-group interventions to address these pressures are particularly promising,<sup>28</sup> since these programs offer a unique opportunity to develop and reinforce norms that support risk reduction behaviors. Over time, the group becomes a valued social network that motivates adherence to the newly formed norms. Some group interventions have been set up with preexisting friendship networks;<sup>29</sup> this approach takes advantage of natural social networks that then can reinforce the normative and behavioral change after the intervention ends.

A small-group program will only be effective, however, if the intervention lasts long enough for the group to coalesce and function as a valued social network. Decisions on program duration thus need to take into account not only the time involved in knowledge acquisition and skills training, but the time needed to create a cohesive group that can generate and support new norms.

• *Programs for adolescents should not assume that sexual behavior is volitional.* Despite the overall high rates of forced sex reported by young women and the high proportion of very early sexual activity that is reported to be involuntary,<sup>30</sup> most current models of sexuality education and counseling assume that youth are free agents in their sexual decision-making. Thus, when programs counsel about abstinence or safer sex and teach the requisite skills to practice them, the desired behavior is expected to follow. However, this assumption misses the mark for youth who are unable to make autonomous decisions about whether and under what conditions to have sex.

The starting point is to develop protocols that sensitively elicit information from youth about whether their sexual activity is voluntary. This would involve training providers to feel comfortable seeking this information. The next step is to link youth who report nonconsensual sex to counselors who have been trained in working with young people on this issue.

Ideally, social workers should be added to the staff of family planning clinics and pregnancy prevention programs so they can intervene with youth who have had early non-consensual sex. For this group of very high-risk youth, social work intervention is a necessary supplement to traditional family planning education and counseling.\* Programs that do not and cannot provide mental health services need to design a referral system that is suited to adolescents. Because clinical experience has shown that adolescents given a referral will not always make and keep an appointment, the system should test new methods of making and following up on adolescent referrals.

• *Programs should not assume that sexual activity among teenagers is limited to vaginal sex.* If substantial proportions

of youth view behaviors aside from intercourse as safer forms of sexual activity than vaginal sex, it is important that programs explicitly discuss these behaviors and educate youth about them. Adolescents need to know about the risks for STIs associated with oral and anal sex, as well as how to protect themselves from these infections.

• *Programs cannot assume that teenagers are unambivalent about preventing pregnancy.* For many adults, the issue is perfectly clear—teenagers should not bear children. However, it is incorrect to assume that teenagers, particularly those who are most at risk of early childbearing, share this view. Teenagers hold a range of attitudes toward childbearing; while the more negative attitudes along that spectrum protect against early pregnancy, the more positive ones increase the risk of unprotected sex. In-depth studies on these attitudes indicate that although few teenagers want to become pregnant in the near future, a sizable minority are ambivalent about that prospect.<sup>31</sup> Teenage pregnancy prevention programs need to focus more on this ambivalence, which, if left unchecked, affects adolescents' motivation to delay sex or to use contraceptives consistently.

Innovative programs that probe adolescents' attitudes toward childbearing should include values clarification exercises and discussions that reality-test young women's beliefs about childbearing, particularly the likely role of the baby's father in their lives and in the baby's life. Such programs may be offered in a variety of settings, including health education classes and after-school recreational programs, and through videos shown in the waiting rooms of adolescent health, school-based health or family planning clinics.

#### **PROGRAM SIDE**

In our clinical observations and discussions with an array of service personnel, providers identified four key issues as impediments to program success with adolescents. Each of these translates into a set of questions to help guide research. Because these questions are grounded in concerns brought up by program providers, the research undertaken to answer them is likely to be embraced by providers in their continuing efforts to improve the quality of prevention programs.

#### **Learning Disabilities and Cognitive Immaturity**

The link between poor academic performance and high-risk sexual behaviors is well established.<sup>32</sup> While many variables contribute to academic failure, we focus on cognitive deficits, which include learning disabilities and cognitive immaturity.

Through our clinical practices and program work, we have come to believe that teenagers with cognitive deficits probably engage in early, unprotected sexual activity at higher

\*Some examples of adolescent clinical programs that have adopted this comprehensive approach are the adolescent family planning and school-based health clinics run by the Mailman School of Public Health and the Center for Community Health and Education in collaboration with New York Presbyterian Hospital, the Mount Sinai Adolescent Health Center and Planned Parenthood of New York City.

***For...very high-risk youth, social work intervention is a necessary supplement to traditional family planning education and counseling.***

rates than others do. These deficits may cause low academic achievement, which in turn increases the likelihood of sexual risk-taking. Our observation is supported by a study based on data from the National Longitudinal Survey of Youth, which documented a significant association between low cognitive ability and early childbearing.<sup>33</sup> Practicing safer sex requires a series of skills and abilities (i.e., abstract thinking, cost-benefit analysis, anticipatory planning and behavioral control) that may be lacking in youth with learning disabilities or low levels of cognitive maturity.

Finally, cognitive deficits may result in sexual risk-taking because sexuality education and pregnancy prevention programs are not designed to accommodate the learning styles of these children. Educational research and theory clearly indicate that effective teaching requires sensitivity to the learning style, as well as the cognitive ability and maturity, of the learner.<sup>34</sup> This theory, however, has not filtered into the fields of health education and communication. Adolescent counseling and education programs are typically designed with a one-size-fits-all approach. This standardization of teaching mode and content places teenagers with learning disabilities and low levels of cognitive maturity at a clear disadvantage.

Research is needed into the association between learning and related disabilities (e.g., attention deficit disorder), cognitive immaturity and sexual risk-taking behavior among adolescents. Our experience suggests that such research needs to address the following questions:

- Are adolescents with learning disabilities and low levels of cognitive maturity at greater risk than their peers for sexual risk-taking and poor sexual health?
- Can screening instruments for assessing learning disabilities and cognitive maturity be adapted for use by providers in clinical settings?
- Are specific types of instruction, counseling, support and follow-up more effective than others in reducing sexual risk-taking among cognitively impaired adolescents?

#### **Insufficient Male Involvement**

The majority of adolescent pregnancy prevention programs have been designed for females, partly because women are the ones who get pregnant and because, except for condoms, all reversible contraceptive methods are female methods. However, the strength of the rationale for focusing exclusively on women has diminished over the last few decades. For example, a heightened concern with preventing disease as well as pregnancy has made males an increasingly important audience for programmatic efforts. Among adolescents who are sexually active, the most effective method of disease prevention is the male condom, which reinforces the need to include young men. Finally, increased interest in delaying the onset of sexual activity has meant that prevention programs need to be directed at both sexes.

Typically, programs that involve young men have “budded off” of existing programs for women. Such a secondary focus is unlikely to be the best approach to serving young

men, however. The guiding question is how to best design and structure clinical programs that focus on young men and contribute to global pregnancy and disease prevention goals. Systematic research into this area should address the following:

- What is the most appropriate setting for male sexual health programs—stand-alone efforts or interventions that are part of larger family planning and sexual health programs that serve women as well?
- What are the most appropriate services for male programs: Would young men be more comfortable if the program also provided primary health care services rather than sexual health services exclusively?
- What is the most appropriate content for counseling and health education for males, and what strategies would best deliver that content?
- Do male clients feel more comfortable with male providers than with female providers?
- How do we change the generalized belief among the public and providers alike that only young women, and not young men, need reproductive and sexual health services?

#### **Males' Very Early Sexual Activity**

In recent years, considerable attention has been paid to very early onset of vaginal sexual activity among females (i.e., before age 14), particularly because unacceptably high rates of nonvolitional sex have been documented among this age-group.<sup>35</sup> We know little, however, about the nature or context of males' very early vaginal sex. The issue is most pressing for black males, whose median age at first sex is 13.6 years.<sup>36</sup> The most extreme explanation for this finding is that young males are frequently coerced into having vaginal sex. However, even if such sexual activity is not physically forced, it may not be truly voluntary. One factor motivating early intercourse may be that male peer group norms endorse early sex as a way to prove masculinity and thus solidify social standing. Knowing the motivation behind and nature of early sexual experiences among young men is critical for designing counseling and educational programs that are grounded in the reality of their lives. Research is needed to address the following questions:

- To what extent is very early vaginal sex voluntary for young men?
- What is the age difference between young men who are pressured to have sex and their partners?
- Even when early sex is not forced, is it a response to peer group pressures or other social influences?
- How do these young men feel about their very early sexual activity?
- What factors protect against very early onset of sexual activity among males?

#### **Onetime Program or Clinic Visits**

For many of the health professionals who are best positioned to provide risk reduction services to youth, the onetime visit poses an enormous obstacle. Clients of adolescent health, school health and family planning clinics, which serve large

numbers of youth, typically make a single visit, followed by an indeterminate interval before a second one. Program staff need to somehow effectively provide risk reduction education and counseling in a single visit, and also offer the service that the client came for. The reality of health care financing, with its premium on short visits, compounds this problem.

The dilemma of the single visit is complex, and little research exists on how best to address it.<sup>37</sup> Clearly, providers need to make the most creative use of their limited time with adolescent clients. One idea is to use the waiting room as a forum for health education. Adding a health educator to clinic staff can transform the waiting room from a source of frustration and boredom into a site for receiving health education, participating in discussions about sexual risk-taking, and learning sexual communication and refusal skills. Waiting-room health education can be facilitated by the use of culturally and developmentally appropriate videos and slide shows or print material to spark discussion between the client and educator. Computers with interactive educational software may also be used for health education and counseling.

Another possibility is to extend contact with adolescent clients through follow-up by phone or e-mail. These contacts could be initiated by a trained counselor or health educator as a way of staying in touch; they could also be used to reinforce counseling and educational messages that were presented at the clinic and to encourage a revisit.

The development of these new approaches will take time and money. Both will be hard to come by in a period of shrinking resources in which understaffed and underfunded providers are overwhelmed. These new efforts must therefore be conducted with external funds that include evaluation monies. Research to identify the most feasible and effective models for extending the one-visit encounter and maximizing its impact should be guided by the following questions:

- What are the goals of waiting-room education, and are programs successful at achieving them?
- What are the minimum requirements for a waiting-room program to be successful?
- Is waiting-room education most effective when it is led by an educator, or are electronic media presentations (i.e., via video or computer) just as effective?
- Are periodic phone or e-mail contacts effective at reinforcing health education messages about safer sex? Do they help maintain gains in knowledge and changes in attitudes and behaviors?
- Do follow-up contacts work best for particular groups of adolescents?

## CONCLUSIONS

Our goal was to suggest ways in which research and programs could work in a more integrated and collaborative fashion. An attempt to forge links between research on the antecedents of high-risk behaviors and risk reduction programs led us to recommend new criteria to guide that re-

search. The three criteria usually used to identify antecedents of risk-taking and assess their importance are theory, precedence in the literature, and statistical significance and relative magnitude of the variable's effect. Researchers select antecedents to evaluate on the basis of the first two criteria, and make empirically based conclusions about their impact on the basis of the third. We recommend that the tractability and program relevance of antecedents be added to the list of criteria.

Sometimes antecedents that are very potent but relatively immutable may ultimately be less important than factors that are less strong but more amenable to change or that have clear implications for program development. Researchers need to achieve a better balance between focusing on factors that will help them best model or extend theory on risk behaviors, and focusing on factors that can best inform programs and policy on these behaviors.

Careful consideration of the four critical issues that emerged as obstacles to successful risk reduction programs may provide a road map for a more collaborative engagement between program providers and researchers. To date, many providers have perceived research on the determinants of adolescent sexual risk-taking and pregnancy as external to their needs and perspectives. This detachment may help explain why program people do not openly embrace such research. We suggest that research steeped in the concerns articulated by providers will yield more provider buy-in. This, in turn, will enhance the likelihood that providers will use study findings to develop and modify risk reduction programs for youth.

We hope that the process outlined here extends the research agenda by encouraging studies that are explicitly attuned and responsive to programmatic issues. The primary goal of such research is not to expand theory or increase knowledge (although it may well do so). Instead, the goal is to translate programmatic issues into research questions, whose answers will enhance the development and quality of sexual risk reduction policies and programs. Such programmatic research is a vital supplement to basic research on reproductive and sexual health, and will fundamentally strengthen the tenuous linkages between the research, program and policy communities.

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