VIEWPOINT

Understanding What Works and What Doesn't In Reducing Adolescent Sexual Risk-Taking

By Douglas Kirby

Given high rates of unprotected sex, unintended pregnancy and sexually transmitted disease (STD) infection among U.S. adolescents, for at least two decades people concerned about youth have developed a wide variety of programs to reduce adolescent sexual risk-taking. Sometimes these programs reduced sexual risk-taking; other times, they did not. Recognizing the varying success of programs, people have tried to identify the critical elements of effective programs.

In *Emerging Answers: Research Findings on Programs to Reduce Teen Pregnancy,*[1] I attempted to answer at least in part important questions about what works, what doesn't and why. That volume reviewed about 300 studies on risk and protective factors for adolescent sexual risk-taking. The research had examined the relationship between characteristics of communities, families, peers, partners and the adolescents themselves, on the one hand, and initiation of sex, frequency of sex, number of sexual partners, use of condoms, use of contraceptives, pregnancy and childbearing, on the other hand.

In identifying literally hundreds of different risk and protective factors across those domains, these studies painted a remarkably detailed and complex portrait of the antecedents of adolescent sexual risk-taking. However, 43 seemingly diverse factors appeared to be particularly important. At the community level, community disadvantage (e.g., low levels of education, employment and income) and disorganization (e.g., the crime rate) predicted measures of sexual behavior or pregnancy. Within the family, levels of education and income had an impact, as did family structure (e.g., having two parents versus one parent).

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Family dynamics and attachment also play a role: If parents appropriately supervise and monitor their children, and if the adolescents feel connected to their parents, they are less likely to engage in sexual risk-taking. Family values about sexual behavior and contraceptive use, and family sexual behaviors, also have an impact on the adolescents' behavior. Moreover, peers' norms and behavior regarding sex and contraceptive use affect an individual's sexual and contraceptive behavior, as do adolescents' partners' support for contraception.

Turning to the teenagers themselves, their age and hormone levels, their attachment to school and religious institutions, their engagement in other problem or risk behaviors, their emotional well-being, the characteristics of their relationships with romantic partners, any past history of sexual abuse, and their own sexual beliefs, attitudes, skills and motivations all affect their sexual or contraceptive behavior.

In addition, *Emerging Answers* reviewed 73 studies measuring the impact of diverse types of programs. There was particularly strong evidence that four groups of programs are effective at reducing sexual risk-taking or pregnancy:

- sex and HIV education programs with certain qualities;
- some clinic-patient protocols that focus on sexual behavior;
- service learning programs that include both intensive voluntary service and ongoing small-group discussions about the service; and
- the Children's Aid Society–Carrera programs (CAS-Carrera programs), which include multiple youth development components, health services and close relationships with the staff.

In addition, *Emerging Answers* found weaker evidence that a few other programs were effective.

In this controversial area of research, Emerging Answers was intentionally designed to be a balanced and cautious analysis of what can currently be said about the impact of different kinds of programs. Here, though, I want to be more speculative, to draw upon other knowledge that I have about some of these studies and to incorporate findings from a few studies that did not meet the criteria for inclusion in *Emerging Answers.*

The seemingly diverse risk and protective factors associated with sexual risk-taking, and the four apparently diverse groups of effective programs, raise several questions: Are there common constructs among the many risk and protective factors that may help explain their impact upon sexual behavior? Are there common elements among the effective programs that may explain their success? Is there some conceptual framework or simple theory that can help explain both sets of diverse findings?

Social Norms and Connectedness

A remarkably simple conceptual framework may partially explain some, although not all, of these disparate findings: social norms, and connectedness to those expressing the norms. As an illustration of this concept, consider cigarette smoking. If an adolescent associates with people who express norms favoring smoking, then he or she is more likely to also smoke; if the teenager is around people who express norms opposed to smoking, then he or she is less likely to smoke. In addition, if the adolescent is closely connected to one group or the other, then that group's norms will have a much greater impact upon the adolescent's behavior. Thus, both the norms of the group and the individual adolescent's connectedness to that group are important, and there is an interaction between these two constructs.

There is nothing new about this con-

ceptual framework. Indeed, social-cognitive theory, the theory of reasoned action and innumerable other theories recognize the importance of group norms, and other theories recognize the importance of connectedness to family or other groups. Moreover, social development theory[2] and other theories explicitly recognize the interaction between connectedness to a group and the impact of that group's norms.

Nevertheless, in this commentary, I hope to show that norms, connectedness and their interaction are useful concepts to better understand some (although by no means all) of the findings in *Emerging Answers.* Moreover, I intend to demonstrate that we should give them greater consideration, both in research and in the development of programs to reduce adolescent sexual risk-taking.

How do these simple principles about human behavior explain a substantial number of the research findings in the field of adolescent sexual behavior and programs to affect that behavior? First, youth are commonly connected to their families, to their peers and to their romantic partners, and all three groups have diverse norms about sexual and contraceptive behavior. Thus, the social norms–connectedness framework would suggest that the norms of these groups would have an impact upon adolescents' behavior.

Influence of Norms

According to a large number of studies summarized in *Emerging Answers,* when parents express stricter values about teenagers' having sex or about premarital sex in general, then the teenagers initiate sex later, have sex less frequently and have fewer sexual partners. Similarly, when parents express positive values about contraception, adolescents are more likely to practice contraception if they have sex, and when parents hold more negative views of early childbearing, teenagers are less likely to give birth as adolescents.

However, parents and families express norms in ways other than simply having and verbalizing their values; they also model behavior, and this modeling can affect youths' perceptions of norms and their own behavior. Studies examined in *Emerging Answers* suggest that if a teenager's mother had sex at an early age, gave birth at an early age, is single and dating, or is single and cohabiting, or if an older sister is having sex or has given birth, then he or she is more likely to initiate sex at a younger age. Similarly, if the teenager's mother or sister gave birth as an adolescent, then he or she is also more likely to be involved in a pregnancy or give birth as an adolescent.

The norms and behavior of peers also affect youths' sexual behavior. When teenagers believe that their peers have permissive attitudes toward premarital sex or actually engage in sex, then they themselves are more likely to engage in sex, have sex more frequently and have sex with more sexual partners. If youth believe that their peers express norms favoring condom use and actually use condoms, then they themselves are more likely to use condoms. If adolescents have friends who have become pregnant or are teenage mothers, then they themselves are more likely to become pregnant and bear children.

Finally, several studies indicate that if teenagers' sexual partners support condom use, then they are more likely to use condoms, and if the partners support contraceptive use, then they are more likely to practice contraception. In addition, if teenagers have a boyfriend or girlfriend who is three or more years older, they are much more likely to have sex at any given age. A partial, but probable, explanation for this is that older boyfriends and girlfriends have more permissive norms and expectations about sex.

Other findings from *Emerging Answers* further support the importance of clear norms, and can be partially explained by the norms of different groups. First, youth residing in communities with greater disadvantage and disorganization are more likely to engage in unprotected sex. Residents of communities with low levels of education, high rates of unemployment, low income levels and high crime rates may express less consistent and clear norms about delaying sex, about always using condoms or practicing contraception, and about avoiding early pregnancy and childbearing.[3] Furthermore, a study of low-income Hispanic communities in California found that while most low-income Hispanic communities had high birthrates, the few that did not expressed more consistent and less-permissive values about sexual behavior and early childbearing than the others.[4]

Second, youth who have been previously sexually coerced or abused are much more likely to initiate voluntary sex at an early age, have more sexual partners, use condoms less frequently, practice contraception less frequently, and become pregnant and give birth more often. Although youth who have been sexually abused are often disadvantaged in a number of ways, it is also true that they have undoubtedly received very confusing and conflicting messages—especially from those abusing them—rather than clear and consistent messages about avoiding sex or unprotected sex.

Third, many of the risk and protective factors that most strongly affected initiation of sex, frequency of sex, number of partners, condom and contraceptive use, and pregnancy and childbearing are the teenager's own beliefs and norms about these behaviors. Typically, these beliefs and norms are learned, in part, from the beliefs and norms expressed by others, as well as from others' sexual behavior and its consequences.

In sum, consistent with the social norms–connectedness framework, all of these studies strongly suggest that the norms of the individuals or groups with whom adolescents are connected or with whom they interact affect adolescents' sexual behavior.

Influence of Connectedness

Although norms about sexual behavior and early childbearing vary greatly, families, schools and faith communities in general express clearer norms against unprotected sex than do other groups or influences in youths' communities, such as the media or peers. Thus, the social norms–connectedness framework would predict that greater connectedness to these groups would be related to less sexual risk-taking.

And, according to *Emerging Answers,* that is what numerous studies reveal. Greater attachment to family is related to later initiation of sex, less frequent intercourse, greater use of contraception, less pregnancy and less childbearing. Greater attachment to and success in school have similar effects. Finally, several studies (although not all) have found that stronger religious affiliation is associated with later initiation of sex, less-frequent intercourse, fewer sexual partners and less childbearing. Notably, youth attending parochial schools, which tend to have more conservative values regarding sex outside of marriage, are less likely to initiate sex than those attending public schools.

In contrast, none of the studies reviewed in *Emerging Answers* have found that greater attachment to peers is associated with less sexual risk-taking. In fact, in one study, being part of a peer group and being popular with peers was associated with earlier onset of intercourse.[5] Thus, attachment per se does not reduce

sexual risk-taking, as much as attachment to individuals or groups who have clear norms against sex or unprotected sex.

The same study also found that close friends' characteristics affected teenagers' sexual behavior, but that the characteristics of more distant groups within the school (e.g., school leaders) had little impact. Thus, it is not just that peers can have an influence on sexual behavior, but rather it is the degree of closeness to or connectedness with particular peers that determines whether peer norms affect teenagers' norms.

Evidence from Impact Studies

Can the same social norms–connectedness framework partially explain the success of seemingly diverse programs? As noted above, *Emerging Answers* identified four groups of programs with substantial evidence for success in reducing sexual risk-taking.

The first consisted of sexuality and HIV education programs. Ten characteristics distinguished effective programs from ineffective programs. One of the most important was emphasis on clear norms about avoiding unprotected sex. The effective programs not only stated the norm clearly, they repeated it frequently, provided factual information to support it, engaged youth in activities to help them personalize the norm, modeled desirable behaviors and had students practice the behaviors through role-playing and other activities. In contrast, ineffective programs tended to lay out the pros and cons of different behaviors, taught decision-making skills and then implicitly encouraged youth to decide what was right for them.

Another characteristic of effective programs was that they selected teachers or program leaders who believed in the program and could relate to youth, and then provided them with training. The leaders' qualities, in combination with their training, increased the chances that the students at a minimum would find the program leaders credible, and might even develop some connection with them.

The second group of effective programs consisted of those within health, family planning or STD clinics. In these programs, the project directors modified the standard clinic protocols, and clinicians followed the modified protocols during visits with adolescent patients. Although the programs differed considerably from one another, in all of them staff expressed clear norms against unprotected sex and for abstinence or condom or contraceptive use. For example, they asked each patient about his or her perceived barriers to being abstinent or obtaining and using condoms, demonstrated how to use a condom, engaged the patient in a brief role-play involving negotiating condom use or provided pamphlets to reinforce the message. Thus, these programs not only supported clear norms, they also encouraged the adolescents to adopt the norm. In addition, in one of the programs, clinic staff called all patients 2–6 times after the clinic visit regarding their contraceptive use, which may have increased patient connectedness to the staff.

The third group of effective programs were service learning programs. These programs include voluntary or unpaid service in the community (e.g., tutoring, working as a teacher's aide or working in nursing homes) and structured time for preparation and reflection before, during and after service (e.g., group discussions, journal writing or papers). Often the service is voluntary, but sometimes it is prearranged as part of a class. And often, but not always, the service is linked to academic instruction in the classroom. Four different studies, three of which evaluated programs in multiple locations, have consistently indicated that service learning either delays sexual activity or reduces teenage pregnancy.[6] However, not all service learning programs addressed sexual or contraceptive behavior. Why then did they change behavior?

One such program (for middle school youth) was linked with a program that strongly encouraged youth to delay sex.[7] Members of both the intervention and the control groups received the abstinence programs, but only the intervention group participated in the service learning component. Notably, the intervention group delayed sex for a much longer period of time than the control group, which received only the abstinence component. One possible explanation for these results is that the service learning component increased youths' connectedness to the program staff who were encouraging them to remain abstinent, and therefore their message about abstinence was much more effective.

Frankly, it is less clear why some of the service learning programs delayed sex or reduced teenage pregnancy. There are many plausible explanations. The programs may in fact have increased connectedness to caring adults (some of whom may have expressed clear norms about avoiding unprotected sex). However, other characteristics of service learning may very well also have reduced sexual risk-taking. For example, they may have increased autonomy, or they may simply have occupied a fair amount of discretionary time during which the students might have otherwise been unsupervised at home and might have engaged in unprotected sex.

The fourth group of effective programs actually included only one type of program—the CAS-Carrera program—implemented in multiple sites.[8] The CAS-Carrera program delayed sex, increased long-term contraceptive use, and reduced both pregnancy and childbearing among female adolescents. Notably, this program has stronger evidence that it actually reduced teenage pregnancy and childbearing for three years than any other program.

The program was a long-term, intensive one that recruited youth when they were about 13–15 years old and encouraged them to participate almost daily throughout high school. Its components included family life and sexuality education; academic support (e.g., tutoring); employment; self-expression through the arts; sports; and health care. For female teenagers, the program expressed clear norms about abstinence and contraceptive use by encouraging participants to avoid sex or to use contraceptives, by providing role-playing in the sexuality education class, and by helping sexually active young women obtain long-acting contraceptives from the health clinic.

A critical aspect of the CAS-Carrera program was that the staff very consciously tried to develop close relationships with the teenagers. In some cases, they almost became surrogate parents. Thus, part of this program's success may have been caused by this greater attachment to adults with clear values against unprotected sex.

In addition to these four groups of programs with especially strong evidence for success, other scattered programs have been found to be effective, but have less strong evidence. Several are noteworthy. First, in a small, rural South Carolina community, teachers, administrators and community leaders were given training in sexuality education; sexuality education was integrated into all grades in the schools; peer counselors were trained; the school nurse counseled students, provided male students with condoms and took female students to a nearby family planning clinic; and local media, churches and other community organizations highlighted special events and reinforced the messages of avoiding unintended pregnancy.[9] Thus, messages about avoiding sex and practicing contraception if youth are sex-

ually active were reinforced in a number of ways.

Evaluations indicate that this program reduced the pregnancy rate among young teenagers, and when parts of the programs and the clarity of the expressed norms diminished, the pregnancy rate returned to preprogram levels. This model was replicated in several towns in Kansas. However, in that replication, the forcefulness and clarity of the message may have been lacking, and the results measuring the impact of the program were mixed.[10]

While most studies of school-based and school-linked health centers revealed no effect on student sexual behavior or contraceptive use, two had some evidence of increased contraceptive use.[11] Notably, one was run by Planned Parenthood and the other provided reproductive health services only. Thus, both focused upon sexual behavior and both gave a clear message about remaining abstinent or using contraceptives. In at least one of the two programs, independent observers commented upon how charismatic the staff were and how well they were able to connect with youth.

Two media initiatives appear to have had an impact upon behavior. One, *Not Me, Not Now,* was not summarized in *Emerging Answers*, because a prepublication draft arrived only after the book had been written. *Not Me, Not Now*, which focused upon young teenagers, gave a clear message about delaying sex and appeared to delay the onset of sexual intercourse among these youth.[12] The program had young people from the community try out for parts in the television advertisements, which then aired for five years. Thus, they represented the community, and many young people commented that they were credible. The advertisements were reinforced by posters, classroom activities, parent materials, a Web site and community events.

The other media initiative targeted high-risk youth and encouraged them to use condoms.[13] Three public service announcements were aired multiple times on television, condom vending machines were installed in locations recommended by youth, and teenagers were trained to facilitate small-group workshops that focused on decision-making and assertiveness skills. The public service announcements were designed to appeal to teenagers. Multiple community surveys indicated that the initiative increased young people's condom use with casual sex partners while the campaign aired. After the campaign ended, condom use with casual sex partners returned to previous levels.

Finally, a completely different kind of program was specifically designed to increase connectedness to families and schools and to thereby reduce a variety of risk behaviors (e.g., substance use, unprotected sex, school dropout and delinquency). Thus, it provided a particularly direct test of the importance of the second construct in this social norms–connectedness framework.[14] Research demonstrated that the program was effective at increasing attachment to school and decreasing sexual activity, pregnancy and delinquency over many years.

Evidence Among Parenting Teenagers

While *Emerging Answers* did not review studies of programs designed to reduce repeat pregnancy or childbearing among teenagers who were already parents, such studies also support the importance of norms and connectedness. Since the mid-1980s, at least 17 programs designed to help pregnant and parenting teenagers have been studied.[15] Many provided prenatal care, parenting training and case management services more generally.

Eight of these 17 studies found that the programs significantly delayed a second birth; of these eight, five included repeated visits by program staff to the teenage mothers' homes. In addition, all five programs that included home visits delayed repeat pregnancies. These repeated one-on-one visits to the teenagers' homes allowed the staff to develop closer relationships with the young mothers (to become more connected), and more than one of the papers talked about both the closeness of that relationship and its importance.[16] Several studies also emphasized the clear norms these staff expressed about avoiding repeat pregnancies.

Discussion

The social norms–connectedness framework not only focuses on norms and connectedness as being important in affecting behavior, it also recognizes the interaction between them. If a group has clear norms for (or against) sex or contraceptive use, then adolescents associated with this group will be more (or less) likely to have sex and use contraceptives. However, the impact of the group's norms will be greater if the adolescents are closely connected to this group than if they are not.

This quite simple framework appears to partially explain a remarkably large number of the findings reported in *Emerging Answers,* many of which (although not all) were consistent with this framework. Innumerable studies demonstrated that the norms of individuals to whom teenagers are attached (e.g., family members, close friends and romantic partners) were strongly related to and consistent with the adolescents' own sexual and contraceptive behavior. In addition, when youth were more connected to groups or institutions that typically have or express values against adolescents' engaging in sex or unprotected sex (e.g., their families, schools and faith communities), they were less likely to engage in sex or unprotected sex. When they were more connected to groups or individuals typically with more permissive values (e.g., peers or boyfriends or girlfriends, especially older boyfriends or girlfriends), then they were much more likely to engage in sex.

When the sexuality and HIV education programs, the clinic protocols, the school-based or school-linked clinics, the CAS-Carrera programs and media campaigns expressed clear norms about sexual and contraceptive behavior, program participants were more likely to act in a manner consistent with those norms. Furthermore, when staff developed much stronger relationships with youth over time, as they did in the CAS-Carrera program and possibly in one of the service learning programs, the effects were particularly strong and dramatic. Finally, studies of programs to reduce repeat pregnancies among parenting teenagers also support the importance of social norms and connectedness. In contrast, when sexuality and HIV education programs, clinic protocols, and school-based or school-linked clinics failed to give a clear message, then they were not effective.

There are numerous other examples of research findings that are partially explained by this social norms–connectedness framework, but space does not allow their presentation here. Thus, this framework appears to have considerable explanatory power; it helps us understand a wide variety of research findings.

On the other hand, the importance of social norms and connectedness should not be exaggerated. There are innumerable theories to explain adolescent sexual risk-taking; one volume named 17,[17] and *Emerging Answers* identified more than 100 risk and protective factors associated with sexual behavior. Each of these theories and factors also contributes to our understanding of adolescent sexual behavior, and many do not involve either connectedness or norms (e.g., communi-

ty opportunity and poverty; parental monitoring and supervision of adolescent children; hormone levels; substance use; emotional well-being; and self-efficacy to refrain from sex or to insist upon contraceptive use). Consequently, addressing these other risk and protective factors is necessary if we are to dramatically reduce sexual risk-taking.

In addition, programs that were effective at changing behavior did more than just change norms; some increased self-efficacy and improved other determinants of sexual risk-taking. Furthermore, there are probably some programs that do not address either norms or connectedness and yet are effective at reducing sexual risk-taking (some service learning programs might be one example). Finally, program staff can impart knowledge, teach skills, increase opportunity and improve other risk and protective factors even if they are not well connected to the targeted adolescents (although they may be more effective in these endeavors if they are well connected).

Thus, the social norms–connectedness framework does not explain everything, but it remains noteworthy that it does partially explain a large and diverse group of findings.

Limitations of the Evidence

There are at least two important limitations of the evidence reviewed here. First, research studies do not provide objective measures of the extent to which programs present a clear message and convey desirable social norms, nor do studies provide objective measures of the extent to which program leaders or educators can relate to youth and form connections with them. Sometimes program staff may believe that they are giving a clear message, but they actually fail to do so; sometimes a curriculum may be designed to give a clear message, but the educators obfuscate that message. Thus, even though some curricula described much clearer messages than others and even though some programs described their efforts to employ educators who relate well to youth, it is impossible to know for sure which programs gave clear messages and which programs were implemented by educators who could connect with youth.

Second, I have reviewed here all the major groups of programs that *Emerging Answers* found to have substantial evidence supporting their effectiveness, as well as some individual programs with less-strong evidence and some aimed at reducing repeat pregnancy. However, I have not reviewed every program, and undoubtedly some programs and some findings are not explained by this framework or do not support this framework

Implications for Future Work

This social norms–connectedness framework has implications both for research and for practice. Despite the many studies that have measured the relationship between norms and behavior, additional research could profitably be undertaken. Few, if any, studies in this field have measured the full impact of norms and connectedness upon adolescent sexual behavior, for two reasons: First, few have measured simultaneously the impact of family, peer and partner norms upon sexual behavior; in addition, few studies have measured the impact of the norms of each of these groups or individuals while simultaneously measuring the adolescents' connectedness to each of those groups or individuals. In fact, not very many studies have even measured the various components of connection or determined which components are most important. Thus, the total amount of variance in behavior that can be explained by norms and connectedness and their interaction is not really known.

In addition, as noted above, little if any research reports either objective or subjective measures of the clarity of the norms promoted in sexuality and HIV education classes or the connectedness between program staff and adolescents. Thus, the development and reporting of these measures may also advance the field.

In terms of practice, there is a substantial literature in health education (and in other fields as well) on how to change norms. For example, communities can use mass media (e.g., soap operas or public service announcements) to portray desirable behavior. Programs can use attractive models similar to the targeted group to give reasons for desirable behavior and to model behavior. Programs can mobilize friends and opinion leaders to take a public stance on certain issues. Sexuality and HIV education programs can use role-playing and small-group activities to reinforce norms. Organizations can conduct anonymous surveys of youth to demonstrate that most youth believe that they either should not have sex or should always use protection. And programs may be able to help parents (or families more generally) express their values clearly and model more responsible sexual behavior. This literature can help people design more effective programs. On the other hand, there is undoubtedly much yet to be learned about how to change norms.

Others have developed theories for increasing connectedness. For example, David Hawkins and his colleagues have theorized that youth will become more connected to school when they have greater opportunity for involvement, develop the skills to be successful in school activities and are recognized and rewarded for their success and achievements.[18] Relatively few programs have focused upon connectedness, and the literature on how to increase connectedness is less well developed. More can also be done in this area.

Developers of programs should be aware of the importance of giving a clear message, of trying to get youth to adopt responsible norms, of increasing connectedness between staff and youth, and of increasing connectedness between youth and other youth or adults who express clear, responsible norms.

Conclusions

Behavioral theorists have long recognized the influence of norms upon behavior, and for decades at least, practitioners have tried to use the media, group opinion leaders, and small-group or other interactive activities in sexuality and HIV education classes to change norms and to thereby change behavior. In addition, for a variety of reasons, people have tried to increase connectedness between youth and their families, schools and faith communities. Thus, simply recognizing that norms and connectedness influence behavior is not new.

However, what is striking—to me, at least—is the extent to which social norms, connectedness and their interaction partially explain so many research findings involving both risk and protective factors and the impact of programs. While no single theory can explain all findings on adolescent sexual behavior (adolescent sexual behavior is just not that simple), these constructs appear remarkably powerful. Perhaps if we measure them better and focus upon them more, they can lead to the development of still more effective programs.

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