



Sexual Risk and Protective Factors

Factors Affecting Teen Sexual Behavior, Pregnancy, Childbearing And Sexually Transmitted Disease: Which Are Important? Which Can You Change?

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Introduction

Nearly half of U.S. high school students (9th-12th graders) have had sexual intercourse and over 60 percent report having had sex by the time they graduate.¹ This demonstrates that many adolescents are confronted at some point during their teen years with choices about whether or not to have sex and, if they do, whether or not to use condoms and/or other contraceptives. Many factors affect those choices. Parents, educators, and other adults working with youth have learned that they cannot directly control the sexual behavior of teens. While parents might wish to monitor their sons or daughters 24 hours a day to prevent them from having sex, or at the very least, unprotected sex, they cannot do this. Instead, parents and others concerned about youth can only try to affect those factors that, in turn, affect the sexual decision-making of young people. For example, they might try to affect factors such as the teens' values about sexual behavior, their perceptions of family values and peer norms about sex, their attitudes about condoms and other forms of contraception, their educational and career plans, or their connection to their parents, their schools, and their faith communities, all of which are likely to affect whether or not teens have sex and whether or not they use protection against pregnancy and sexually transmitted disease (STD).

Understanding important factors related to sexual behavior is important not only to change that behavior; it is important to identify those teens who are most at risk of having sex and unprotected sex. First people can use these factors to identify those teens at greater risk; then they can address the important factors affecting their behavior.

This report identifies many of these factors and explains their implications for those working to help youth avoid risky sexual behaviors and potential consequences.

In this report, the relevant factors are divided into two categories: risk factors and protective factors. "Risk factors" are those that encourage one or more behaviors that might lead to pregnancy or sexually transmitted disease (e.g., initiating sex at a young age or having sex frequently and with many sexual partners) or discourage behaviors that might prevent pregnancy or sexually transmitted disease (e.g., using contraception, or condoms in particular). Similarly, "protective factors" are those that do just the opposite – they discourage one or more behaviors that might lead to pregnancy or STD or encourage behaviors that might prevent them.

The words "encourage" and "discourage" are used because they imply causality, and causality is important, because the goal of most interventions is to change behavior. That is, if a factor is only correlated with a behavior but does not actually affect that behavior, then changing the factor will not change the behavior. (Note that causality is not important when using risk and protective factors to simply identify teens at greater risk of pregnancy and STD.)

All factors included in this report were found to be associated with certain behaviors and must have been present *before* that behavior occurred. Consequently, often, but not always, they *causally* affect that behavior. In addition, either research or common sense

¹ Centers for Disease Control and Prevention. *Surveillance Summaries*, May 21, 2004. MMWR 2004;53(No.SS-2).

sometimes tells us that particular factors are, in fact, *causally* related to certain teen sexual behaviors. For example, hormonal changes and puberty are factors causally affecting sexual initiation, because common sense tells us these phenomena increase young people's sexual desire, increase their sexual attractiveness to others, and increase their chances of having sex. Similarly, having less permissive attitudes toward premarital sex may directly affect decisions about having sex at an early age. However, sometimes causality (as opposed to mere association) is not well-established by research or assumed through common sense. For example, smoking cigarettes is *associated* with having first sex at a younger age, but it is unlikely to *cause* early intercourse. Instead, youth who engage in a variety of risk-taking behaviors may be more likely to smoke cigarettes and to have first sex earlier.

Unfortunately, it is difficult for research to demonstrate causality. Thus, for some of the factors discussed in this report, it is not certain whether the factor causally affects a behavior or is simply correlated with it. Where causality is especially uncertain, it will be noted.

If parents and other adults concerned with youth cannot directly change behavior and can only address risk and protective factors, an important question arises: Which risk and protective factors should they target in order to affect sexual behaviors and reduce teen pregnancy and/or STD rates?

In terms of preventing pregnancy or sexually transmitted disease, neither risk factors nor protective factors are inherently more important to address than the other. Instead, if people wish to reduce teen pregnancy or sexually transmitted disease, then they should address those risk and protective factors that meet two criteria:

1. They have a significant causal impact on one or more sexual behaviors affecting the incidence of teen pregnancy or STDs.
2. The factors, in turn, can be markedly changed by parents or other people or organizations concerned with this issue.

Logically, if a risk or protective factor satisfies only one of these two criteria, it is not worth targeting. For example, if a factor can be changed but does not affect sexual behavior, then changing that factor will not reduce pregnancy or STD rates. Similarly, if a factor does affect sexual behavior but cannot be changed markedly, then it is not useful to pursue either. Thus, both criteria for selecting a factor must be met, before people should target that factor to prevent pregnancy or STD.

This conclusion raises two very important questions:

1. Which factors have the greatest causal impact on adolescent sexual behaviors?
2. Which factors can be changed the most?

This report attempts to answer both questions, especially the first.

Methodology

For many years, researchers have attempted to determine which behaviors affect teen pregnancy and STD transmission and to identify the risk and protective factors related to both. Not surprisingly, pregnancy is primarily affected by the initiation of sex, the frequency of sex, and the use of contraception (See Figure 1). Similarly, the transmission of sexually transmitted disease is primarily affected by the initiation of sex, the frequency of sex, the number of sexual partners, and the use of condoms.² Because of the importance of risk and protective factors, researchers have published hundreds of studies evaluating the impact of risk and protective factors on these five behaviors and on teen pregnancy, childbearing and STD transmission.

This report summarizes the results of those studies that meet the following criteria. Studies included here had to:

- Be conducted in the United States
- Examine the impact of factors on the following behaviors: initiation of sex, frequency of sex, number of partners, condom or other contraceptive use, pregnancy, childbearing, or sexually transmitted disease
- Be based on a sample of teenagers, roughly 18 years of age or younger
- Have a sample size of at least 100 for significant results and a sample of at least 200 for non-significant results
- Meet scientific criteria required for publication in professional peer reviewed research journals or other publications
- Be published between 1990 and 2004 inclusive
- Include multivariate analyses

In fact, the vast majority of these studies had much larger sample sizes; many also conducted multivariate statistical analyses statistically controlling for numerous other relevant factors. These analyses helped identify those factors that were the most important.

To identify studies meeting these criteria, ETR Associates and the University of Minnesota exhaustively reviewed computerized databases of references³, searched all issues of many important journals, reviewed the references in previous reviews of risk and protective factors, and searched their own files. Ultimately, they identified more than 400 studies of risk and protective factors meeting the above criteria.⁴ All of them were

²The transmission of sexually transmitted diseases is, of course, also determined by whether a sexual partner has an STD, which is affected by testing and treatment. However, because this review focuses on prevention, testing and treatment of STDs are beyond its scope.

³ These databases included Medline, Sociological Abstracts, Psychological Abstracts, Popline, Bireme, PsychInfo, Dissertation Abstracts, ERIC, CHID, Biologic Abstracts, PERRY (CDC) and the Alan Guttmacher Institute database.

⁴ A substantial number of these studies were secondary analyses of well-known samples, such as the National Longitudinal Study of Adolescent Health, the Youth Risk Behavior Surveys, the National Survey of Family Growth or the National Longitudinal Survey of Youth. These studies benefit from being based on large, nationally representative samples. However, this also means that results from different studies of the same samples are not completely independent. For example, different secondary analyses of the National Longitudinal Study of Adolescent Health may be based on the same sample or on overlapping

reviewed for this study and are listed as references in Matrix in the appendix of this report. (The University of Minnesota also reviewed studies conducted in developing countries.⁵)

Which Factors Affect Teen Sexual Behavior?

This review provides an overview of the factors affecting adolescent sexual and contraceptive behavior and the potential outcomes, such as pregnancy, childbearing and sexually transmitted disease. It is not designed to be a thorough analysis of any particular factor.

The matrix of risk and protective factors in the found at the end of this document identifies all the potential factors that were analyzed in the studies⁶. Thus, it includes those that one or more studies have found to be related to sexual behavior, as well as those that proved unrelated to sexual behavior.

That matrix reveals that there are more than 400 different factors that affect one or more of the five important teen sexual behaviors (initiation of sex, frequency of sex, use of condoms, use of other contraception, and number of partners), and/or outcomes (pregnancy, childbearing or STDs).

It is important to keep in mind that some of the factors included in the matrix might have been significant for only particular groups of youth, might have been significant only at particular points in time, might have been significant only when the factor was measured in a particular way, and/or might have been significant only when other factors were (or were not) controlled in a study. It is also possible that some of the factors were found to be significant only because of chance. On the other hand, many of the factors included in the matrix were significant in multiple studies, with many groups of adolescents and at different times.

It should also be emphasized that, although these factors increase or decrease the chances of individuals engaging in sexual risk-taking, nearly all youth experience pressures of some kind to have sexual intercourse and are at risk for pregnancy and STD. It is not the case that only one group of teens, only one ethnic group, only low-income youth, only youth in a particular neighborhood, or only youth in “other” schools engage in sex and become pregnant or contract an STD. Sexual activity, pregnancy and sexually transmitted disease cut across all of these perceived boundaries. Nevertheless, as the

sub-samples and, thus, do not provide independent confirmation of particular findings. Some of the studies were based on much smaller, less representative samples, but they sometimes examined the impact of a wider range of risk and protective factors.

⁵ Blum, R. and Mmari, K.(2005). Risk and Protective Factors Affecting Adolescent Reproductive Health in Developing Countries. Division of General Pediatrics and Adolescent Health, Center for Adolescent Health. University of Minnesota: Minneapolis, MN

⁶ Because Matrix provides references for each entry in the table, references are not provided for all the statements in the report’s text that are based on Matrix.

number of risk factors in a teen's life increases and as the number of protective factors decreases, that teen's chances of having sex and becoming pregnant (or causing a pregnancy) or contracting an STD increase.

Some of the 400 plus factors are characteristics of the teens themselves; others are characteristics of their families, romantic partners, peers, schools, faith communities, their communities more generally, and even their states. Still others describe the teens' relationships with these individuals, groups, or institutions in their environment. Some factors involve sexuality directly (e.g., values about sexual behavior); while others do not (e.g., connection to parents). Some are risk factors (e.g., community disorganization or permissive attitudes towards sex); others are protective factors (e.g., doing well in school). Together, they paint a detailed picture of the factors that affect sexual behavior among teens and its potential consequences.

Because so many factors affect teen sexual behavior, focusing on only one factor is unlikely to have much impact on teens' sexual behavior unless that factor is an *extremely* important one. Targeting several important factors is a more promising approach.

To that end, the large number of factors in the matrix can be better understood when: 1) the most important factors are identified, 2) the dominant themes among the factors are recognized, and 3) their causal structure is better understood. Understanding the causal structure will also help program designers who create logic models to design their programs. These three topics are discussed in order below.

Most Important Factors Affecting Sexual Risk Behavior

Table 1 includes factors from the larger matrix that have the strongest and most consistent evidence of significantly affecting teen sexual behavior. To be included in Table 1:

1. The overall pattern of results across studies indicating that a particular factor is a significant risk or protective factor for any particular behavior could not have occurred by chance.
2. Of the studies measuring impact of a factor on any behavior, at least two-thirds of the studies had to consistently show that a particular factor was a risk factor (or a protective factor) as opposed to being not significant or having significant results in the opposite direction. This "2 to 1" rule excluded many factors, but increased the chances that a factor would be important in each community.
3. There had to be at least 3 multivariate studies consistently supporting the conclusion that a particular factor was a risk (or protective) factor for the same behavior. At least one of these studies had to have a large sample size.
4. There had to be a reasonable chance that the factor had a causal impact on behavior that was not questioned by the results of multiple studies.

Although these criteria are relatively objective, the authors' judgment occasionally had to be used for a small number of factors. Furthermore, as additional research is completed, factors may need to be added to or deleted from Table 1 in the future.

Consistent with Matrix, Table 1 includes factors related to the teens themselves, their states, communities, families, peers, partners, and, of course, themselves. These factors support a wide variety of theories about risky adolescent sexual behavior — theories involving social disorganization in their communities, theories involving parenting practices and parent values about adolescent sexuality, biological theories, theories suggesting that sexual risk taking is part of a larger syndrome of risk-taking or deviant behavior, and social psychological theories of rational behavior. Overall, the factors summarized in these tables clearly demonstrate that no single theoretical perspective is sufficient; the total picture is much more complex.

Environmental Factors

Community characteristics. The communities that teens live in influence their sexual behavior. In particular, if communities are disorganized – if they have higher rates of substance use, violence and hunger – then teens in those communities are more likely to engage in sex earlier and to have higher rates of childbearing.

In addition, if teens live in communities with higher rates of foreign-born residents, then they are more likely to delay initiation of sex. According to at least one study, this may reflect the less permissive sexual values of the foreign-born parents.

Although this section of this review is focusing on the factors that were consistently found to be related to sexual behavior, it is worth noting here a factor that was not consistently related to behavior and possible explanations for this lack of consistency. Even though average household income in a community (or its inverse – poverty) is commonly believed to be related to teen sexual behavior and its outcomes, the results in Matrix do not fully support this view. Thirteen studies produced 30 results in the matrix that measured the impact of average income (or socio-economic status) on sexual behavior or its consequences. Only 6 of the 30 found it to be a protective factor, 15 of them found it to be insignificantly related to behavior, and 5 found it to be a risk factor. Why? First, an analysis of a few of the studies indicated that average household income or other measures of poverty may have been markers for a larger constellation of factors, e.g., educational level, unemployment, employment opportunities, and when many of these factors were included, the explained variance was divided among them and the impact of each was reduced. Second, when only community factors were included in the multivariate analyses, average income level/poverty was more often a risk factor, but when family or individual characteristics were included, the community factors sometimes ceased being significant. That is, the family or individual factors appeared to be more important than the community factors. And finally, average income level/poverty may have been a more important factor for females than for males. For example, of five studies that measured impact of average community income on actual birth rates, four found it to be a protective factor for childbearing, but of two studies measuring impact of average income on males reporting whether or not they were fathers, both found no impact. This gender difference may reflect actual difference in the impact of community income/poverty on parenting or it may reflect different methods of measuring birth rates (actual community birth rates versus self reports by males).

Family characteristics. The characteristics of teens' families also are very important in determining risk. When teens live with both parents and enjoy close relationships with them, they are less likely to have unprotected sex and become pregnant. More specifically, when teens live with both biological parents (instead of only one parent or step-parents), they are less likely to have sex, have sex less frequently, and have fewer sexual partners. A majority of studies (but not two-thirds) also demonstrate that they are less likely to become pregnant (or cause a pregnancy) or give birth (father a child). Finally, if parents divorce or separate, their teens are more likely to initiate sex at an early age than if their parents do not divorce or separate.

When teens have parents with higher levels of education, they are less likely to become pregnant than are teens with parents who have lower levels of education. A majority (but not two-thirds) of the studies also found that they were less likely to initiate sex at an early age. When teens have parents with higher income, a majority of the studies found that the teens were less likely to become pregnant or to bear children. These findings involving parents' education and income may be due to the increased emphasis that some parents place upon obtaining an education, pursuing a career, and avoiding early childbearing; and/or in part to the greater resources they have to support their teens in these pursuits.

If teens experience considerable parental support and feel connected to their parents, they are less likely to initiate sex at an early age and have sex less frequently. If parents monitor and supervise their teens appropriately, then those teens have fewer sexual partners than if their parents do not monitor them (or, according to at least one study, monitor them too excessively). At the extreme, if teens have been maltreated and physically abused by their families, then they are much more likely to have sex at an early age and to become pregnant.

If family members abuse alcohol or illegal drugs, then teens have sex more frequently and with more partners. Family substance abuse may encourage youth to drink and use drugs themselves (which may lead to more frequent sex with more partners), or family substance abuse may simply be a marker for more general family dysfunction that may lead to teen sexual activity.

If family members, especially parents, express values or model behavior consistent with sexual risk taking or early childbearing, teens are more likely to have unprotected sex and become pregnant (or get their partners pregnant). Parents may do this in a variety of ways, including conveying permissive attitudes about premarital sex or teen sex, voicing negative attitudes about contraception, or by having been teen parents themselves. Similarly, if teens' older siblings model early sex or childbearing, then the teens are more likely to have sex at an earlier age. In contrast, if parents disapprove of teens having sex, then teens are less likely to have sex, and if parents support contraceptive use, then teens are more likely to use contraception if they do have sex.

If parents communicate their beliefs and values about sex, condoms and other forms of contraception, then under some circumstances this communication may lead to less sexual risk-taking. When parents have conversations with their children about sex and contraception well before their teens become sexually active, the conversations may delay the initiation of sex or increase the use of condoms or other contraceptives. This

effect is most likely to occur when the teen is a daughter (as opposed to a son), when the parent is the mother (as opposed to the father), when the teens and their parents feel connected to one another, when the parents disapprove of teens having sex or support contraceptive use, and when parents can discuss sexuality in an open and comfortable manner.

Peer characteristics. As is commonly recognized, youth are influenced by their peers and peers influence teens' sexual behavior. If peers are older, receive poor grades, use alcohol or drugs, or engage in other negative behavior, then the teens are more likely to have sex. When teens believe that their peers have more pro-childbearing attitudes, have permissive values about sex, or are actually having sex, then they are much more likely to have sex too. If teens believe their peers support condom or other contraceptive use or actually use condoms, they are more likely to use condoms or other contraceptives themselves.

Characteristics of romantic partners. While simply having a romantic partner increases the chances of sexual activity, having an older romantic partner increases them even further. Having an older romantic partner also decreases the chances that contraception will be used and increases the chances of pregnancy and contracting a sexually transmitted disease. If teens' partners support condom or contraceptive use, then the teens are more likely to use them if they have sex.

Individual Factors

Biological factors – age, physical development and gender. When considering teens themselves, studies have found that biological factors dramatically affect their sexual behavior. As one might expect, as youth become older, they become much more likely to have sex. If they physically mature early, begin menarche early, and appear older than their age, they are also more likely to initiate sex at an earlier age.

Some of the effects of factors related to age are strictly biological, including physical maturity and higher testosterone levels, which may lead to a greater desire for intimacy and sex and/or to greater sexual attractiveness. Other factors are social, such as, increased pressure from peers to have sex; changes in perceived norms about sexual and contraceptive behavior; and increased opportunities to have sex that come with greater freedom and independence as one ages.

In addition, as youth get older, they become more likely to have sex more often and with more partners. They also become more likely to use contraception. When teens first have sex, they are more likely to use condoms (in part because they have sex sporadically), and as they become older, they are more likely to use longer-lasting forms of contraception (e.g., oral contraceptives or Depo Provera). As teens grow older, they are also more likely to become pregnant (or to impregnate someone) and to parent a child. (Because more teens have sex as they grow older, they become more likely to become pregnant, even though they are also more likely to use contraception.) According to half the studies, the risk of contracting an STD also increases as teens grow older. Although younger teens are physically more susceptible to contracting some STDs, as youth grow older, their number of sexual partners increases and they become more likely to contract an STD.

Another very important biological factor is sex/gender. Overall, males initiate sex earlier than females, report more sexual partners, and greater use of condoms. However, females are more likely to contract sexually transmitted disease.

Both age and gender interact with other factors. For example, although having an older romantic partner increases the chances of having sexual intercourse, this factor is more potent for younger teens (e.g., in middle school) than for older teens (e.g., in high school). This factor is also more important for females than for males.

A practical implication of these individual biological factors is that there are some important factors that simply cannot be changed. However, agencies working with youth can still use these factors to identify youth who may be at greater risk of sexual risk-taking. Furthermore, agencies can change some factors associated with the biological factors, e.g., perceptions of gender roles or expectations of sexual activity for different age groups.

Race/ethnicity. Compared to non-Hispanic whites, African Americans are more likely to have sex at an earlier age, to have more sexual partners, to become pregnant, to give birth and to contract an STD. However, research findings are mixed regarding condom use, with a few studies indicating that African American teens are more likely to use condoms than whites.

Compared to non-Hispanic whites, Hispanic teens are less likely to use contraception and are more likely to become pregnant. However, most studies indicate they are not more likely to have sex at an early age.

It is important to note that when controlling for family or community education, employment or income, some of the relationships between race/ethnicity and teen pregnancy diminish. That is, it is not simply minority status per se that affects teen sexual behavior, pregnancy and STD risk, but rather the poverty and lack of opportunity that is often associated with being a member of those minority groups. However, the relationship between minority status and sexual behavior or teen pregnancy does not entirely disappear when controlling for socio-economic status. Cultural values (e.g., greater emphasis on the family, greater acceptance of early childbearing, expectations of submissiveness to males) and other factors also contribute.

Connection to family. Connection to family is both an individual characteristic and a family characteristic. It is discussed above under family characteristics.

Connection to school and success in school. When teens stay in school, feel connected to their schools, earn good grades, do not fall behind in school, have plans for higher education beyond high school, and/or avoid problems in school, they initiate sex later and are less likely to become pregnant (or get their partners pregnant). If they earn good grades, they are also less likely to parent a child.

While several studies have found that involvement in school organizations is related to lower levels of sexual risk-taking, a methodologically strong study of the impact of involvement on teen non-marital childbearing found that mere membership in school organizations was not related to early childbearing. However, a substantial level of

involvement in school organizations was related, particularly in school-based religious organizations among whites and school clubs among African Americans.

Connection to faith communities. Teens who describe themselves as more religious, who attend religious services more frequently, and who have a stronger religious affiliation are less likely to initiate sex. They also have sex less frequently if they do have sex. These associations are particularly strong if the teens are involved with faith communities with conservative values about sexual behavior.

However, in all of these cases, the direction of causality is not entirely clear. Just as attachment to faith communities may affect sexual behavior, sexual behavior may also affect attachment to faith communities. For example, teens who have had sex may feel less comfortable in places of worship and may be less likely to attend services.

Connection to other community organizations or adults. A few studies suggest that when teens are more involved in their communities and have mentors, they are less likely to engage in sexual behavior.

Involvement in gangs. Several studies suggest that teens who belong to gangs are more likely to have sex, to have more sexual partners, and to become pregnant. It is not clear whether gang membership per se produces this risk or simply the fact that teens in gangs have other risk factors.

Alcohol and drug use. Numerous studies have found relationships between teens' use of alcohol and illegal drugs and increased likelihood of having sex, having sex more often, having sex with more partners, and pregnancy. Studies have also found that those teen who use drugs are less likely to use condoms and more likely to contract an STD. It is plausible that drinking alcohol and using drugs may lower inhibitions, reduce ability to assess risks, or increase sexual aggression. However, it is also possible that part or all of the measured relationship between alcohol and drugs and sexual activity and condom use is caused by other common factors, such as poor performance in school, general risk-taking or sensation-seeking propensities, lack of parental monitoring, etc. One study attempted to control for some of these factors and found that, when other variables were controlled, use of alcohol and other drugs was not related to sexual activity for either gender, nor was it related to use of female methods of contraception. However, drinking alcohol was negatively related to male use of condoms. Another study found that, while both alcohol and drug use in the past was related to condom use, alcohol/drug use during last sex was *not* related to use of condoms at that time. This suggests that a more general mechanism of taking risks may explain the relationship, rather than disinhibition caused by substance use at the time of sex. Still other studies either have found no relationship between substance use and sexual risk-taking or failed to find significant relationships when other factors were statistically controlled. Although alcohol and other drug use are included in Table 1, this caveat about questionable causality should be kept in mind.

Aggression. Physical fighting and carrying weapons are also related to having sex, more sexual partners and pregnancy. Causality is unclear.

Involvement in problem or sensation-seeking behavior. Engaging in other problem or sensation-seeking behavior is also related to early initiation of sex, frequency of sex,

pregnancy and childbearing. Again, these behaviors may expose teens to norms favoring sexual risk-taking or more opportunities or desires to have sex. Alternatively, the relationship between problem behavior and sexual risk-taking specifically may simply reflect family or community characteristics such as poverty, single parent homes, lack of supervision or general risk-taking propensities. Again, causality is not entirely clear.

Paid work. Several studies have indicated that teens with paying jobs, especially those who work more than 20 hours per week, are more likely to have sex. This may be because it increases both the teens' sense of independence, mobility, and opportunities to have sex.

Involvement in sports. A few studies have found that, for teen girls, but not teen boys, participation in sports is related to delayed initiation of sex, less frequent sex, greater use of contraception, and lower pregnancy rates. These studies suggest that young women's participation in sports motivates them to want to avoid pregnancy, which, in turn, delays initiation of sex. However, among young women, the relationship between participation in sports and *pregnancy* is less clear. It may be caused by the fact that female athletes are more likely than non-athletes to be young, better educated and non-Hispanic white, characteristics that reduce their risk of becoming pregnant.

Cognitive and personality traits. Teens with a higher level of cognitive development are less likely to have sex and more likely to use contraception if they do have sex. Teens with a greater internal locus of control have sex less frequently, use condoms more frequently, and are less likely to become pregnant. Plausibly, both factors are causal.

Although high self-esteem and positive self-concept are commonly believed to be protective factors for sexual risk-taking, the results are actually quite mixed. A few studies, including some with large nationally representative samples, have found that self-esteem and positive self-concept are protective factors for initiation of sex, use of contraception and pregnancy, the rather large majority of studies that self-esteem and self-concept were not significantly related to sexual behavior. A few studies have found self-esteem to be protective only for girls or only for middle school (as opposed to high school) students. Finally, at least one study even found that having sex can increase self-esteem. Thus, the relationships between these factors and sexual behavior are unclear and may be quite complex.

Conversely, suffering from emotional distress (including stress, depression, thoughts of suicide or fear of untimely death) increases teens' chances of having sex. Such distress may affect teens' motivation to avoid pregnancy or STDs, diminish their ability to assess risks, or lead them to want to escape through sexual involvement. Alternatively, these factors may also reflect more negative environments that actually cause sexual risk-taking.

Sexual beliefs, attitudes and skills. Of all the risk and protective factors, teens' own sexual beliefs, values, attitudes, and skills are the factors most *strongly related* to sexual behavior. Teens are more likely to have sex if they have permissive attitudes toward premarital sex, perceive personal and social benefits and few costs to having sex, would feel guilt if they had sex, took a virginity pledge and have greater self-efficacy to refrain from sex. Sexually active teens are more likely to use condoms and other forms of

contraception if they perceive that males share responsibility for pregnancy prevention, believe that condoms do not reduce sexual pleasure, believe their partner will appreciate their condom use, have positive attitudes towards condoms and other forms of contraception, perceive more benefits and fewer costs and barriers to using condoms, have greater confidence in their ability to demand and use condoms or other forms of contraception, have greater motivation to use condoms or forms of contraception and to thereby avoid pregnancy and HIV/STD, intend to use condoms, and actually carry condoms.

All of these sexual beliefs, attitudes, skills and motivations can be considered "proximal" factors that affect sexual behavior. This is because they are conceptually and logically closely linked to their related behaviors. For example, values regarding sex are conceptually more closely related to actually having sex than is the proportion of the community that is foreign born. The latter is considered more "distal."

While both common sense and research indicate that these factors have an impact on sexual behavior, it is also true that having sex and using or not using condoms and other contraceptives may very well affect these factors. For example, having sex and using condoms may affect attitudes about having sex, perceptions of peer norms about sex, and perceived ability to use condoms. Thus, causality may operate in both directions.

These proximal sexual factors are particularly important for several reasons. First, they are well supported by social psychological theory. Second, they are conceptually more closely related to their sexual and contraceptive behaviors than are other factors. Third, as noted above, they are more highly related statistically to some of the sexual and contraceptive behaviors than are most of the other factors. Finally, some of these factors have formed the theoretical basis for many of the sex and HIV education programs that have reduced sexual risk taking.

Relationships with romantic partners and previous sexual behavior. Not surprisingly, when teens begin dating frequently, go steady, and kiss and neck, they are more likely to have sex. These early romantic relationships may provide greater desire, opportunity, and pressure to have sex. Furthermore, sex within a romantic relationship may be more consistent with teens' values and perceived norms than sex in casual relationships.

When the romantic partner of a teen is three or more years older, then the teen is especially likely to have sex. The impact of this age gap is quite large, especially among middle school girls.

Youth who begin having sex at an earlier age may naturally accumulate a greater number of lifetime sexual partners by any given later age. This, in itself, contributes to a higher STD rate. In addition, youth who initiate sex at an earlier age are less likely to use condoms or other contraceptives and thus are more likely to become pregnant and to become a parent. In part, because they have more sexual partners and are less likely to use a condom, about half the studies indicate that they are more likely to contract an STD. In addition, young females are not fully physically mature and are more susceptible to STDs.

The relationship between number of sexual partners and sexually transmitted disease is especially well established. Many studies have demonstrated that having a large number of sexual partners greatly increases the chances of contracting an STD.

Regarding condom and contraceptive use, several studies have shown that teens often used condoms initially in sexual relationships, but as their relationships continue and they have sex more frequently, they use longer term hormonal contraceptives such as oral contraceptives or Depo Provera instead.

Studies consistently show that when teens discuss HIV and other STDs and methods for preventing transmission, they are more likely to use condoms. Similarly, when they discuss methods of preventing pregnancy, they are more likely to use contraception.

Not surprisingly, youth who use condoms or other contraceptives the first time they have sex are more likely to use them on subsequent occasions. However, this may reflect other common factors and may not be causal.

Being married reduces the number of sexual partners (as one would expect), and also increases the chances of pregnancy. Because pregnancy can also lead to marriage, the direction of causality is not entirely clear.

Being pregnant previously (or previously getting someone pregnant) increases the risk that condoms will not be used during sex and also increases the risk of an additional pregnancy. Similarly, having previously contracted an STD increases the risk of contracting an STD again. However, causality is unclear because a history of pregnancy or STD reflects all the risk and protective factors discussed above that in turn continue to increase the risk of pregnancy and STD.

Prior sexual abuse is an especially important risk factor for early initiation of sex, greater number of sexual partners, poor condom use, poor contraceptive use, pregnancy, and sexually transmitted disease. Youth who have been sexually abused have been exposed to a variety of risk factors. In addition, their past sexual abuse may distort their understanding of appropriate sexual and contraceptive behavior and may reduce their ability to reject sex or to use contraception.

Finally, prior experience with same-gender sexual behavior is also a risk factor for heterosexual risk-taking. Youth who engage in same-sex sexual behavior are more likely to have heterosexual sex and to have more sexual partners. A few studies also indicate they are more likely to become pregnant (or get their partners pregnant) or to contract an STD, while other studies do not.

Generalizability across Different Sub-Groups of Youth

When people are developing programs for teens in their own communities, they are faced with the question of whether or not the risk and protective factors in Table 1 will apply to the particular group of youth they are targeting. (Of course, the best and only rigorous method of assessing the impact of the important factors is to design and conduct research on those particular youth. Typically, however, limited time and resources prevent that from being done.)

Fortunately, as noted above, virtually all the factors in Table 1 were found to be significant in at least two-thirds of the studies that measured its impact. Given that these studies often sampled varied groups of youth, this increases the chances that these factors will be significant in any particular community. In addition, these studies demonstrated that most of these factors do have an impact among different sub-groups, especially across the three largest ethnic groups and often among both males and females.

On the other hand, this is not always the case. For example, the following factors appear to be effective for only some sub-groups.

- Participating in sports appears to be a protective factor only for girls.
- Having an older romantic partner is a stronger risk factor for girls than for boys.
- Communicating with parents about sex is a greater protective factor for girls than for boys.

This short list does not mean that all other factors affect both males and females and different racial/ethnic groups equally. It simply means that multiple studies show differential effects of these three factors.

Dominant Themes

The preceding summary of important risk and protective factors and those specified in Table 1 still involve a large number of factors and may appear overwhelming. To simplify things, a majority of the most important factors identified in Table 1 (and other factors in Matrix) can be grouped by four broad themes: 1) individual biological factors; 2) disadvantage, disorganization and dysfunction in multiple domains; 3) sexual values, attitudes, and modeled behavior in multiple domains; and 4) connection to adults and organizations that discourage sex, unprotected sex or early childbearing.

These themes became evident during reviews of the studies and the factors in Matrix; they are not based on any factor analysis or other statistical technique. Thus, other researchers may review those factors and identify additional themes.

Individual Biological Factors

First, as discussed previously, biological factors such as age, physical maturity, and gender dramatically affect teen sexual behavior. In fact, they significantly affect nearly all the behaviors noted in this report.

Disadvantage, Disorganization and Dysfunction

Second, many risk factors involve some form of disadvantage, disorganization, or dysfunction among the teens' communities, families or friends or within themselves. At the community level, disorganization can be manifested in higher rates of hunger (and poverty it represents), violence and substance use. Among the teens' families disadvantage, disorganization and dysfunction is evident in low levels of education and income, single-parent homes, divorce, lack of family support, and substance use, for

example. Among the teens' peers, dysfunction is revealed in their poor grades, alcohol and substance use, and participation in deviant activities. Finally, among the teens themselves, disadvantage and dysfunction are reflected in prior physical or sexual abuse; gang membership; physical fights; tobacco, alcohol and drug use; lower levels of cognitive development; few plans for the future; and suicidal thoughts.

Conversely, a substantial proportion of the protective factors include the reverse of these risk factors, e.g., more functional communities; well educated two-parent families with higher incomes; parents who provide monitoring and encouragement; teens who are emotionally healthy, doing well in school, and have plans for the future; and teens with friends performing well in school and avoiding a wide range of risky behaviors.

Many of the forms of disadvantage, disorganization and dysfunction are interrelated, and some are simply more extreme forms of others (e.g., homelessness can be an extreme form of poverty). One implication of these interrelated factors is that changing just one of them is not likely to have a large impact. Rather more intensive and comprehensive programs that address several of them may be necessary to significantly change behavior.

Sexual Values, Attitudes and Norms, and Modeling of Sexual Behavior

Third, many factors involve the teens' own values and attitudes about sexual behavior, pregnancy, childbearing and sexually transmitted disease, as well as the sexual values and behaviors of their families, peers, and communities. For example, teens' own values, attitudes and concerns about sex, condoms, contraception, pregnancy, childbearing and STD affect their sexual behaviors. Their values and behavior, in turn, are affected by the values and norms either expressed verbally or modeled by the behavior of others. For example, parents' values about premarital sex and contraception affect teens' behavior, as do their mothers' and siblings' modeling of sex outside of marriage and early childbearing. The sexual attitudes and behaviors of peers and romantic partners also affect teens' behavior, as do the values expressed by their faith communities.

Connection to Adults and Organizations That Discourage Sex, Unprotected Sex, or Early Childbearing

Fourth, attachment to people or institutions that discourage sex, unprotected sex and early childbearing and that encourage responsibility, either sexual responsibility or responsibility more generally also reduce sexual risk taking. Multiple studies show that when youth are more strongly attached to their parents, their schools, or their faith communities, or when they are more involved in their communities, they are less likely to have sex and unprotected sex.

Connection with parents appears to be a stronger factor than connection with other groups. For example, as noted previously, when youth feel they have high quality interactions with their families, when they feel the support of their families, and when they feel connected to their families, they are less likely to have sex and to become pregnant. Conversely, at the other extreme, when youth are homeless or physically abused, they are more likely to become pregnant or contract an STD.

However, it is not attachment to parents alone that is important. Studies also demonstrate that connection to other groups or organizations that discourage sex, unprotected sex, and early childbearing or that emphasize responsibility is also important. As cited previously, they can include schools, places of worship, and community organizations. For example, enrollment in school, a more positive attitude about school, better school performance, greater participation in school activities, and greater overall connection to school are all associated with less sexual risk-taking or reduced childbearing. When girls (but not boys), are involved in sports they are less likely to initiate sex. Similarly, having a religious affiliation, attending services more frequently, and having greater religiosity are all protective factors. Finally, a few studies indicate that having a mentor, participating more in community activities, and being involved in more community organizations also protect against sexual risk-taking.

When youth are attached to such entities, they may spend less time unsupervised and, consequently, have less opportunity to take sexual risks.

However, even more important than the supervision provided by these groups may be the norms about sexual behavior and childbearing that these groups express. Indeed, it is not attachment, per se, that is protective, but rather attachment to individuals or groups that express responsible values. For example, connectedness to peers and being very popular with peers (who often have more permissive attitudes about sex than parents, schools, or faith communities) and having close friends who are high risk are both associated with earlier initiation of sex, not later initiation of sex. Similarly, when teens are connected to their parents, if their parents have more permissive values about teens having sex, then teens are more likely to initiate sex early than if their parents have less permissive values. In sum, it is not attachment itself that appears to be important, but rather attachment to parents and organizations with responsible values about sexual behavior and childbearing.

It is interesting to note that these four dominant themes, which are based on U.S. studies, are remarkably consistent with the dominant themes noted in a major study comparing teen sexual behavior and pregnancy rates in the United States with those in Canada, England and Wales, France, and Sweden, all of which have much lower teen pregnancy rates⁷. That study found that among the important factors that may have contributed to higher U.S. teen pregnancy rates were socioeconomic disadvantage; values, attitudes and norms about teen sexual behavior; and support and programs for families and youth (which may have increased the connection between youth and their families and communities). That study also identified sexual and reproductive health services as another important theme. Although that theme did not surface in this review, it may be because there has been relatively little recent research on it in the United States. However, state funding for family planning services has been shown to be related to lower teen childbearing rates in two different studies published after 1990 (and two more published before 1990 and not included in this review).

The implications of the four dominant themes identified in this report are that pregnancy and STD prevention initiatives need to address 1) socioeconomic disadvantage and

⁷ The Alan Guttmacher Institute. (2001) Teenage Sexual and Reproductive Behavior in Developed Countries: Can More Progress Be Made? New York, NY: The Alan Guttmacher Institute.

dysfunction, 2) values and norms about sexual behavior, childbearing and sexually transmitted disease, and perceptions of those norms by youth, and/or 3) attachment to parents, groups or institutions that emphasize responsible sexual behavior. For all practical purposes biological factors cannot be changed and, therefore, cannot be addressed in the same manner as the other factors.

Causal Structure

The discussion above, in combination with Matrix, 1) identified a large number of risk and protective factors from the research literature, 2) identified those factors that have the strongest evidence for a significant causal impact on one or more sexual behaviors among teens (Table 1), and 3) discussed the four important themes that summarize those factors. This section now describes a possible causal structure involving these factors.

Many people who have developed programs that effectively changed teen sexual behavior either explicitly or implicitly developed logic models to do so. These models typically identified 1) the health-related goals to be achieved, 2) the behaviors that needed to be changed, 3) the risk and protective factors that affect those behaviors, and 4) the interventions designed to change those risk and protective factors. Increasingly, people are using logic models to design effective teen pregnancy prevention and/or STD prevention programs or to pursue other health goals.⁸

Understanding the causal structure of all these factors can help program designers when they develop their own logic models. Understanding the causal structure can also be helpful in its own right.

Before discussing a possible causal structure among these factors, it must be recognized that the real world is complex and not simple, that many factors affect each other as well as affecting behavior and that factors affect behavior but in turn that behavior may subsequently affect the original factor, etc. Thus, the following discussion must necessarily simplify reality.

Figure 1 depicts some of the causal relationships among key risk and protective factors and pregnancy and contraction of STDs. The arrangement of factors in this figure is consistent with many contemporary theories (e.g., cognitive behavior theory, theory of reasoned action and PRECEDE/PROCEED). However, just as contemporary theorists do not entirely agree amongst themselves about the causal structure of different factors, so people knowledgeable about these risk and protective factors will not agree with every part of this depiction. Nevertheless, this figure can help portray possible relationships among these factors.

Consistent with the approach used by most causal diagrams, the factors on the left tend to affect the factors on the right, more than vice versa. However, there may be some

⁸ At www.etr.org/recapp: “BDI LOGIC MODELS: A Useful Tool for Designing, Strengthening and Evaluating Programs to Reduce Adolescent Sexual Risk-Taking, Pregnancy, HIV and Other STDs” is available to download free of charge. This website also offers a free on-line interactive course on developing BDI logic models.

reciprocal causality, meaning that some factors on the right may also affect factors to their left. For example, attachment to family affects initiation of sex, but initiation of sex may also affect attachment to family.

Overall, this figure suggests that teen pregnancy and sexually transmitted disease are affected by individual factors (the upper half of Figure 1), environmental factors (the bottom half of that figure), and factors linking individual teens with their environments (e.g., families, faith communities and schools).

The factors in Figure 1 closely match those important factors in Table 1, but they are not identical. Figure 1 includes a few factors that either common sense or other kinds of research not meeting the requirements for quantitative research studies have demonstrated are important. For instance, large quantitative studies have not pointed to the availability of condoms or other contraceptives as an important factor tied to teen condom or contraceptive use, but common sense and interviews with youth and practitioners make clear that if condoms and other forms of contraception are not available, youth will not use them.

Using Figure 1, the discussion will now describe what is known about the causal links. The factors are explored from right to left⁹.

What Behavioral Factors Determine Whether Youth Become Pregnant (Or Cause A Pregnancy) Or Contract An STD?

Consistent with both common sense and research, behavioral factors affecting pregnancy include whether youth are abstinent, and, if not, their frequency of sex and use of contraception. Similarly, behavioral factors affecting STD transmission include whether youth remain abstinent, frequency of sex, number of sexual partners, and use of condoms. While teen pregnancy and STD appear in column 1, these behavioral factors appear in column 2.

Teens' risk of contracting an STD also depends on whether or not their partners are infected with one. Because that is determined, in part, by whether or not they have been tested and treated for STDs, that factor is also included in column 2. However, because it is an environmental factor, it is among the environmental factors below the dotted line.

The practical implication of these factors thus far is that to prevent teen pregnancy or STD transmission, programs must either increase abstinence, reduce the frequency of sex and/or the number of sexual partners, or increase the use of condoms, other contraception, and testing/treatment for STDs. (All of this is true, even if the program is a youth development approach that does not focus directly on any sexual behavior.)

⁹ People familiar with BDI logic models should note that column 1 represents the health goals in BDI logic models, column 2 specifies the behaviors (B), and columns 3-8 specify the determinants (D) in logic models. Possible interventions (I) are not included in this figure, but are included in the next section of this paper.

What Factors Affect Whether Youth Have Sex, Their Frequency Of Sex, Or Their Use Of Condoms Or Other Contraceptives?

One key factor is intention. When youth intend to have sex (or to avoid sex), they are much more likely to do so. When they intend to use condoms or contraception, they are also much more likely to do so. (Column 3.)

Youth are also more likely to avoid sex or to use condoms or other contraceptives if they have the skills to resist unwanted sex or to insist on and use contraception when they intend to do so. However, intentions and skills do not always translate into behavior. Intentions are affected by factors in the environment that may not be under their control. For example, teens may intend to avoid sex but may be coerced or forced into doing so. Even if teens intend to have sex, to use condoms or other contraceptives, or to obtain STD testing and treatment, those behaviors depend on whether they have the opportunity to have sex, to obtain condoms or other contraceptives, or to secure STD testing and treatment. While this is common sense, much of it is also supported by research. These factors are included in column 3 because they directly affect sexual behaviors. However, they characterize the teens' environment and are below the dotted line.

The practical implication of these factors is that efforts to reduce teen pregnancy or STD rates must also affect intentions to have sex or use condoms or contraception, skills to avoid sex or use condoms or contraception, opportunity to have sex, coerced or forced sex, or availability of condoms, contraception and STD testing.

What Factors Directly Affect Intent To Have Or Not Have Sex Or To Use Or Not Use Condoms Or Other Contraceptives?

Many individual factors directly affect teens' intention to have or to avoid sex. These include their personal values about premarital sex or about youth their age having sex; their perceptions of the benefits of having sex; their expectations of feeling guilt if they do have sex; their perceived susceptibility of becoming pregnant or contracting an STD; their perception of family and peer norms about having sex, pregnancy and STDs; their perceived ability to resist sex if pressured; and taking a virginity pledge. (Column 4.)

The factors that affect intent to use condoms or other contraceptives include greater perceived consequences of pregnancy; perceived male responsibility for pregnancy prevention (if male); greater motivation to avoid STD/HIV; belief that condoms do not reduce pleasure; expectation that partner will appreciate condom use; more positive attitudes towards condoms and contraception; their perception of family and peer norms about condoms, other contraceptives, pregnancy, and STDs; and their perceived ability to insist upon and actually use condoms or other contraceptives. (Column 4.)

These factors are sometimes considered "individual proximal sexual factors" because they are closely linked conceptually to actual sexual behaviors and they may directly affect those sexual behaviors. Many more distal factors may operate through these factors. For example, family education and income may affect individual teens' perceptions of their values and the teens' motivations to avoid pregnancy. A practical implication of these factors is that they have a marked impact on sexual behavior and can

be influenced by programs. Thus, these factors are often targeted by many sex and STD/HIV education programs.

What Affects “Individual Proximal Sexual Factors?”

Numerous factors affect individual proximal sexual factors, including the biological factors in column 6, various behaviors and psychological states in column 5 and most of the environmental factors in columns 5-7. For instance, when teens have steady partners, their motivation to have sex increases. If the romantic partner is older, the couple is more likely to have sex and if the romantic partner supports condom or other contraceptive use, they are more likely to use them. (Column 5.)

As noted previously, emotional distress can affect teens’ behavior regarding sex and contraceptive use. If they are depressed or if they have consumed alcohol or used drugs, their intention and/or ability to avoid sex may diminish. (Column 5.)

Biological factors directly and indirectly affect proximal sexual factors. For example, as youth become older, their knowledge, values, perceived norms, personal skills, and ability to access condoms and other forms of contraception change. In addition, they become more likely to begin dating and to form longer-lasting romantic relationships. And, as noted, teens who have dated for a long time, are going together and are in love, are more likely to want to have sex and to intend to have sex. They also are more likely to have the opportunity to be alone and to actually have sex.

As noted above, the norms and behaviors of their peers strongly affect their own values and attitudes. If their friends are using drugs or alcohol, going steady, having sex, parenting, then they are more likely to use drugs or alcohol, go steady, have sex and parent. The behaviors and norms of their peers influence their own values. (Column 5.)

In addition, community, family and peer characteristics affect individual proximal sexual factors. For example, social disorganization – high crime rates, high substance use rates and high rates of non-marital childbearing in the community – may lessen motivation to avoid childbearing or perceived ability to do so. Family structure may affect the parents’ ability to monitor teens’ behavior, and family education and income levels may affect expectations about long term education and career goals as well as motivation to avoid childbearing. Finally, teens’ values about sexual behavior are affected by values communicated by parents, religious institutions to which the teens belong, as well as peers and romantic partners.

How Are The Factors Involving Attachment And Involvement Unique?

The factors related to attachment, connection and involvement are different from other factors in two key ways. First, they describe the relationships *between* the individuals and their environments, not precisely the individuals or their environments themselves. Second, factors involving attachment not only have an impact directly on the individuals’ proximal sexual factors; they also affect the extent to which environmental factors affect individuals’ proximal sexual factors. For example, the sexual values of a faith community may not affect teens if the teens have no attachment to, connection with, or

involvement in that faith community. Similarly, the sexual values of parents, peers and others have a greater impact if the teens are more connected to those people in their lives.

Because these factors describe the connections between the individual teens and their environment, they are depicted in the Figure 1 as crossing the boundary between individuals' factors and the factors describing groups in their environments.

What Are The Relationships Among The Environmental Factors?

Although a thorough discussion of the interrelationships among the environmental factors is beyond the scope of this paper, a few are noteworthy here. For example, community characteristics affect family characteristics (e.g., community norms affect family norms). By the same token, family characteristics partially determine community characteristics (e.g., family incomes affect the communities in which they can live). All of these, in turn, have some impact on teens' friends and whom they choose as friends.

Clearly, Figure 1 cannot depict all the causal relationships among all the factors included in it; attempting to do so would make it unreadable. However, several important points are worth mentioning:

- Because many factors affect other factors which, in turn, affect behavior, it is not necessary for interventions to address every individual factor in order to change behavior. Instead, it is important to address the particularly important factors.
- In general, the factors that are farthest to the right in Figure 1 (the most proximal psychosocial sexual factors) have the greatest impact on behavior and outcomes, such as pregnancy and STD. Thus, interventions that target these factors directly and successfully improve them may have the greatest chance of actually changing behavior. Many studies have demonstrated the efficacy of this approach.
- On the other hand, some of the more distal factors on the left in Figure 1 (e.g., community disorganization or family values) also affect outcomes like pregnancy and sexually transmitted disease, in part, because they affect the more proximal factors. Therefore, addressing distal factors can also be an effective strategy that has been demonstrated to reduce risky sexual behavior and pregnancy. Although distal factors may be more difficult to address, they have the potential to affect a greater variety of factors and behaviors (e.g., substance use, depression, and violent behavior).

Given that teen pregnancy and STD rates can be affected by addressing proximal and distal factors, each organization concerned about teen pregnancy or STD must decide which to focus upon. This decision should be determined in part by considering the resources of each organization and the factors it can actually change.

Which Factors Can Be Changed?

As noted at the beginning of this report, pregnancy and STD prevention initiatives should focus on those factors that 1) have an impact on sexual behavior and 2) can be markedly changed. Table 1 identifies factors that have the strongest evidence of an impact on behavior. Table 2 identifies those factors in Table 1 that can be changed and how.

Which factors can be changed depends somewhat upon the resources and goals of the organizations involved. For the purposes of this review, a broad definition is used when describing organizations concerned with preventing teen pregnancy and/or STDs. These organizations are involved in activities ranging from STD/HIV education and family planning to youth development and/or parental education. Table 2 divides the important factors into three groups based on how feasible it would be for most of these organizations to change these factors. The groups comprise: 1) those factors that are impossible or extremely difficult for most organizations to change themselves, although they may be able to do so by working with other community agencies; 2) those factors that are difficult for most organizations concerned about pregnancy and STD prevention to change unless they have special programs or capabilities (e.g., youth development activities or mental health services); and 3) those factors that are more directly related to sexuality and reproductive health and, thus, most amenable to change by these organizations.

The only factors that, for all practical purposes, cannot be changed are the biological ones. These are included in the first group. In addition, factors describing community disorganization cannot easily be changed by organizations that focus primarily on reproductive health. However, sometimes collaborative efforts with multiple community or state agencies may be able to produce improvement in these areas. Other factors that are difficult to address are those relating to family structure (e.g., number of parents in the home, family education, and income), past events (e.g., the teen mother's age at first birth or prior sexual abuse), and parents' sexual behavior. (However, some agencies may be able to address the consequences of some of these factors.)

In the second group are those factors that cannot be easily changed by most pregnancy and STD prevention organizations, but can be changed with intensive youth development programs or other special services. Examples include:

- ***Educational and counseling programs for parents*** that help them monitor their teen children more appropriately, teach them to discourage their teens from having romantic involvements with much older partners, or urge parents to emphasize the importance of doing well in school.
- ***Intensive counseling programs for families*** to improve the quality of family interactions, to increase communication, and in general, to enhance connectedness.
- ***Intensive counseling programs for youth with emotional distress*** that reduce their stress, depression or suicide risk.
- ***Effective alcohol and drug abuse prevention programs*** for teens and/or their parents.

- ***Programs for parents about teen sexuality*** that help them communicate to their children their values about sexual behaviors and decision-making.
- ***Career education programs*** for youth that help them set educational and career goals, and pursue them.
- ***Tutoring programs for teens*** that increase attachment to school, improve school performance and encourage pursuit of higher education.
- ***Intensive entrepreneurship programs*** that improve school performance for youth.
- ***Intensive arts and creative expression programs*** that increase school performance and connectedness to school.
- ***Intensive service learning programs*** that bolster connectedness to school, improve school performance, and have other positive effects.
- ***Mentoring programs*** that increase attachment to parents, other adults and school, and decrease alcohol and drug use.
- ***Sports programs for girls*** that increase their participation in athletics.
- ***Other school-sponsored programs*** that encourage youth to become actively involved in school activities.
- ***Faith-based programs*** that encourage youth to be more involved in their faith communities and to learn the values of those communities, especially about sexuality.
- ***Comprehensive community-based programs*** that address multiple risk and protective factors.

Most of these examples do have research-based evidence that they can actually affect the risk and protective factors mentioned. However, such initiatives are not always effective. Each of them has various characteristics that may be important to implement¹⁰. Furthermore, for some of the examples above, it should be remembered that it may not be the exact activities that are critical; what may be critical is that youth are actively and intensely involved over a lengthy period of time and form close connections with adults.

The third group of factors includes those that can be most easily changed by teen pregnancy and STD prevention organizations. They include the proximal sexual factors (e.g., knowledge, values, perception of peer norms, motivation and self-efficacy) of the teens themselves, their partners, or their peers.

Studies have demonstrated that some sex and HIV education programs can change these proximal sexual factors and delay the initiation of sex, reduce the frequency of sex, reduce the number of sexual partners, and/or increase condom or contraceptive use¹¹. Logically then, some of these programs also reduce pregnancy and sexually transmitted disease. Positive behavioral effects have been observed in a variety of program settings,

¹⁰ Kirby D et al. Preventing Teen Pregnancy: Youth Development and After-School Programs. Scotts Valley, CA: ETR Associates, 2003.

¹¹ Kirby D. Emerging Answers: Research Findings on Programs to Reduce Teen Pregnancy. Washington DC: The National Campaign to Prevent Teen Pregnancy, 2001.

including schools during regular school hours and on the weekends, community health centers, community detention centers, shelters for runaway youth, and residential drug treatment programs.

Details of Important Proximal Sexual Factors

When organizations develop programs intended to target proximal sexual factors, they can benefit from greater levels of detail about these factors than is provided in Tables 1 or 2. Accordingly, Table 3 provides specific content areas or items that have been included in questionnaires measuring these factors or have been targeted by effective programs.

Summary and Conclusion

It is clear from this review that many factors affect teen sexual behavior, and their relationships with behavior are complex. This report concludes by summarizing some of the key points that will be most helpful to those working with and supporting teens.

- Risk and protective factors are rooted in states, communities, families, schools, faith communities, friends and peers, romantic partners, and in the teens themselves. Factors also involve teens' relationships with these important individuals or organizations in their environment. Some of these factors are risk factors and some are protective factors. Some factors directly involve sexuality, while others do not.
- The majority of factors fall into one of four groups or themes: 1) biological factors such as age, physical maturity, and gender that cannot be changed; 2) disadvantage, disorganization and dysfunction in the lives of the teens and their families, peers, and communities; 3) sexual values and norms either verbally expressed or modeled by the teens themselves or their families, romantic partners, peers, faith communities, schools and/or communities; and 4) the teens' connection to groups or institutions that discourage risky sexual behaviors and/or encourage responsible behaviors.
- Many of these factors affect other factors and thereby affect behavior. For example, community disorganization may affect teens' expectations for future careers and thereby affect motivation to avoid early childbearing and sexual behavior; parent monitoring may affect teen norms about sex and opportunity to have sex and thereby affect sexual behavior; and success in school may affect motivation to avoid childbearing and thereby affect sexual behavior. Most factors that do not inherently involve sexuality may nevertheless have an impact on the proximal sexual factors and thereby change behavior.
- Because there are a large number of factors that affect teen sexual behavior, few of them individually have a large impact on that behavior. Therefore, programs

or organizations working to change teen sexual behavior will probably need to address (and change) multiple risk and protective factors.

- Some factors have a greater impact on sexual behavior than others. In general, the proximal sexual factors such as values, attitudes and perceived norms about sexual behavior have the greatest effect on teen sexual behavior. Nevertheless, some important risk and protective factors do not directly involve sexuality and characterize other parts of the teens' environment.
- Because there are a variety of important risk and protective factors, diverse organizations with varied missions can help reduce the rates of teen pregnancy and STDs. While organizations that traditionally focus on teen sex and reproductive health can most effectively address proximal sexual factors, those with broader missions can select more distal non-sexual factors.

To assist organizations, programs and other interested individuals in synthesizing the information contained in this report, the factors are diagrammed in the tables and figure already presented. Table 1 includes the factors that are significantly related to sexual behavior. All of these factors potentially can be used to identify those youth who are at greatest risk of sex and unprotected sex. While all youth are potentially at risk and therefore deserve the opportunity to participate in programs, it is particularly important to involve these higher risk youth in programs. Table 2 highlights those factors that are significantly related to behavior *and* can be affected with interventions. Thus, they are the ones most worth focusing on. These factors can be used to design new programs and to refine existing ones. Table 3 provides the greater detail that may be needed to implement activities that most directly and efficiently address very specific proximal sexual factors.

In sum, when programs and policies target those risk and protective factors that ultimately have the greatest impact on behavior and that can be changed markedly, they will maximize their chances for success in reducing teen pregnancy, childbearing and sexually transmitted disease.

**Table 1:
Potentially Important Risk and Protective Factors
That May Affect Adolescent Sexual Behavior,
Use of Condoms & Contraception, Pregnancy and STD¹²**

Environmental Factors

Community

Foreign born

- + Higher percent foreign born

Community disorganization

- Greater community social disorganization (e.g., violence, hunger & substance use)

Family

Family Structure

- + Live with two biological parents (vs one parent or stepparents)
- Family disruption (e.g., divorce or change to single parent household)

Educational Level

- + Higher level of parental education

Substance abuse

- Household substance abuse (alcohol or drugs)

Positive family dynamics and attachment

- + Higher quality family interactions, connectedness & relationship satisfaction
- + Greater parental supervision and monitoring
- Physical abuse and general maltreatment

Family attitudes about and modeling of sexual risk-taking and early childbearing

- Mother's early age at first birth
- Older sibling's early sexual behavior and early age of first birth
- + Parental disapproval of premarital sex or teen sex
- + Parental acceptance and support of contraceptive use if sexually active

Communication about sex and contraception

- + Greater parent/child communication about sex and condoms or contraception especially before youth initiates sex

¹² This table identifies risk and protective factors with strong and consistent evidence. Table 2 identifies the factors in this table that can be potentially changed by individuals or interventions.

"+" denotes a protective factor; "-" denotes a risk factor; "+/-" denotes a factor that was a protective factor for one or more behaviors and also a risk factor for one or more other behaviors.

Peer

Age

- Older age of peer group and close friends

Peer attitudes and behavior

- Peers' alcohol use, drug use and deviant behavior
- Peers' pro-childbearing attitudes or behavior
- Peers' permissive values about sex
- Sexually active peers
- + Positive peer norms or support for condom or contraceptive use
- + Peer use of condoms

Romantic Partner

Partner characteristics

- Having a romantic or sexual partner who is older
- + Partner support for condom and contraceptive use

Teen Individual Factors

Biological factors

- +/- Being male
- +/- Older age
- + Older age of physical maturity or menarche

Race/Ethnicity

- Being Black (vs white)
- Being Hispanic (vs non-Hispanic white)

Attachment to and success in school

- + Greater connectedness to school
- + Higher academic performance
- Being behind in school or having school problems
- + High educational aspirations and plans for the future

Attachment to faith communities

- + Having a religious affiliation
- + More frequent religious attendance

Problem or risk-taking behaviors

- Alcohol use
- Drug use
- Being part of a gang
- Physical fighting and carrying weapons
- Other problem behaviors or delinquency

Other behaviors

- Working for pay more than 20 hours per week
- + Involvement in sports (females only)

Cognitive and personality traits

- + Higher level of cognitive development
- + Greater internal locus of control

Emotional well-being and distress

- Thoughts of suicide

Sexual beliefs, attitudes and skills

- More permissive attitudes toward premarital sex
- Perceiving more personal and social benefits (than costs) of having sex
- + Greater feelings of guilt about possibly having sex
- + Taking a virginity pledge
- + Greater perceived male responsibility for pregnancy prevention
- + Stronger beliefs that condoms do not reduce sexual pleasure
- + Greater value of partner appreciation of condom use
- + More positive attitudes towards condoms and other forms of contraception
- + More perceived benefits and/or fewer costs and barriers to using condoms
- + Greater self-efficacy to demand condom use
- + Greater self-efficacy to use condoms or other forms of contraception
- + Greater motivation to use condoms or other forms of contraception
- + Greater intention to use condoms
- + Greater perceived negative consequences of pregnancy
- + Greater motivation to avoid pregnancy, HIV and other STD

Relationships with romantic partners and previous sexual behaviors

- Dating more frequently
- Going steady, having a close relationship
- Ever kissed or necked
- + Older age of first voluntary sex
- Greater frequency of sex
- Having a new sexual relationship
- Greater number of sexual partners
- + Discussing sexual risks with partner
- + Discussing pregnancy and STD prevention with partner
- + Previous effective use of condoms or contraception
- Previous pregnancy or impregnation
- History of STD
- History of prior sexual coercion or abuse
- Same-sex attraction or behavior
- Being married

**Table 2:
Feasibility of Markedly Changing Risk and Protective
Factors¹³**

Risk and Protective Factors	Feasibility of Changing ¹⁴	Comments on Feasibility of Possible Programs To Change Them
Environmental Factors		
Community		
Foreign born		
+ High percent foreign born	*	In general, pregnancy and STD prevention programs cannot affect the percent foreign born in a community.
Community disorganization		
- Greater community social disorganization (e.g., violence, hunger & substance use)	*	In general, pregnancy and STD prevention programs, themselves, do not have the resources or capability of markedly changing community-wide social disorganization such as violence, hunger or substance use. However, pregnancy and STD prevention programs can work collaboratively with other organizations to address these larger issues in some communities.
Family		
Family structure		
+ Live with two parents (vs one parent or stepparents)	*	In general, pregnancy and STD prevention programs cannot affect marital status, divorce risk and living arrangements of families. However, if their agencies have marriage or family counseling departments, then these departments may be able to help parents stay together.
- Family disruption (e.g., divorce or change to single parent household)	*	

²This table specifies which items can be most easily changed by different types of organizations. Thus, it can provide a guide to organizations by suggesting which factors they should focus upon given their goals, capabilities and resources.

¹⁴ * = Extremely difficult for most pregnancy and STD prevention agencies to change directly themselves, although they may have a long term effect by working with other agencies to change policies.

** = Difficult for most pregnancy and STD prevention agencies to change unless they have special programs or capabilities.

*** = Most amenable to change directly by pregnancy and STD prevention agencies. These are italicized.

Educational level		
+ High level of parental education	*	In general, pregnancy and STD prevention programs cannot affect the parents' educational level. However, in some communities, programs with a holistic approach may be able to provide guidance and counseling to parents and encourage and facilitate their obtaining a higher education.
Substance abuse		
- Household substance abuse (alcohol or drugs)	**	In general, pregnancy and STD prevention programs can have little effect on whether parents of teens abuse alcohol or drugs. However, some agencies may be able to provide alcohol and drug abuse prevention programs and thereby reduce parental abuse.
Positive family dynamics and attachment		
+ High quality family interactions, connectedness & relationship satisfaction	**	In general, pregnancy and STD prevention programs can have little effect on family interactions and connectedness. However, some agencies may be able to provide intensive family guidance and counseling and may be able to have an impact on these family interactions.
+ Greater parental supervision and monitoring	**	Some more holistic programs may be able to implement programs for parents that encourage them to supervise and monitor their teen children appropriately.
- Physical abuse and general maltreatment	**	In general, pregnancy and STD prevention programs can have little effect on physical abuse and maltreatment within the family. However, some agencies may be able to provide intensive family guidance and counseling and may be able to have an impact on these behaviors.
Family attitudes about and modeling of sexual risk-taking and early childbearing		
- Mother's early age at first sex and first birth	*	Programs cannot affect the teens' mothers' prior behavior. However, programs can prevent current teens from becoming teen mothers, and thereby help the next generation.
- Older sibling's early sexual behavior and early age of first birth	**	In general, pregnancy and STD prevention programs cannot affect the previous behavior of older siblings. However, they can, of course, affect the behavior of current teens who may have younger siblings.

+ Parental disapproval of premarital sex or teen sex	**	Pregnancy and STD prevention programs can provide parents with accurate information about teen sexual behavior and its consequences. Some programs, especially church-based programs, may emphasize conservative religious values about premarital sex and teen sex. Many programs may encourage parents to encourage their teens to be abstinent.
+ Parental acceptance and support of contraceptive use if sexually active	**	Pregnancy and STD prevention programs can provide parents with accurate information about teen sexual behavior, its consequences, and the effectiveness of condoms and contraception. Some programs may be willing to encourage parents to encourage their teens to use contraception if they do have sex.
Communication about sex and contraception		
+ Greater parent/child communication about sex and condoms or contraception especially before youth initiate sex	***	<i>Pregnancy and STD prevention programs can increase parent-child communication about sex, condoms and contraception through school homework assignments, special programs for parents, college courses for parents, and other approaches.</i>
Peer		
Age		
- Older age of peer group and close friends	**	In general, pregnancy and STD prevention programs cannot easily affect the age of youths' peers. However, some programs may be able to implement programs that provide activities for young people to interact with people their own age or to encourage same-age friends in other ways.
Peer attitudes and behavior		
- Peers' alcohol use, drug use and deviant behavior	**	If friends can be reached by programs, then some pregnancy and STD prevention programs with a youth development emphasis may be able to implement effective alcohol and drug abuse prevention programs and other effective youth development programs that reduce non-normative behavior.
- Peers' pro-childbearing attitudes or behavior	***	<i>If peers can be reached by programs, then agencies can implement effective sex education programs that reduce pro-childbearing attitudes and behavior. If peers cannot be reached in the program, then programs can implement activities in small or large group settings that demonstrate peer support for avoiding pregnancy.</i>

- Permissive values about sex	***	<i>If friends can be reached by programs, then agencies can implement effective abstinence-only or effective sex and HIV education programs that change permissive values about sexual behavior and delay the initiation of sex. If peers cannot be reached in the program, then programs can implement activities in small or large group settings that demonstrate peer support for delaying sex.</i>
- Sexually active peers	***	<i>If friends can be reached by programs, then agencies can implement effective abstinence-only or effective sex and HIV education programs that change permissive values about sexual behavior and delay the initiation of sex. If friends cannot be reached, then programs can implement activities demonstrating that perceptions of peer sexual activity are typically exaggerated.</i>
+ Positive peer norms or support for condom or contraceptive use	***	<i>If friends can be reached by programs, then agencies can implement effective sex and HIV education programs or effective clinic protocols that increase support for condom and contraceptive use and actually increase condom and contraceptive use. If peers cannot be reached, then programs can implement activities in small or large group settings that demonstrate peer support for condom and contraceptive use if sexually active.</i>
+ Peer use of condoms	***	<i>If peers can be reached by programs, then agencies can implement sex and HIV education programs that increase condom use. If peers cannot be reached in the program, then programs can implement activities in small or large group settings that demonstrate peer support for condom use.</i>
Romantic Partner		
Partner characteristics		
- Having a romantic partner who is older	**	Pregnancy and STD prevention programs can encourage youth to date people their own age and not older. However, such efforts have not yet been evaluated.
+ Partner support for condom and contraceptive use	**	If partners can be reached by programs, then effective sex and HIV education programs can be implemented that improve attitudes toward condom and contraceptive use. If partners cannot be reached in the program, then programs can implement activities in small or large group settings that demonstrate peer support for condom use.

Teen Individual Factors		
Biological factors		
+/- Being male	*	Within reason, it is not possible to change these biological factors.
+/- Older age	*	
+ Greater physical maturity	*	
Race/Ethnicity		
- Being Black (vs white)	*	Programs can not affect the race or ethnicity of people. However, sometimes in collaboration with other groups, they can help reduce minority poverty or minority cultural values that may contribute to sexual risks.
- Being Hispanic (vs non-Hispanic white)	*	
Attachment to and success in school		
+ Greater connectedness to school	**	Some pregnancy and STD prevention programs with a youth development emphasis may be able to implement tutoring programs, mentoring programs, job shadowing, intensive arts programs, sports, or service learning or other programs that may help keep youth in school, keep them involved, improve their grades and improve their future aspirations.
+ Higher academic performance	**	
- Being behind in school or having school problems	**	
+ High educational aspirations and plans for the future	**	
Attachment to faith communities		
+ Having a religious affiliation	**	Most pregnancy and STD prevention programs cannot strive to increase involvement in religious organizations. However, faith communities can implement youth programs or initiatives that may increase youths' involvement and faith communities can implement programs to help youth better understand their religions' values about sexuality.
+ More frequent religious attendance	**	
Problem or risk-taking behaviors		
- Alcohol use	**	Some pregnancy and STD prevention programs with a youth development emphasis may be able to implement effective alcohol and drug prevention programs and other effective youth development programs that reduce alcohol use or drug use.
- Drug use	**	
- Being part of a gang	**	Some pregnancy and STD prevention programs with a youth development emphasis may be able to implement programs that reduce gang membership.
- Physical fighting and carrying weapons	**	Some pregnancy and STD prevention programs with a youth development emphasis may be able to implement programs that reduce fighting, violence, other problem behaviors.
- Other problem behaviors or delinquency	**	

Other behaviors		
- Working for pay more than 20 hours per week	**	Most pregnancy and STD prevention programs will not wish to discourage youth from working and having the greater autonomy that accompanies work. However, some may be willing to discourage youth from working more than 20 hours per week.
+ Involvement in sports (females only)	**	Some pregnancy and STD prevention programs with a youth development emphasis may be able to implement sports programs for girls.
Cognitive and personality traits		
+ Higher level of cognitive development	**	Most pregnancy and STD prevention programs are not designed to increase level of cognitive development. However, some with a youth development emphasis may be able to implement programs that slightly increase level of cognitive development.
+ Greater internal locus of control	**	Internal locus of control is difficult to change. However, some programs with an intensive youth development focus may be able to improve locus of control.
Emotional well-being and distress		
- Thoughts of suicide	**	Most pregnancy and STD prevention programs are not equipped to address serious depression or thoughts of suicide. However, some programs may be able to refer youth to other agencies to obtain needed help or may provide these services in house.

Sexual beliefs, attitudes and skills		
- More permissive attitudes toward premarital sex	***	<i>Pregnancy and STD prevention programs can implement effective abstinence-only education programs, sex and HIV education programs, and clinic protocols that target these factors and have been demonstrated to delay the initiation of sex, reduce the frequency of sex and the number of partners, and increase condom or contraceptive use.</i>
- Perceiving more personal and social benefits (than costs) of having sex	***	
+ Greater feelings of guilt about possibly having sex	***	
+ Taking a virginity pledge	***	
+ Greater perceived male responsibility for pregnancy prevention	***	
+ Stronger beliefs that condoms do not reduce sexual pleasure	***	
+ Greater value of partner appreciation of condom use	***	
+ More positive attitudes towards condoms and other forms of contraception	***	
+ More perceived benefits and/or fewer costs and barriers to using condoms	***	
+ Greater self-efficacy to demand condom use	***	
+ Greater self-efficacy to use condoms or other forms of contraception	***	
+ Greater motivation to use condoms or other forms of contraception	***	
+ Greater intention to use condoms	***	
+ Greater perceived negative consequences of pregnancy	***	
+ Greater motivation to avoid pregnancy, HIV and other STD	***	

Relationships with romantic partners and previous sexual behavior		
- Dating more frequently	**	Pregnancy and STD prevention programs can encourage parents to appropriately monitor and supervise dating and going steady. Programs can also encourage youth to delay dating and going steady and to participate in group activities rather than one-on-one dates. Such efforts have not been evaluated, however.
- Going steady, having a close relationship	**	
- Ever kissed or necked	**	
+ Older age of first voluntary sex	***	<i>Pregnancy and STD prevention programs can implement effective abstinence-only education programs and sex and HIV education programs that target these factors and have been demonstrated to delay the initiation of sex.</i>
- Greater frequency of sex	***	<i>Some effective sex and HIV education programs and clinic protocols can reduce the frequency of sex and the number of sexual partners (and hence also the number of new sexual relationships). Others can encourage young people in new sexual relationships to begin using contraception earlier in their relationship.</i>
- Having a new sexual relationship	***	
- Greater number of sexual partners	***	
+ Discussing sexual risks with partner	***	<i>Pregnancy and STD prevention programs can implement effective sex and HIV education programs and clinic protocols that increase communication about sexual risks and pregnancy and STD prevention.</i>
+ Discussing pregnancy and STD prevention with partner	***	
+ Previous effective use of condoms or contraception	***	<i>Pregnancy and STD prevention programs can implement effective sex and HIV education programs, and clinic protocols that target and increase condom and contraceptive use, and thereby reduce risk of pregnancy and STD.</i>
- Previous pregnancy or impregnation	***	
- History of recent STD	***	
- History of prior sexual coercion or abuse	*	Logically, pregnancy and STD prevention programs cannot prevent events that happened in the past and typically they are not equipped to prevent subsequent abuse or to properly address the consequences of past sexual abuse. However, they can refer sexually abused youth to intensive and skilled counseling services for sexually abused youth, if they exist, and some agencies may be equipped to implement support groups for victims.
- Same-sex attraction or behavior	**	Pregnancy and STD prevention programs cannot affect whether youth are gay or lesbian, but some programs designed for gay, lesbian and questioning youth may be able to reduce their sexual risk-taking.
- Being married	**	Most programs do not include delaying marriage in their mission. However, some programs, especially those with counseling components, may be able to get some young people to think seriously about the implications of early marriage.

Table 3:
**Examples of Items That Have Been Used to Measure Selected Factors
and That Can Be Used to Create Specific Activities or Programs to
Address Them¹⁵**

Attitudes favoring abstinence until marriage

- + It is wrong to have sex before marriage.¹⁶
- + Having sex before marriage is against my religious beliefs.
- + Abstaining from sex until marriage is important to me.
- + Teens would be better off if they said “no” to sex.
- It is okay for people my age to have sex.
- It is okay for people my age to have sex if they are in love.
- It is okay for people my age to have sex with someone they like, but don’t know very well.

Perceived costs of having sex and benefits of abstaining from sex

- + I would not have sex now because I’m not ready to have sex.
- + I would not have sex now because it is against my beliefs.
- + I would not have sex now because it is against my parents’ values and they would be terribly upset if they believed I was having sex.
- + I would not have sex now because I do not want to get pregnant.
- + I would not have sex now because I don’t want to get AIDS or some other STD.
- + I would not have sex now because I don’t want to get a bad reputation.
- + If I had sex with a boyfriend or girlfriend, my friends might gossip about me.
- + I would not have sex now because I’m waiting for the right person.
- + I would not have sex now because my friends think it is better to wait to have sex.
- If I want to be popular, I need to go farther than kissing.
- If I had sex with a boyfriend or girlfriend, it would prove that I love him or her.
- I would have sex now if someone I cared about pressured me to have sex.
- I would have sex now to satisfy strong sexual desires.
- I would have sex now because I want to have a baby.

Perceived parental values about having sex

- + My parents think having sex before marriage is wrong.
- + My parents think people my age should wait until they are older to have sex.
- + My parents think I should abstain from sex.
- + My parents would be terribly upset if they believed that I was having sex.

¹⁵ Most of these items are based on actual questions used to measure factors in previous research. These items specify more precisely some of the factors that are related to behavior and can therefore be helpful when designing programs to address the proximal sexual factors. They can also be used to create items for questionnaires in survey research.

¹⁶ “+” denotes a protective factor; “-” denotes a risk factor; “+/-“ denotes a factor that was a protective factor for one or more behaviors and also a risk factor for one or more other behaviors.

Perceived peer norms about having sex

- + Most of my friends have not had sex.
- + Most of my friends think people my age should wait until they are older before they have sex.
- + Most of my best friends think I should wait to have sex.
- Most of my friends believe it's okay for people my age to have sex.
- Most of my friends think it is okay to have sex with a steady boyfriend or girlfriend.
- Most of my friends think it is okay to have sex with a couple of different people each month.

Perceived susceptibility to pregnancy or STD/HIV

- If I have sex without contraception, I would probably get pregnant (or get someone pregnant).
- If I have sex without using a condom every time, I might get an STD.
- If I have sex without using a condom every time, I might get HIV.

Perceived consequences of pregnancy and childbearing

- + I am not emotionally ready to be a parent.
- + I am not financially ready to be a parent.
- + Being a teen parent would make it more difficult to finish school.
- + Being a teen parent would keep me from doing many things I like to do.
- + Being a teen parent would really mess up my life.
- + If I got pregnant (or got someone pregnant), I would be very embarrassed.
- + Getting pregnant at this time in my life is one of the worst things that could happen to me.
- Having a baby to take care of would make me feel loved and needed.
- If I had a baby, for the first time, I would have something that is really mine.
- If I had a baby, I would never be lonely.
- If I had a baby, my boyfriend would be more committed to me.
- If I had a baby, I would feel more like an adult.
- If I had a baby, I would feel I had done something meaningful in life.
- My family would help me raise a baby.

Perceived consequences of sexually transmitted disease and HIV/AIDS

- + If I got an STD, I would be very embarrassed.
- + If I got an STD, I would hate to have to tell my partner.
- + If I got an incurable STD, it would mess up my life.
- + If I got an incurable STD, I might need to deal with it the rest of my life.
- + If I got an incurable STD, I would worry about infecting others.
- + Getting AIDS would really mess up my life.
- + Getting AIDS might mean that I would have to take lots of pills the rest of my life.
- + Getting AIDS would prevent me from doing many things I want to do.

Motivation to avoid contracting an STD

- + I really want to avoid getting an STD.
- + Not getting an STD is important to me.
- + Getting an STD is not a big deal.

Motivation to avoid pregnancy and childbearing

- + Getting pregnant (or getting someone pregnant) would really mess up my life.
- + I really don't want to get pregnant (or get someone pregnant).
- + I am really not ready to be a parent.
- + If I get pregnant (or get someone pregnant), it is not a big deal.
- + Sometimes I think I'd like to be pregnant (or get someone pregnant).
- I'd like to be a mother (or father).

Self-efficacy to abstain from sex

- + I have the ability to abstain from sex until married.
- + I can abstain from sex until I'm finished with high school.
- + My boy/girlfriend cannot pressure me into having sex.
- + My friends will not pressure me into having sex.
- + If someone I liked a lot wanted me to have sex, I am sure I could say "no."
- + If someone I liked a lot wanted me to have sex, I am sure I could say "no" without hurting his/her feelings.
- + If someone I liked a lot wanted me to have sex and threatened to break up with me unless I had sex, I am sure I could say "no."
- + If someone I liked a lot wanted me to have sex and I had been drinking alcohol, I am sure I could say "no."

Intention to have sex

- + I intend to abstain from sex until I am older.
- + I intend to abstain from sex until I am married.

Perceived effectiveness of condoms and contraception

- + If used correctly and consistently, condoms are effective at preventing pregnancy.
- + If used correctly and consistently, contraception is effective at preventing pregnancy.
- + If used correctly and consistently, condoms are quite effective at preventing some STDs.
- + If used correctly and consistently, condoms are effective at preventing AIDS.

Personal values and attitudes about condoms & contraception

- + I believe condoms should always be used if a person my age is sexually active.
- + I believe contraception should always be used if a person my age is sexually active.
- + I believe that condoms should always be used if a person my age has sex, even if the two people know each other very well.
- + I believe that condoms should always be used if a person my age has sex, even if they are going together.
- + I believe that condoms should always be used if a person my age has sex, even if the girl uses contraception.
- + I believe that another form of contraception should always be used, even if the guy uses a condom.

Perceived costs & barriers to using condoms

- Using condoms is a hassle.
- Using condoms disrupts the mood.
- Condoms reduce pleasure of sex.
- Condoms reduce sensation during sex.
- I would be embarrassed to buy birth control in a store.
- When I'm all excited, I don't want to think about using condoms.
- Condoms are messy.
- I would be afraid my partner would be angry if I asked him/her to use a condom.
- I am afraid that my sex partner would think I am infected with and STD if I asked him/her to use a condom.
- Condoms create distrust during relationship.
- Condoms are embarrassing to use.
- + Condoms are comfortable to use.
- + Using condoms can be sexy.
- + Using condoms makes me feel more secure that I will not cause a pregnancy or get an STD.

Perceived embarrassment using condoms

- It would be embarrassing to buy a condom.
- It would be embarrassing to ask my partner to use a condom.
- It would be embarrassing to put on a condom.

Perceived peer norms about condom or contraceptive use

- + Most of my friends believe condoms should always be used if a person my age has sex.
- + Most of my friends believe condoms should always be used if a person my age has sex, even if the girl uses birth control pills.
- + Most of my friends believe condoms should always be used if a person my age has sex, even if the two people know each other very well.
- Women who carry condoms are looking for sex.
- If you tell your partner you want to use a condom, your partner will think you're having sex with other people.
- + Most young people use contraception when they have sex.
- Very few young people are doing anything to protect themselves against sexually transmitted disease.

Perceived self-efficacy in using condoms or contraception

- + It would not be too hard for me to buy condoms.
- + It would not be too hard for me to carry a condom and have it with me if I needed it.
- + If I decided to have sex with someone, I am sure that I could talk to my partner about using condoms.
- + If I decided to have sex with someone, I am sure that I could get my partner to agree to use condoms.
- + If I decided to have sex with someone but did not have a condom, I am sure that I could stop myself from having sex until I got a condom.
- + If my partner refused to use condoms, I could refuse to have sex.

- + If I decided to have sex with someone but did not have any form of contraception, I am sure that I could stop myself from having sex until one of us could get an effective method of contraception.
- + I am sure that I could use a condom correctly.
- + I am sure that I could use a condom correctly even when highly aroused.
- + I am sure that I could use a condom correctly every time I have sex.
- + I am sure that I could use a condom every time even with my girl/boyfriend.
- + I am sure that I could use a condom even if I had drunk alcohol or used drugs.
- + I am sure that I could take contraception consistently and correctly.

Intention to use condoms or contraception

- + If I have sexual intercourse in the next year, I am sure that I will always use a condom.
- + If I have sexual intercourse in the next year, I am sure that I will always use an effective method of contraception.

Appendix:

**Matrix 1:
Risk and Protective Factors That Affect
One or More Sexual Behaviors or Outcomes,
by Domain**

Introduction

This document is designed both as a stand-alone matrix and as the appendix to the following paper: “Sexual Risk and Protective Factors” by the same authors. The full paper summarizes the content of this matrix, discusses causal relationships among these factors, and indicates which factors can most readily be changed¹⁷.

Goals

The overall goal of this matrix is to specify and summarize research studies measuring the relationships between a wide variety of risk and protective factors and their respective sexual behaviors. Accordingly, this matrix:

1. Identifies in the columns of the matrix eight important sexual behaviors and their consequences: initiation of sex, frequency of sex (which includes return to abstinence), number of sexual partners, use of condoms, use of other forms of contraception, pregnancy, childbearing and sexually transmitted disease.
2. Specifies in the rows of the matrix the risk and protective factors found in research studies that may ultimately have a causal impact on one or more of the sexual behaviors in the columns.
3. Specifies in the cells of the matrix the particular studies that have measured the relationship between each risk and protective factor and each behavior.
4. Specifies in the rows of the matrix whether each study found the factor to be a risk factor or a protective factor or to be non-significantly related to each of the sexual behaviors.

Criteria for Inclusion of Studies

As noted in the full article, to be included in this matrix, studies must have:

1. Been conducted in the United States¹⁸
2. Examined the impact of factors on one or more of the eight sexual behaviors specified above
3. Been based on a sample of teenagers, roughly 18 years of age or younger
4. Included a sample of at least 100 for significant results and a sample of at least 200 for non-significant results¹⁹
5. Met scientific criteria required for publication in professional peer-reviewed research journals or other publications
6. Been published between 1990 and 2004 inclusive
7. Included multivariate analyses²⁰

¹⁷ Readers in search of information on a particular risk or protective factor should consider using the find function (simultaneously pressing the “control” and “f” buttons on your keyboard) to search for a particular word describing that factor, e.g., “income,” “attachment,” “self-esteem,” or “attitudes.”

¹⁸ A second matrix by Kristin Mmari and Bob Blum will soon be available on risk and protective factors in the developing world (www.teenpregnancy.org).

¹⁹ A few studies with sample sizes less than 100 were included if they were good studies involving significant results for new and interesting factors not found in other studies.

²⁰ A few studies without multivariate analyses were included if they involved new and interesting factors not found in other multivariate studies.

Criteria for Inclusion of Results within Studies

Some studies presented multiple results for the same factor. For example, they may have included results for multiple measures of a particular behavior (e.g., condom use at first sex, condom use at last sex, and frequency of condom use) or results for different groups (e.g., both sexes, different racial and ethnic groups, or different age groups). If the results within a study were consistent for a particular factor, then, of course, those results were incorporated once in the matrix. If the results for a particular factor were inconsistent across different measures or groups, then all the different results were included in the matrix. Thus, hypothetically, the results presented in the matrix would show that a specific factor was a protective factor for a particular behavior, a risk factor for that behavior, and not significantly related to that behavior, if these were the findings for three different groups in the study.

Many studies presented results for different statistical models that controlled for different potentially confounding variables. When different models were presented, typically the results from the model with the most variables were included.²¹

How to Use the Matrix

Readers can use this matrix in different ways:

- To gain an understanding of the wide range of risk and protective factors that affect any of the sexual behaviors and their outcomes, readers can visually examine the different domains and sub-domains of risk and protective factors.
- To determine whether a potential factor has been found to be a risk or protective factor for any of the eight sexual behaviors and their outcomes, readers can:
 1. Visually review the risk and protective factors in the appropriate domain.
 2. Use the “find” option (“control f”) to search for a particular word describing that factor, e.g., “income,” “attachment,” “self-esteem,” or “attitudes.” Be sure to search for all uses of the word, for it may appear multiple times in different domains. For example, “income” may be in a factor describing average community income and also in a factor describing family income.
- To identify findings from a particular study, readers can search for the study in the references and then use the “find” option to find the reference number in the matrix.
- To assess which factors are most likely to be important for their own target populations, readers can identify those factors that 1) have many studies demonstrating they are significant factors and 2) have multiple studies that

²¹ Results from models were included if they statistically controlled for those variables that might be confounding (they might co-vary with both the factor and the behavior), but sometimes results from models were excluded if the models included variables that were in the causal pathway to the behavior. For example, when examining the impact of parent-child communication about sex on initiation of sex, presented results did control for family income because family income may be correlated with both parent-child communication and initiation of sex and might therefore add to (or subtract from) the actual causal relationship between parent-child communication and initiation of sex, but results did not control for intention to have sex, because parent-child communication may affect intention to have sex which in turn affects actual initiation of sex.

consistently demonstrate the factors are risk factors (or a protective factors). Readers should then read the relevant studies to be certain that the factors were significant in populations similar to their own target populations.

Some Cautions about Drawing Conclusions from the Matrix

While this matrix should be used to reach tentative conclusions about the impact of different risk and protective factors on sexual behaviors and their outcomes, readers should *not* simply count the number of studies with significant findings for particular factors and then conclude that those factors with more significant findings necessarily have a stronger causal impact than factors with fewer significant findings. Similarly, readers should *not* simply calculate the ratio of significant findings to non-significant findings and then conclude that those factors with the largest ratios necessarily have the largest causal impact. Rather, it is important for readers to *actually read* many of the referenced studies about relevant risk and protective factors and then make appropriate assessments. Why is this important? There are several reasons: 1) Some factors are far more commonly measured in studies, even though they do not necessarily have a greater causal impact; 2) some studies were far more rigorous in assessing causal impact than others; 3) some studies may have found that a factor was significant for many groups but not quite significant for one group, yet both the significant and non-significant results were entered in the matrix once; 4) requiring multivariate analyses might have excluded a few potentially important factors; and 5) some statistical problems (such as multicollinearity and causality) are difficult to resolve in many studies. Thus, factors with multiple studies consistently demonstrating a significant impact do have relatively strong evidence that they have a causal impact on the specified behaviors, but actually reading some of the studies, particularly the more rigorous studies, will enhance understanding of the role of those factors.

Future Plans

Each year we hope to search data bases for new studies and add those studies to this matrix as appropriate. Thus, this matrix is an on-going work in progress. We, the authors, encourage you to send us articles that you believe meet our criteria and should be included in subsequent versions. We also welcome ideas on methods of improving this matrix's utility.

Until then, we hope this is useful to you.

Matrix:

Risk and Protective Factors That Affect One or More Sexual Behaviors or Outcomes, by Domain

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
Environment/ Context									
Season:									
Early summertime months	Risk	[217]							
December (holiday season)	Risk	[217]							
Region:									
Northeastern	Protective	[357]							
North Central	Risk							[13]	
South	Risk	[162]			[54]			[13]	
West	Risk	[54]			[294]			[13] [370]	
Region measured was not found to be significant	NS	[54] [162]			[54] [294]	[54] [68, 110]	[163] [299]	[361]	
State:									
Higher education level	Protective						[221]	[270]	
Higher levels of female labor force participation	Risk							[270]	
Higher crime rate	Risk							[270]	
Higher minimum legal drinking age	Protective								[159]
Higher tax on beer	Protective								[159]
Coordinated programs and policies for addressing teen pregnancy	Protective						[270]		
Higher level of state funding for family planning	Protective							[270] [401]	
Greater social capital	Protective					[97]			
Greater income inequality	NS					[97]			
Higher incidence AIDS	NS		[207]	[207]	[207]				
Restrictive laws regarding contraceptive licensing, advertising, or selling	Risk						[233, 234]		
	NS						[234]		
Parental involvement legislation for abortion	Protective						[7]		
	Risk							[370]	
Restricted public funding for abortion	Risk							[270] [370]	

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
Community:									
Living in an urban area (vs rural)	Protective	[14] [255]	[255]	[255] [353]	[174] [353]		[163]	[185] [13]	
	Risk	[134, 162, 174, 210] [324] [395]			[207]		[134] [163] [353]	[361]	[174]
	NS	[21] [54] [103] [126] [162] [167] [277] [324] [357] [395]	[106] [126] [205] [353]	[126] [205] [332] [353]	[54] [294]	[54] [68, 110] [126] [167] [205] [242] [311] [353]	[32] [163] [167] [205] [353]	[13] [21] [167] [185] [205] [238] [370]	[90]
Higher ratio of men to women	Risk		[35]					[205]	
	NS	[35]	[205]	[205]		[205]	[205]		
Higher percent of women aged 15-25 never married	Protective						[199]		
Higher percent white	Protective						[199]	[370]	
Higher percent black	Protective	[35, 53]		[353]					
	Risk	[103]				[353]	[221]		
	NS	[103]	[205] [353]	[205] [353]	[353]	[53] [205] [353]	[205] [353]	[205]	
Higher percent Hispanic	Protective	[374]		[205]				[104]	
	Risk					[205] [353]			
	NS		[205] [353]	[353]	[353]	[353]	[205] [353]	[205]	
Higher percent foreign born	Protective	[35, 53] [61]							
	NS	[61]				[53]			
Stronger ties to countries of origin	Protective							[104]	
Higher residential mobility	Risk	[53]	[35]						[377]
	NS	[61] [377]				[53]			[377]
Higher percent of families headed by married couples	Protective							[370]	
Higher proportion female-headed households	NS		[205]	[78] [205]		[205]	[205]	[205]	
Higher divorce rates	Risk	[53]				[53]			
	NS	[35]							
Higher school dropout rate	Risk		[35]					[88]	
	NS	[35]							
Higher education levels	Protective	[53]					[199]	[370]	
	NS					[53]			
More community opportunities	Protective							[34]	
Greater female labor force opportunities	Protective					[53]			

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
	NS	[53]							
Higher percent of females employed	Risk	[35] [52]					[199]		
	NS	[35]							
Higher percent of males employed	Risk						[199]		
Higher unemployment rate	Risk	[377]	[255] [353]	[353]			[353]	[34] [205]	[377]
	NS	[52]	[205] [353]	[205] [353]	[353]	[205] [353]	[205] [353]	[370]	[377]
Lower average job wage	Risk							[34]	
More high-status workers	Protective							[88]	
Higher population of working class	NS								[128]
Higher income level / socio-economic status	Protective	[61]	[205]					[57, 221] [199]	
	Risk					[205] [353]	[205]	[370]	
	NS	[35] [272] [352]	[353]	[205] [353]	[353]	[272] [353]	[353]	[34] [205] [369] [370]	[128]
Higher proportion on welfare	Risk	[272]					[273]		
	NS	[273]	[205]	[205]		[205]	[205]	[205]	
Greater religiosity	Protective							[370] [401]	
	NS	[35, 53]				[53] [242]			
Better neighborhood quality	Protective	[61] [214]	[21]			[245]	[99]		
	Risk			[264]					
	NS	[21] [264]	[264]	[21]	[264]	[245]		[369]	
Greater neighborhood monitoring by adults in community	Protective	[61] [350]							
	NS	[273]					[273]		
Greater youth participation in a stable community	Protective							[34]	
Greater community social disorganization (violence, hunger, substance abuse)	Protective	[210]							
	Risk	[209] [211] [374]	[213]					[35, 104]	
Higher levels of community stress	Risk						[270]		
Higher crime rate / arrest rate	Risk	[35]					[211]		
Media exposure to AIDS information	NS				[166]				
Greater number of clinics	Protective	[37] [53]							
	NS					[53]			
Clinic provides contraceptive guidance	Protective					[280]			
Clinic provides advance emergency contraception	Risk					[305]			
Greater clinician-client rapport (time, confidentiality, trust, etc.)	NS					[280]			
Higher STD rate	NS								[182]
Higher percent of females 15-19 using family	Risk		[35]						

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
planning services									
Higher teen non-marital birth rate	Risk	[53]							
	NS					[53]			
School:									
Urban school community	Risk	[343]		[149]					
	NS				[149]				[149]
Private religious school (e.g. Catholic vs public)	Protective	[312]					[238]	[238] [409]	
	NS	[204] [377]			[204]	[204]	[312]		[377]
Private non-religious school	Protective	[377]							[377]
	NS								[377]
College prep program (vs. vocational or general)	Protective							[409]	
School for students with cognitive disabilities	Protective	[154]							
	NS	[154]							
Learning-focused school setting	Protective						[190]		
Conflictual school setting	NS						[190]		
Students grouped by ability (at the class level)	NS							[238]	
Higher average number of students per public secondary school	Risk							[34]	
Higher student to teacher ratio	NS							[34]	
Higher student to school counselor ratio	NS							[34]	
Higher percent of students with single mothers	NS							[238] [271]	
Higher percent of minority students	Risk	[324]						[238] [409]	
	NS	[324]						[238] [271]	
Higher percent of students receiving free lunch	Risk							[238]	
	NS							[238] [271]	
Higher per capita funding for schools (federal, state, or local)	NS							[34]	
Higher school dropout rates	Risk								
	NS	[324]	[205]	[205]		[205]	[205]	[34] [205]	
Higher rates of school crime / lower levels of safety	Risk						[73]	[271]	
	NS							[271]	
Sex education in school	Protective					[242]			
	Risk	[204] [286]					[286]	[238] [271]	
	NS	[23] [204] [264] [286]	[264]	[264]	[229] [204] [264] [341]	[229] [204] [311]	[23] [286] [239]	[156] [238] [241] [271]	
HIV / STD education in school	Protective	[204]	[203]	[149]	[149]				

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
	NS	[37] [204] [308]	[207]	[11] [207] [308] [404]	[11] [166] [204] [207] [308] [404]	[240] [204] [308]	[308]		[149]
Contraception instruction in school	Protective	[228] [35]			[149] [246]	[242, 246]	[308]		
	Risk				[204]	[204]			
	NS	[53] [204] [308]	[203] [228]	[207] [308]	[207] [308]	[240] [228] [246] [308]			[149]
Condom distribution at school	Protective	[39]	[39] [264]	[264]	[39]				
	Risk					[39]			
	NS	[264]		[39]	[91] [264]		[39]		
Family:									
Live with two parents	Protective	[24] [102] [154, 162, 167, 210, 226] [61] [74] [82] [214] [227] [230] [5, 22, 44, 52, 54, 257] [259] [260] [261] [273]	[203, 205, 213] [363] [35]	[2] [78] [205]	[181]	[240] [87] [242] [239]	[62] [99] [181] [205] [221] [234] [18, 73, 238, 408] [273] [314]	[13] [185] [205] [238] [271] [241, 364, 409]	[349]
	NS	[24] [30] [36] [76] [102] [162] [252] [261] [324] [377] [395]		[205]	[54] [229]	[53] [54] [62] [240] [87] [205] [229] [242] [272] [372] [239]	[23] [62] [163] [205] [234] [314] [351] [364]	[21] [205] [238] [361] [369] [408]	[377]
Parents cohabiting (unmarried)	Protective			[102]					
	Risk	[134]	[203]						
	NS	[102] [273] [377]		[102]			[273]		[377]
Live with parent and stepparent (vs. both parent)	Risk	[24] [167] [230] [256] [314] [376] [395] [377]				[242]	[298]	[409]	[377]
	NS	[24] [36] [230] [403]			[229]	[167] [229]	[167]	[167]	[377]
Live with mother only / female-headed household	Risk	[403]							

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
	NS	[204] [256] [314] [403]	[353]	[353]	[278] [294]	[204] [353]	[298] [353]	[409]	
Live with father only	Risk	[403]						[409]	
	NS	[403]							
Live with one parent (vs. no parent)	Protective	[307] [167]						[409]	
	NS	[307]				[167]	[167]	[167]	
Other family structure / living situation	Protective	[307]							[377]
	Risk	[395]						[361]	
	NS	[307]				[62]	[62]		[377]
Not living with biological mother	Risk							[238]	
	NS							[238]	
Presence of mother in the home	Protective	[184] [377]							
	NS		[203]						[90] [377]
Presence of father in the home	Protective	[84] [129] [103] [403] [377]					[129]		
	NS	[84] [103] [403]							[90] [377]
Parents not together at time of teen's birth	Risk	[167]							
	NS	[403]				[167]	[167]	[167]	
Family disruption (divorce, change to single-parent household or re-marriage)	Risk	[261] [272] [65] [21] [134] [403]		[21]			[134]	[402]	
	NS	[260] [261]	[21]				[99]	[241] [369]	
Presence of a grandparent in the home	Protective							[13]	
Larger family size/greater number of siblings	Protective	[126] [204]				[131]			
	Risk	[30] [324]					[234]	[13] [146] [238]	
	NS	[23] [61] [126] [204] [257] [277] [324]	[126]	[126]	[204]	[126] [204]	[23] [99] [234] [299]	[238] [361]	

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
Higher parental education	Protective	[2, 21, 42, 140] [52] [82] [184] [145] [154] [162] [67] [103] [230] [252, 254, 261] [258] [259] [256] [272] [327, 334, 337, 350] [357] [35, 53] [54] [377]		[2, 21, 78]	[174] [54, 278] [246] [334]	[126] [167] [242] [246] [311] [388] [54]	[32, 118, 163, 167] [99] [234] [298] [314] [73, 323, 408] [405]	[167] [185] [241] [369] [57, 409]	[377]
	Risk	[145] [140] [243]							
	NS	[21] [35] [36, 42] [76] [84] [103] [126] [154] [41] [161] [162] [230] [204] [252] [254] [257] [261] [256] [272] [273] [277] [333] [324] [376]	[21] [126] [203] [288] [334]	[78] [334] [353]	[229] [204] [334] [353]	[53] [62] [240] [68, 110] [126, 186] [229] [204] [242] [245] [272] [334] [353] [239]	[32] [62] [234] [351] [353]	[21] [271] [273] [361] [408]	[182] [192] [377]
Higher parental job status	NS	[76] [377]					[405]		[377]
Higher income level / socio-economic status	Protective	[24] [5, 35, 44] [134, 140, 210] [214] [257] [317]		[21]	[397]	[87] [176]	[31, 134] [99] [205] [18, 176, 238, 314] [330]	[13] [21] [238] [271] [57, 409] [361]	
	Risk	[140] [226]	[205] [207] [353, 363]	[205] [207] [353]	[255]	[353]		[238]	

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
	NS	[21] [24] [52] [65, 334] [61] [76] [230] [260] [262] [256] [264] [272] [273] [277] [314] [376]	[21] [213] [262] [264] [330] [334]	[78] [262] [264] [334] [353]	[229] [207] [264] [294] [334] [353] [341]	[68, 110] [62] [87] [229] [205] [311] [334] [353] [372]	[62] [273] [306] [330] [353] [405]	[205] [238] [271] [364]	[66] [365]
Family owns home	NS	[21]	[21]	[21]				[369]	
Mother employed	Protective	[145] [167]					[167] [211, 408]		
	Risk	[145] [167] [204] [277] [35]		[255]	[255]		[167]	[185]	
	NS	[162] [204] [260] [277]			[204]	[167] [204] [311]	[234] [299]	[167] [185] [241] [408]	
Parents unemployed	Risk							[349]	
Receipt of welfare (AFDC, TANF)	Protective						[93]		
	Risk	[21] [126]				[55]	[4]	[21] [406, 409]	
	NS	[126] [228] [260] [273] [352]	[126, 205] [207] [228]	[126] [205] [207]	[207] [278]	[126] [205] [228] [311]	[93] [205] [273] [351] [406]	[205]	[349]
Intergenerational receipt of welfare	NS	[272]							
Private health insurance	Protective	[22]					[22]		
	NS	[23]							
Public health insurance	NS	[23]				[311]			
Foreign language spoken at home	Protective	[333]					[234]		
	NS	[183] [204]			[204] [339]	[204]			
Lived outside the US	NS	[243]							
First or second generaton US resident	Risk	[183]							
	NS	[23] [61] [374]					[23]		
Foreign-born	Protective	[377]							
	NS								[377]
Residential mobility	Protective							[167]	
	Risk	[167] [357]		[21]			[99] [167]		
	NS	[21]	[21]						

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
Greater family religiosity	Protective	[21] [327] [35, 357]		[207]					
	NS	[42] [252] [256]						[21]	
More conservative family attitudes towards women	Risk	[103]							
	NS	[103]							
Greater family social support	Protective				[119]	[75]		[369]	
	NS	[75] [277]	[75]		[119]				
Family problem solving	NS				[119]		[405]		
Mother abused	Risk	[165]					[8]		
	NS			[165]					
Exposure to family conflict	Risk	[248] [247]			[119]				
	NS				[119]			[369]	
Parental antisocial behavior	NS	[65]							
Incarcerated family member	Risk	[165]		[165]					
Household mental illness / depression	Risk	[165]		[165]					
	NS							[369]	
Recent family suicide attempts	Risk	[312]							
	NS						[312]		
Higher parental educational / college expectations for teen	Protective							[156] [369]	
	NS						[405]	[156] [238] [271]	
Parental tobacco use	Risk	[395]							
Household substance abuse (alcohol or drugs)	Protective						[193]		
	Risk	[72] [165]	[236] [283]	[165] [236] [283]			[72]		
	NS	[260] [395]							
Parental lack of seatbelt use	NS	[395]							
Parental deviant behaviors as adolescents	NS	[277]							
Mother's age at first sex was older	Protective	[277]						[185]	
Mother's age at first birth was older	Protective	[2, 140] [84, 204] [272] [394]	[207] [353]	[2] [207] [353]	[255] [353]		[211] [353]	[369] [185, 241]	
	NS		[353]	[353]	[204] [353]	[204] [353]	[353] [406]	[406]	
Single mothers' dating behaviors	Risk	[393]							
An older sibling who had sex	Risk	[125, 394]							
An older sister who gave birth as an adolescent / Greater number of parenting sisters	Risk	[126] [123] [124]	[123, 146]					[146]	
	NS	[55]	[126]	[126]		[126]			

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy/ Impregnation	Child-bearing	STD
Parental disapproval of teen or pre-marital sex	Protective	[174] [29] [24] [42] [102, 350] [43, 116, 117, 154, 178, 226, 252, 312, 318, 393, 394]	[29, 116, 117, 178, 263] [177]	[263, 264]			[117]		[90]
	NS	[29] [24] [82] [252] [264] [263] [256]	[264]	[102]	[264] [263]	[116] [117] [177] [186]	[177] [312]		[90] [192]
Parents would punish if discovered teens' sexual activity	Protective	[116] [183]							
Parental acceptance and support of contraception	Protective				[187] [397]	[186] [177] [229]			
	Risk	[312]	[177]				[312]		
	NS	[183]			[218] [229] [341]		[177]		
Parental disapproval of early parenthood	NS	[183]							
Pregnancy would not embarrass family	Protective	[154]							
	NS	[154]				[116]			
Mother's perception that adolescent is in a steady relationship / is sexually active	Risk	[117]					[117]		
	NS					[117]			
Mother uncomfortable discussing sex	NS	[42] [252]							
Mother frequently discusses sex w/teen	Risk	[102]							
	NS	[42]		[102]					
Mother recommends specific birth control	NS	[42] [252]							
Peer:									
Older age of peer group and close friends	Risk	[23] [70] [84] [82]							
	NS	[70] [261]							
Close friends' closeness to parents	Protective	[23]							
	NS	[23]							
Greater number of friends / larger peer group	Risk	[70]							
	NS	[70]							
More peers of the opposite sex	Risk	[70]							

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
	NS	[70] [261] [277]							
Peers with poor grades and high non-normative behavior	Risk	[23]							
	NS						[23] [190]		
Friends with good grades and little non-normative behavior	Protective	[23] [70]					[22, 190]		
	NS	[70] [273]					[273]		
Peers with lower achievement orientation	Risk	[254]							
	NS	[254]						[156]	
Peers with positive attitudes about preventive health	Protective	[50]			[50]				
Peers who use tobacco	Risk	[237]							
Peers who drink alcohol	Risk	[198, 201] [43]				[201]		[201]	
	NS	[76]			[119]				
Peers who use drugs	Risk	[53] [75] [76] [395]	[75]						
	NS	[75]	[75]		[119]				[63]
Peers who sell drugs	Risk								[63]
Peers who engage in deviant behaviors	Risk	[264] [61] [23]		[264]			[336]		
	NS	[52] [65] [76] [86] [198]	[264]		[119] [264]		[268] [351]		[66]
Peers with permissive attitudes about sex	Risk	[226, 312] [243] [318] [67, 226, 357, 368]							
Peers who believe it is better to initiate sex when older	Protective	[368]							
Peers who believe it is okay to have sex with multiple partners	Risk			[20]					
Peers with pro-childbearing attitudes/behavior	Risk	[21] [228] [368]	[21]	[21]					
	NS	[358]	[228]		[358]	[228]			
Boys gain respect if sexually active	Protective	[198]							
	Risk	[198]							
Peers with later sexual debut	Protective	[390]		[390]					

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
Sexually active peers	Risk	[38] [124] [198, 226] [227] [228] [261, 304, 318] [321] [357, 358] [243, 319, 390] [359]	[29, 228]	[390]	[75]	[75]			
	NS	[75]	[75]		[358] [359]	[228]			
Greater peer sexual risktaking	Risk		[264]		[264]				
	NS	[264]		[264]					
Peer norms opposing acquisition of an STD	Protective								[326]
Positive peer norms and support for condom use	Protective				[96] [107, 109] [321] [339, 390] [20] [187]				
	NS				[127]				
Greater peer use of condoms	Protective	[358]			[91] [304] [358] [390]				
	NS	[358]			[60]				[396]
Positive peer norms and support for contraceptive use	NS					[186]			
Good friend(s) who have been pregnant/gotten someone pregnant	Risk						[147]		
	NS				[358]				
Good friend(s) who are teen mothers	Risk						[168]		
Partner:									
Having a partner the same age (vs. no partner)	Risk	[243]							
Partner has a higher level of education at first intercourse	Protective						[408]		
	NS							[408]	
Partner different race/ethnicity	Protective				[139]				
	Risk							[408]	
	NS				[206]	[138] [242]	[408]		[137]
Partner same religion	Protective						[408]		
	NS							[408]	
Partner is very religious	NS						[408]	[408]	
Partner lives in different neighborhood	Protective				[139]				
	NS					[138]			[137]
Greater percentage of year living with partner	Protective				[255]				
	Risk		[255]						

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
Partner goes to different school	Risk				[139]	[138]			[137]
Having an older romantic or sexual partner	Protective				[204]	[204]			
	Risk	[184] [243]		[386]	[113] [138] [242] [206]	[34, 100, 242, 388] [239]	[2] [93] [216] [100, 408]	[2, 204]	[48] [89] [137] [365] [2] [26]
	NS				[200] [297, 365] [389]	[240] [242] [239]	[323] [408]	[241] [408]	[63]
Partner use / abuse of alcohol / illegal substances	NS				[196]				[182]
Higher risk status of partner	Risk				[206]				
	NS				[206] [235]				
Partner has STD	Risk								[276]
	NS				[365]				
Greater partner support for condom use	Protective				[187, 212] [235] [291, 294] [325] [278, 291, 389]				[325]
	NS				[325]				
Greater partner support for contraceptive use	Protective					[278, 389] [394]			
	NS					[186] [388]			
Partner used contraception at first intercourse	Protective				[206]				
	Risk				[206]				
	NS				[206]				
Greater partner sexual experience	Risk				[204, 206]				
	NS				[206]				
Partner has multiple sex partners	Risk								[276]
	NS				[365]	[158]			[365]
Individual									
Biological:									
Being male (vs female)	Protective	[309] [343]	[177] [302]		[11] [60, 109, 197, 344] [229] [341]	[117]			[192] [137] [326] [366] [377]

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
	Risk	[44, 117] [37] [214] [198, 219] [333] [307, 321] [368] [394] [30, 176] [377]	[75, 106]	[2, 21] [11, 171, 262]	[138] [344]	[138] [177] [229]			[2]
	NS	[21] [24] [44] [82] [382]	[21]	[309]	[316]	[382] [239]			
Higher testosterone levels in both genders	Risk	[155]							
Older pubertal development and timing	Protective	[30, 65, 117, 135] [61] [74]							
	NS					[117]			
Older age / higher grade level	Protective	[36, 134]		[173] [335]	[10] [206] [397]	[117] [177] [75, 186] [245] [176, 311, 334]			[220]
	Risk	[2, 36, 117, 140, 154] [74] [82] [37] [126] [75] [145] [52] [230] [219, 228, 261] [309] [257] [258] [262] [256] [272, 273] [307, 314, 321] [343] [357, 358, 368] [394] [35, 53] [23, 54, 176, 227, 334] [24] [324]	[75] [106] [126] [177] [203, 207] [205] [228] [262] [289] [302] [330] [213] [288] [334]	[2] [11] [149] [180] [205] [207] [262] [309] [302] [315] [171, 263, 332] [379]	[11] [109] [149, 166] [207] [275, 278] [294] [291, 302, 310, 315] [344] [356] [335] [334]	[87]	[99] [163] [4] [205] [330] [355] [408] [23, 100, 151, 176]	[100, 146, 380] [205]	[49] [326] [365] [375] [377]

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
	NS	[24] [52] [53] [230] [145] [188] [243] [252] [261] [256]	[35] [126] [288] [334]	[126] [180] [188] [309] [302] [334] [335] [379]	[108] [138] [229] [206] [207] [245] [315] [316] [334] [345] [378]	[53] [55] [62] [87] [126] [138] [229] [205] [228]	[62] [117] [177] [306] [330]	[21] [180]	[49] [90] [192] [149] [377]
Older age of menarche	Protective	[36, 134] [272, 314] [327] [35] [54, 261] [324]	[35]				[134]	[185]	
	Risk						[4]		
	NS	[243] [273] [277] [324]			[54]	[54]	[234] [273] [323]	[241]	
Greater physical maturity (appears older than most)	Risk	[45, 135, 154] [117] [254] [65, 312]	[177]				[117]		
	NS					[117] [177]	[45] [177] [312]		
Physically attractive	Risk	[154] [261]							
	NS	[154] [261]							
Physically disabled (minimally)	Risk	[74]							
Physically disabled (severely)	NS	[74]							
Race/Ethnicity:									
Non-Hispanic white	Protective	[228] [303] [334]	[207]	[207]	[11] [166]				[137]
	Risk			[11]	[275] [341]				
	NS	[382]	[334]	[78] [334]	[207] [334] [345]	[62] [228] [334] [382]	[62]		
Ethnic minority (vs. white)	Protective	[74]							
	Risk	[74]							[90]
	NS	[23] [74] [82] [161]	[106]	[171]	[108]		[23]		

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
Black (vs. White)	Protective				[9, 149] [229] [245] [278] [294] [335]	[245] [246]			
	Risk	[2, 102] [37] [184] [145] [167] [198] [214] [219] [257] [252, 262] [277] [333] [343] [357, 368, 376] [44, 334, 394] [324] [377]	[205, 207] [213] [262]	[11] [78] [102] [173] [149] [205] [207] [262] [171, 332, 344] [335]	[107] [204]	[167] [204] [242]	[99] [167] [205] [306] [23, 176, 408] [323] [330]	[21, 167] [146] [205] [241] [271] [369] [409] [57, 241]	[49, 128] [192] [137] [220] [276] [366] [375] [377]
	NS	[21] [145] [230] [252] [256] [272] [277] [382]	[21] [203] [213] [330]	[21] [78] [332]	[9] [138] [206] [207] [246] [335] [316]	[55] [229] [240] [138] [205] [311] [382] [239]	[62] [314] [330]		[149]
Black vs. Hispanic	Risk	[2]							
	NS				[328]				
Hispanic (vs. white)	Protective	[102, 154] [352] [377]						[13]	[377]
	Risk	[102]		[11] [149] [332] [335]	[11] [138] [278] [206, 316]	[240] [87] [139] [167] [242] [246] [176] [239]	[62] [99] [167] [314] [408] [176] [323]	[167] [271] [369]	[137] [276]
	NS	[24] [44, 126] [167] [230] [243] [252] [256] [277] [343] [376]	[126] [205] [207]	[78] [173] [126] [171] [205] [207] [335] [332]	[149] [229] [206] [207] [245] [246] [294] [335]	[55] [229] [240] [126] [205] [245] [239]	[205] [306]	[205] [241] [409]	[192] [149] [375] [377]
Asian/Pacific Islander (vs. white)	Protective	[24] [172] [256] [377]							[377]
	Risk			[172]					[375]
	NS	[154] [309] [376]		[149] [172] [309]	[149] [172]	[55] [240]	[306]	[409]	[149] [220] [377]
Mixed / other ethnicity (vs. white)	Protective				[335]	[240]			

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
	Risk			[149] [335]		[239]	[205]	[205]	
	NS	[230] [256] [343] [377]	[205]	[205] [335]	[149] [246] [294] [335]	[240] [205] [246]	[306]		[192] [149] [377]
Greater acculturation by Hispanics	Protective	[243]							
	Risk	[138] [188]		[138, 188]			[188]		
	NS	[138] [243]			[138]				
Relationship with Family:									
Being a younger (rather than older) sibling	Protective							[238]	
	Risk	[162, 319, 394]							
	NS	[204] [272]			[204]	[204]		[238]	
Being a middle sibling	Risk	[204]				[204]			
	NS	[204]			[204]				
Higher quality of relationship with siblings	NS	[123]							
Having higher quality of family interactions, support of parents, connectedness	Protective	[42, 102] [61] [244, 261] [262] [312] [23, 178, 189, 327, 350, 352]	[330] [29, 106, 178, 213] [262]	[262]	[244]	[178]	[244] [18, 23] [336]	[369]	
	NS	[24] [102] [244] [261] [374]	[29] [213] [363]	[102]	[91] [244] [339]		[244] [312] [330] [351]	[267] [364] [369]	[192]
Greater amount of time spent with one or both parents	NS	[86]	[29]						
Greater parental-adolescent activities	Protective	[102]					[312]		
	NS	[102] [312]		[102]	[119]				
Greater parent involvement in adolescent's education	Protective							[238]	
	NS	[259]						[238] [271] [409]	
Greater general parental expectations	NS	[210]							
Greater parent influence	Risk	[140]							
Greater quality and level of mother-child interaction / relationship satisfaction	Protective	[102] [116] [117] [252] [273]	[116] [177]	[78] [102]		[116] [117] [177]	[117] [177]		
	Risk			[174]					

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
	NS	[42] [252]		[102]		[62]	[62] [273]		
Greater parental influence on personal decisions	Protective	[86]				[388]			
	NS	[76] [86]							
Greater compatibility between parent and peer expectations of adolescent	Protective	[86]							
	NS	[86]							
Greater parental monitoring / strictness (curfew in place)	Protective	[204] [80] [82] [272, 304, 322] [327, 350, 352] [392] [395]	[181] [75] [263] [29, 263]	[120] [181] [263, 264]	[47] [263] [359]	[255]			[33] [80] [95] [396]
	Risk	[140]			[119]				
	NS	[21, 47] [65] [61] [75] [123] [204] [254] [263] [264] [272] [352] [359] [395]	[21] [29] [47] [75] [264]	[21]	[47] [119] [204] [264] [322]	[204]	[93]	[185]	[47] [66] [80]
Greater parental contact with teen's friends / their parents	Protective	[42] [252]							
	NS	[252]	[21]		[21]			[271]	
Positive perception of parent monitoring	Protective			[112]	[112]	[17, 112]			[112]
Negotiated unsupervised time	Protective				[47]				
	Risk	[47]	[47]						
	NS				[47]				[47]
Perceived parental trust	Protective	[47]	[47]						
	NS	[47]	[47]		[47]				[47]
Greater conflict with parents	Risk	[38]							
General maltreatment by family	Risk	[352]					[211]		
	NS	[58] [352]					[58, 351]		
Verbal abuse	Risk	[165]		[165]					
Physical abuse	Risk	[134] [165, 348, 350]	[363]	[165] [348]	[348]		[8, 73, 134, 193, 348]		
	NS	[58]		[348]	[348]		[58] [323]	[369]	
Living away from parents	Risk								[164]
	NS				[10]				
Homelessness	Risk				[9] [15]		[150]		[6]
	NS				[9]				
Running away from home	Risk	[201]						[201]	
	NS					[55]		[364]	

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
Residing in shelter	Risk						[150]		
Greater general communication (between teen and parent/s)	Protective	[174, 189] [317] [359]	[264] [263]	[263]	[174] [359]	[382]		[156]	
	NS	[263] [264] [382]		[264]	[263] [264]			[271]	
Greater parent/child communication about sex and birth control (and/or pregnancy)	Protective	[123] [390]	[175] [264]	[390]	[110, 174] [218] [322] [390]	[68, 110] [228] [272] [311]	[4]	[185] [241]	
	Risk	[77, 178] [75] [263] [394]	[75, 223] [263]	[77]			[77]		
	NS	[153] [228] [252] [263] [264] [322]	[29] [178] [228] [263]	[175] [263] [264]	[77] [265] [264] [391] [390]	[178] [228]	[153]	[185] [241]	[174] [396]
Greater parent/child communication about sex prior to sex	Protective	[77, 174]		[77]	[174, 265]	[77]			
	Risk						[77]		
	NS	[390]		[390]	[397]				[174]
Greater parent/child communication about STD and AIDS prevention	Protective		[175]	[171]					[98]
	NS			[175]	[391]				
Greater belief that children should follow parents' rules about sexual behavior	NS		[29]						
Greater congruity of parent/child sexual values	NS		[223]						
Relationship with Community and Community Adults:									
Having a mentor	Protective	[382]		[27]					
	NS					[382]			
Involvement in community	Protective	[94] [249]				[94]			
	NS	[382]			[94] [119]	[94] [382]			
Teen perceives that adults care about him/her	Protective								[90]
Witnessed community violence	NS				[91]				
Received condom from outreach worker last month	Protective				[9]				
	NS				[9]				
People important to you (parents, other adults, or peers) approve of contraception / condoms	Protective				[187, 212]				
Discussed HIV/AIDS wth health service provider	Risk			[404]					

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
	NS			[404]					
Attachment to and Success in School:									
Enrolled in school (vs dropped out of school)	Protective	[54, 314]				[100]	[238]	[238] [241]	
	NS				[10] [54]		[314]	[238]	[365]
Expelled	NS					[242]			
Changed schools multiple times	Risk							[271]	
Greater school attendance	Protective	[312]							
	Risk	[188]		[188]					
	NS	[30]					[188] [312]		
Greater participation/involvement in school	Protective	[160]	[213]					[409] [271]	
	NS	[86]	[29] [213] [288]					[271]	
Greater participation in extracurricular activities (i.e., music, drama, clubs) or school sports	Protective	[154] [262]	[262] [330]	[262]				[271] [409]	
	NS	[24] [154] [262] [382]	[262] [330]	[262]	[119]	[382]	[330]	[271]	
Greater popularity in school	Protective	[24]							
	NS	[24]							
Greater educational investment	NS							[238]	
Greater connectedness to school	Protective	[21] [24] [249] [312] [350]							
	NS	[24] [251]	[21]	[21]			[312]	[369]	
Greater perception that teachers are supportive	Protective	[251]							
Positive attitude toward school	Protective		[213]				[298]	[299]	
	NS	[259] [277]	[213]						
Better educational performance	Protective	[24] [30] [52] [45, 102, 140] [70] [86] [82] [2, 154] [75, 210, 243] [214] [273] [333] [35, 259, 307, 312]	[203] [106, 363] [288]	[2, 102]	[119] [245] [356]	[242, 245]	[168, 238] [336] [351]	[13] [238] [271] [369] [361] [364, 409]	
	NS	[65] [61] [86] [70] [243] [307] [352]	[223] [288]		[119]		[23] [45] [190] [273] [312]	[156] [271] [364]	
Behind in school/problems in school	Protective	[140]							

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
	Risk	[204] [35, 53] [300]	[255]			[205] [228] [53]	[205, 364] [406]	[238] [271]	
	NS	[228]	[205] [207] [228] [353]	[205] [207] [353]	[204] [207] [353]	[55] [204] [228] [353]	[353]	[205] [238] [406]	
Either very high or very low intelligence scores	Protective	[154]							
Greater importance of academic achievement	Protective	[21] [75]	[75]						
	NS	[75] [86]	[75]					[21]	
Higher educational aspirations	Protective	[199, 211] [324] [337, 352]	[213, 223]				[211] [298] [238] [351]	[156] [271] [361]	
	NS	[36] [161] [243] [264] [324] [352]	[21] [213] [264] [363]	[21] [264]	[264] [294]		[190] [405]	[271] [299] [369]	
Plans for higher education	Protective	[43, 154]						[238] [271]	
	NS	[259]	[29] [288]					[238]	
Attachment to Faith Communities:									
Spiritual interconnectedness	Protective	[169]							
Greater importance of religion / frequency of prayer	Protective	[285] [395]				[285]			
	NS					[285]	[285]		
Having a religious affiliation	Protective	[2, 45, 102] [82] [204] [23, 312]		[102]	[207]			[185, 241]	
	NS	[52]	[207]	[207]	[229]	[62] [229]	[45] [62] [163] [312]	[156] [185] [238] [369]	[90]
More frequent attendance /greater religiosity	Protective	[24] [21, 103] [157] [162] [167] [228] [249] [257] [285] [250, 253, 261] [256] [314] [35, 154, 203, 210, 312] [324] [382]	[21, 223] [228] [106, 207, 363] [360]	[2] [266] [353]	[255] [353]	[240] [167, 266]	[285] [298]	[241] [271]	
	Risk		[203]						

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
	NS	[24] [30] [36] [103] [140] [162] [204] [261] [266] [264] [277] [324]	[264] [353] [360]	[264] [353]	[204] [245] [250] [264] [294] [310]	[240] [186] [204] [228] [245] [285] [311] [353] [382]	[167] [234] [299] [353] [408]	[167] [241] [408]	
Attend same church as peers	Protective	[277]							
Having a conservative religious affiliation	Protective	[387] [258]		[207]					
	NS	[266]		[266]	[294]	[266]			
Protestant	Protective					[68, 110]			
	Risk						[408] [23]		
	NS	[30] [53] [395]				[53]			
Catholic	Protective	[395]							
	Risk	[36]			[54]				
	NS	[30] [53] [324] [395]	[207]	[207]	[207]	[53] [54] [68, 110] [272] [311]	[408]	[408]	
Baptist	Risk	[324]					[234]		
	NS	[53] [324]				[53]	[299] [408]	[408]	
Catholic, Protestant or Jewish (vs. other or none)	Protective	[54]			[246]	[246]	[234] [298]	[185]	
	NS	[162] [204] [257] [258] [314]			[54] [204] [246]	[54] [204] [246] [372]	[23]	[185]	
Evangelical	Protective			[207]					
	NS		[207]		[207]				
Non-Christian	NS		[207]	[207]	[207]				
Relationships with Peers:									
Greater importance of friends/more peer influence on decisions	Risk	[76]							
	NS	[140] [350] [358]			[358]				
Having peer role models	Protective	[382]				[382]			
Greater peer support / bonding with peers / more social activities with peers	Protective		[213] [249]						
	Risk	[50]	[213]						
	NS	[61] [70] [76]			[50]				
Not being part of a peer group	Protective	[23]							
	NS				[339]	[62]	[62]		

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
Being popular with peers	Protective						[23]		
	Risk	[85] [23]						[271]	
	NS	[154]					[85]	[271]	
Greater importance of popularity	Risk	[254]							
	NS	[254]							
Difficulty talking with others	NS					[55]			
Membership in a gang / problems with gangs	Protective					[308]			
	Risk	[211] [383]		[225] [308] [383]	[225]		[225] [313] [383]	[369]	[225]
	NS	[308]		[308]	[91] [308] [383]	[55] [308]	[308] [383]		
Pressure from peers to engage in high-risk or deviant behaviors	NS		[363]						
Perceive more peer pressure to engage in sexual activity	Risk		[29]						
	NS	[358]	[29]		[358]				
Discuss sexuality with friends	Protective				[328]				
	NS	[153]					[153]		
Discuss contraception with friends	NS				[397]				
Discussed HIV/AIDS with friends	Protective			[171]	[166]				
Relationships with Romantic Partners:									
Dating alone	Risk	[254]							
Currently dating	Risk	[230] [256]				[229]			
	NS				[229]				
Greater frequency of dating	Risk	[261] [357]							
	NS	[261]							
Older age of onset of dating / having romantic relationships	NS			[410]		[311]			
Having a romantic relationship, going steady with a boy/girlfriend, closeness of relationship with partner, longterm relationship (>1 year)	Protective	[253]	[363]		[139]	[240] [139] [186] [242, 245]			
	Risk	[24] [42, 84] [70] [154, 226] [227] [252] [318] [337, 350] [43]	[177]		[235, 274] [365]			[156]	

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
	NS	[24] [84] [70] [226] [252] [318]			[141] [196] [200] [224] [245] [294] [297] [328] [389]	[28] [240] [177] [186] [242]	[177]	[241]	[365]
Having a greater number of romantic or sexual partners	Protective	[23]			[316] [356] [397]				
	Risk	[24]			[108, 136] [294] [397]	[62] [240]	[292] [355] [23, 151]		[49, 63] [137] [192] [89] [142] [202] [220, 276] [287] [326] [365] [375]
	NS				[19] [20] [200] [206] [235] [316] [328] [389] [404]	[158] [240] [372]	[323] [406]	[406]	[63] [182] [339] [365] [366] [384]
Importance of present relationship	Risk			[152]					
Social embeddedness of romantic relationship	Risk					[239]			
	NS	[24]				[239]			
Met partner as a stranger	Risk					[240]			
	NS					[240]			
Just friends with partner / liked partner	Risk					[242] [239]			
	NS					[240] [239]		[241]	
New sexual partner (within past month)	Risk								[63]
	NS								[396]
Newer relationship (<6 months)	Protective				[206, 224] [297] [365]	[239]			
	Risk				[139] [204]	[139] [204] [242] [239]			[276] [396]
	NS				[141] [206] [224] [297]	[239]	[306]		[63] [89]
Time between start of relationship and first sex	Protective					[239]			
	NS					[239]			

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
Monogamous relationship	Protective				[136]	[388]			[192]
	Risk								
	NS				[297]				
Sex partner concurrency (self or partner)	NS								[182]
Ever engaged	Risk		[255]	[255]	[255]	[255]			
	NS				[204]	[204] [242]			
Being married	Protective			[188] [332]					
	Risk				[206]		[18, 32, 176]	[176]	
	NS	[188]					[188]		[384]
Greater emotional intimacy power in the relationship	Protective				[371]				
	NS				[371]				
Greater decision-making power in the relationship	NS				[371]				
Discuss sex with partner	NS	[153]			[91]	[372]	[153]		
Discuss sexual risk or history with partner	Protective				[15] [19] [96] [316, 391] [328]				
	NS								[63] [396]
Discuss STDs/AIDS with partner	Protective				[107] [391]	[228]			
	NS				[224]				
Perceives partner to be HIV infected	Risk								[365]
Perceives (male) partner desires pregnancy	Risk						[93]		
	NS					[407]	[407]	[407]	
Discuss contraception / STD prevention with partner	Protective				[224] [389, 397]	[301, 372]			
	NS				[91] [297]				
Discuss contraception with partner before sex	Protective					[239]			
	NS					[239]			
Agree with partner about contraceptive method	Protective				[278]	[55]			
Experienced physical abuse by partner	Risk	[347]		[347] [404]	[347]	[240]	[347]		
	NS			[404]	[404]	[240] [239]			
Sexual Abuse and Violence:									
Experienced violence	Risk	[31]		[31]					[31]
	NS						[31]		
Experienced dating violence	Risk			[379]	[400]		[400]		[400]
Experienced sexual coercion	Risk	[243]		[284]					

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
Experienced sexual abuse / forced sex	Risk	[72, 102, 134, 165, 260] [64] [272] [346, 348, 350] [362] [51, 243, 308] [375]	[346]	[102] [149, 165] [64] [331] [346] [362] [348] [404] [284] [308] [379] [375]	[149] [331] [346] [404] [375]	[51, 362] [71] [331]	[8] [72] [134] [331] [292] [346] [51, 362] [308]		[64] [149] [331] [381] [375]
	NS	[58] [64] [346]	[363]	[64] [256] [348] [346] [404]	[64] [308] [348]	[55] [308]	[58] [64]	[241]	[256]
Greater severity of sexual abuse	NS						[323]		
Relationship to perpetrator	Risk						[323]		
	NS						[323]		
Healthful Behaviors:									
Greater participation in sports / exercise	Protective	[118] [208] [262] [329]	[262] [329, 330]	[208] [262]	[315] [329]	[143] [329]	[208] [329]	[409] [329]	[329]
	Risk							[329]	
	NS	[208] [262] [382]	[262]	[208] [262]	[315]	[382]	[118] [208] [330]		
Seat belt use	Protective					[143]			
Healthier diet	Protective					[143]			
Well-groomed	NS	[154]							
Good dental hygiene	Protective					[143]			
Greater involvement in other healthy behaviors	Protective	[132] [161]				[131] [87]			
	NS				[290]				
Problem or Risk-taking Behaviors:									
Okay to break the law	Risk	[76]							
Greater impulsivity	Protective	[154]						[201]	
	Risk				[109]				
	NS				[91]				
Greater sensation seeking / reckless behavior / risk-taking	Risk	[82] [201]		[315] [378]	[315]	[12, 87]	[313, 355]	[201] [338]	

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
	NS	[36] [70]		[315] [378]	[224] [315] [341]				
Greater general psychosocial conventionality	Protective	[76] [211]				[87]			
Greater involvement in general unconventional behavior	Risk	[86, 140] [324]	[264]	[264]		[143]			
	NS	[86] [272] [324]						[364]	[66]
Greater perception of parental disapproval of substance use	NS	[86]							
Substance use (combined alcohol, tobacco, marijuana)	Protective						[188]		
	Risk	[50] [188] [333] [324] [352] [367] [343]	[29]	[188] [367]	[367]		[151, 355] [336]	[369]	[264] [367]
	NS	[324]	[29]		[50]				[365]
Tobacco use	Protective						[133, 134]		
	Risk	[161] [210] [219] [309] [277] [307, 318] [317] [395]	[302]	[173] [309] [302] [315] [344] [378]	[119] [302, 315] [404]	[186]	[32] [292] [355]		[220]
	NS	[36] [76] [161] [277] [308] [318]		[309] [308]	[119] [219] [231] [308] [302] [315] [404]	[186] [242] [308]	[308] [323]		
Alcohol use / abuse	Protective						[308]		
	Risk	[16, 161] [41] [86, 281] [198, 201] [210] [219, 264] [309] [277] [307] [314] [350] [395]	[264] [302] [15]	[16, 281] [173] [264] [309] [315] [344] [378] [404] [308] [332] [335] [410]	[19, 166] [290] [15, 315]	[143] [201]	[268] [193] [93] [355]	[201]	[83] [340]

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
	NS	[76] [86] [277] [308]		[122] [308] [404]	[108] [119] [196] [219] [231] [235] [308] [302] [316] [339] [345] [404] [335]	[308]	[32] [268]		[48] [49] [63] [345]
Older age at first tobacco/alcohol/substance use	Protective						[351]		
	NS	[103] [309]		[309] [344]	[344]				
Drinking while driving	Risk						[355]		
Substance use / abuse	Protective				[15] [308]				
	Risk	[65] [281] [201] [210] [219, 226] [264] [309] [314] [308] [343]	[264] [15, 106, 302]	[281] [264] [309] [283, 302] [308] [332] [344, 379] [404] [335]	[15, 19, 166] [196] [197, 222] [290, 302] [315] [344] [231, 404] [335]	[143]	[4, 133] [93] [336] [355] [308]		[48] [49, 164] [89] [194, 222] [25]
	NS	[86]		[122] [332] [335] [404]	[15] [108] [119] [219] [235] [264] [302] [315] [316] [339] [345] [404]	[158] [308]	[308]	[364]	[63] [182] [164] [345]
Problems because of substance use	Risk	[201]							
Sharing needles	NS				[19]				
Greater involvement in delinquent / problem behaviors	Risk	[211] [123] [82] [65, 105, 161, 195, 303, 324] [395]	[106, 363] [264]	[264] [315]	[60, 290]		[190, 292] [93] [336]	[156] [364]	[89]
	NS	[161] [261] [264] [277] [324]			[264]		[195]	[364]	
Prior involvement in problem behaviors	Risk	[61]							
Physical fighting	Risk	[81] [161] [261] [308] [343]		[173] [379] [308]			[93] [355] [308] [313]		

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
	NS	[161] [198] [261] [308]							
Carrying weapons	Risk	[81] [308] [343]		[379] [308]			[292]		
	NS	[308]			[308]	[308]	[308]		
Hostility / aggression	Risk	[85]		[315] [378]			[338]	[267]	[338]
	NS			[378]	[315]		[85] [268]	[364]	
Previous aggression (as a child)	Risk						[268]		
Greater risk of unintentional injury	Risk						[313]		
Multiple admissions to a detention facility	NS				[196]				
Other Behaviors									
Paid work / employed more than 20 hours/week	Risk	[45] [312, 314]	[205] [353]	[205] [353]	[255] [353]		[205]	[205]	
	NS	[357]	[353]	[353]	[353]	[55] [186] [205] [353]	[45] [312] [353]	[409]	[384]
Higher work / occupational aspirations	Protective	[103] [314] [405]						[361]	
	NS	[21] [183]					[299]	[21] [156]	
Volunteer (unpaid work)	Protective	[201]						[201]	
Greater average wage	Risk		[255]	[255]					
Has a driver's license	NS								[90]
TV / video game viewing	NS			[378]					
Viewing TV shows with sexual content (depicting behaviors, discussion about sex or risks)	Risk	[59] [82]							
	NS	[82]							
Viewing x-rated movies	Risk		[398]	[398]		[398]			[398]
General Skills and Personality Traits:									
Higher level of cognitive development	Protective	[132] [324]				[62] [240] [170] [239]	[62]	[342]	
	NS	[324]			[290] [341]	[240]		[342]	
Makes responsible choices	NS	[382]				[382]			
Greater problem-solving skills	Protective	[154]				[131]			
More sociable / outgoing / social ease	Risk	[61]							
More future orientation	Protective	[382]							
	NS	[123] [277]				[382]			
Greater egocentrism	Protective					[170]			
Opinions more influenced by others	NS	[36]							

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD	
Emotional Well-Being and Distress										
Higher self-esteem, self-image, self-concept	Protective	[103] [333] [354] [385]				[264]	[131] [170] [353]	[32] [299]	[201]	
	Risk	[354]		[255] [353]						
	NS	[24] [30] [103] [183] [145] [230] [264] [350]	[223] [264] [353] [363]	[264]	[290] [294] [345]	[62] [186] [353]	[23] [32] [62] [353]	[299] [369] [361]	[164] [345] [396]	
Greater general emotional well-being	NS	[82] [210] [260] [277]			[290]					
Greater life satisfaction	NS	[161]								
Greater dissatisfaction with body image	Risk				[399]					
	NS	[399]			[399]					
Bulimic	Risk			[282]						
Greater feeling of failure	Risk					[201]		[201]		
Greater internal locus of control	Protective		[255] [353]		[255] [353] [356]		[298] [405]	[156] [201]		
	Risk	[103]								
	NS	[103]	[353]	[353]	[294]	[353]	[353]	[299] [361]		
Greater impulse control and self-control	Protective				[109] [356]					
	NS				[196]					
Higher decision-making autonomy	Risk	[154]								
Hyperactivity / ADHD	NS							[364]		
Greater perceived risk of untimely death	Risk	[45] [154] [312]								
	NS	[154]					[45] [312]			
Greater level of stress or anxiety	Protective	[65] [85]								
	Risk	[161]								
	NS	[154]					[85]		[164]	
Concern about job prospects	Risk	[350]								
Greater feelings of sadness / hopelessness	Risk								[320]	
	NS			[173] [320]	[320]		[320]		[320]	
Depression	Protective	[201]					[283]			
	Risk	[85] [230] [201] [352]		[232]	[320, 345]	[201] [232]		[201] [267]	[320, 345]	
	NS	[161] [254] [352]		[320]	[345]	[55]	[85] [320] [351]	[364] [369]	[164] [345]	
Suicide thoughts	Protective			[320]		[308]				

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
	Risk	[30] [210] [308]							
	NS	[308]		[308] [320]	[308] [320]		[308] [320]		[320]
Suicide attempts	Risk						[292]		
Receipt of help for emotional problems	Risk	[201]						[201]	
More social support	Protective								
	NS	[50]			[50]				[164]
Conduct disorder	Risk			[46]					
	NS							[364]	
Personality disorder	Risk			[215]					
Beliefs and Attitudes about Gender Roles:									
More stereotypical gender roles	Protective	[188]	[255]	[255]	[255]		[298]		
	Risk	[145] [140]		[295]	[245] [295]	[201] [245]		[361]	
	NS			[188]	[294]		[188]	[299]	
Greater perceived male responsibility for pregnancy prevention	Protective				[224] [278] [294, 295, 296]	[255] [353]			
	NS		[353]	[353]	[293]	[353]	[353]		
Knowledge, Beliefs, Attitudes and Skills Regarding Sex									
Greater sexual knowledge	Protective								
	NS	[30]	[180]	[180]				[180]	
Greater knowledge about fertility cycle	Protective					[311]			
Older ideal age to initiate intercourse	Protective	[228] [368]	[228]						
	NS					[228]			
Believe is mature enough for sexual relationship	Risk	[116]	[116]						
	NS					[116]			
Believe ought to be in love to have sex	Protective	[116]	[116]						
	NS					[116]			
More permissive attitudes toward premarital sex	Risk	[140] [41] [228, 258] [368] [67, 227, 393] [209]	[29] [180] [203] [228]	[180] [255]	[255]		[4]		
	NS	[183]				[228]		[180]	
Believe premarital sex is okay if plan to marry	Protective		[203]						
Teen sex / premarital sex is against personal	Protective	[41] [183]							

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
Beliefs and Attitudes about Condoms and Contraception									
Stronger belief that condoms are effective in reducing STD/HIV/pregnancy	Protective				[108] [166]				[63]
	NS				[127] [235] [278] [294] [358]				
Stronger belief that condoms do not reduce pleasure	Protective		[92]		[166] [278] [293] [294, 295] [325] [356]				
	NS				[358]				
Greater value of partner appreciation of condom use	Protective				[278] [293] [294, 295]				
	NS				[294]				
Greater perceived hassle of condom use	Risk				[291]				
More positive attitudes toward condoms and other forms of contraception	Protective				[20, 197] [196] [235, 245] [310] [166]	[62] [170] [245] [407] [388]	[407]		
	NS		[180]	[180]	[127] [212] [290]			[180] [407]	[49] [89]
Greater embarrassment to use condom	Risk				[166] [278] [294]				
	NS	[41]			[293] [294] [295]				
Greater embarrassment to buy birth control	Protective	[228]	[228]						
	NS	[41]				[228]			
Lower perceived barriers or costs of using condoms	Protective	[333]			[96] [108] [115]	[228]			
	NS								[114] [396]
Greater perceived accessibility of condoms	Protective	[333]			[235]				
	NS				[325]				

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
Pregnancy, Abortion and Childbearing :									
Older ideal age for marriage	Protective								
	Risk	[36]							
	NS	[123]							
Greater desire for marriage	NS		[213]						
Belief that marriage is not an easy solution to pregnancy	Protective					[255] [353]			
	Risk		[255] [353]				[353]		
	NS		[353]	[353]	[353]	[353]	[353]		
Belief that causing a pregnancy was a sign of manhood	Protective				[245] [278]				
	Risk						[313]		
	NS				[245] [293] [295]				
Greater embarrassment if pregnant	Protective	[154]							
Greater knowledge about pregnancy avoidance	NS					[62]	[62]		
Greater perceived negative consequences of pregnancy	Protective	[44] [118]	[116] [255]	[255]	[255] [294] [341]	[116] [255]	[45, 179] [312]		
	NS	[45] [116] [312] [317] [358]	[116]		[212] [358]	[62] [116]	[62]		
Greater ambivalence about pregnancy	Risk					[62]	[62]		
Greater perceived pregnancy risk if does not contracept	NS				[341]				
Greater desire to get pregnant	Risk					[101] [407]		[407]	
	NS		[92]		[101]	[101]	[93] [407]		
Greater importance of avoiding pregnancy	Protective				[212] [290]	[388, 407]			
	NS	[183]			[293] [397]	[186]			
Greater worry about pregnancy	NS	[41]							
Older ideal age for first birth	Protective	[36] [228] [368]				[228]			
	Risk	[36]							
	NS	[123]	[228]			[228] [311]			
Greater desire to have a child or ambivalent about having one	Risk	[228]	[228]					[406, 407]	
	NS		[213]			[228]	[406]		
Support premarital childbearing (for self)	NS	[21] [123]	[21]	[21]					
Belief that adolescents are not good parents	NS	[228]	[228]			[228]			
	Protective					[245]			
Expect to have at least one child	NS					[245]			
	Risk	[373]				[373]	[168]		
Greater perceived ease of childbearing and parenting	Risk	[373]							
More positive attitudes towards (teen)	Risk	[317]							

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
childbearing	NS	[317] [358]			[358]	[62]	[62]		
More responsible paternity attitudes	NS				[245]	[245]			
Intention to have and support baby if became pregnant	Protective			[255]	[255]	[255]			
	Risk		[203]						
Intention to keep baby if became pregnant	Protective	[228]	[228]			[311]			
	NS					[228]			
Would consider adoption as a resolution for unplanned pregnancy	NS		[203]						
More positive attitudes towards abortion	Protective							[407]	
More permissive attitudes about abortion	Risk		[203]						
	NS					[407]	[407]		
Beliefs and Attitudes about STD and HIV/AIDS:									
Greater knowledge about HIV/AIDS/STDs	Protective			[11, 171]	[11, 207] [339]				[114]
	Risk				[197] [196] [275]				
	NS	[50] [264] [321]	[207] [264]	[122] [207] [264]	[108] [264] [290] [321]				[49] [164]
Knowing someone with HIV/AIDS	Protective				[316] [166]				
	Risk				[9]				
	NS				[9]				
Greater perceived risk or concern about STDs/HIV	Protective	[358]	[264]	[264]	[127] [166] [152] [278] [310]	[12]			
	Risk	[50] [333]		[207]	[9]				[164] [326] [384]
	NS	[41] [116] [183] [264] [358]	[116] [207]	[130]	[9] [10] [19] [50] [130] [127] [207] [264] [278] [293] [294] [310] [339] [341] [358]	[116]			[49] [192] [396]
Greater denial about/discounting risk of HIV/AIDS	Risk				[293] [294]				
	NS				[294]				

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
Greater perception that mother would be upset if respondent contracted an STD	Protective	[358]							
	NS				[358]				
Greater general worry about AIDS	Protective				[207] [278] [294]		[283]		
	Risk	[161]	[207]	[207]					
	NS	[50] [161]			[19] [50] [224] [293] [339] [341]				[396]
Greater worry about friends contracting STD/AIDS	Protective				[19]				
	NS								
Greater motivation to avoid STDs/AIDS	Protective				[207] [275] [290] [358]				[326]
	NS		[207]	[207]	[212] [290]				
Greater self-efficacy for STD/AIDS prevention	Protective				[50] [235]				
	NS	[50]		[122]	[108] [339]				[49]
Discussed AIDS with their physician	Protective				[166]				
Discussed AIDS with others	Protective				[166]				
More negative attitudes toward people with AIDS	Risk				[50]				
	NS	[50]							
Belief that contracting HIV is one's own fault	NS				[19]				
Greater perception that peers do not support STD/AIDS prevention	NS								[49]
Sex-Related Behaviors:									
Identifies as homosexual or bi-sexual (vs. hetero)	NS				[10]				
Same-sex attraction or behavior (GLB)	Protective	[312]			[235]				
	Risk	[40, 45, 269] [312]	[269]	[40, 79, 102] [149] [308]	[149]		[40] [308]		[149] [25]
	NS	[308]		[102]	[308]	[308]	[45] [312]		[365] [384]
Ever kissed or necked	Risk	[140] [44, 252]							
Sexually active (currently or ever)	Risk		[288]		[229]			[305]	
	NS					[229]			

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
Older age at first sex	Protective			[122] [283] [332, 344, 386, 404]	[152] [246] [278] [293] [294] [206, 344, 404]	[131] [242] [246] [272] [303]	[193] [283] [355] [23, 408] [323] [351]	[185] [241] [352, 369] [361]	[174] [202] [384] [375] [377]
	Risk				[316]	[240]			
	NS		[92]	[344]	[108] [206] [345] [341] [404]	[239]	[93] [406]	[406]	[63] [89] [182] [345] [384] [377]
Greater number of years being sexually active	Protective						[163]		
	Risk			[344]	[15] [344]	[311]	[45] [312]		[365]
	NS	[312]			[341]	[62] [311] [372]	[62] [163]		
Greater frequency of sex	Protective					[186]			
	Risk				[141] [109] [206, 389]		[147] [330] [406]	[406]	[202]
	NS				[206] [328]	[186] [311] [388]			[48]
Greater wantedness of first sex	Protective				[1]				
Unprotected intercourse	Risk								[114] [396]
	NS								[114]
Unprotected intercourse with multiple partners	Risk							[114]	
Greater sexual risk-taking in general	NS				[224]		[323]		
Greater acceptance of own sexual behavior	Protective								
	NS					[372]			
Intention to avoid sex with strangers	Protective								
Use of alcohol or drugs before sex	Risk			[302] [335]	[172, 302] [341]				[114]
	NS			[404]	[335] [404]	[55]			[63] [192] [339] [375]
Greater number of visits to a family planning clinic	Protective					[56]			
Previous use of condoms	Protective				[141] [127] [206] [325, 356]		[151, 163]		[174] [276] [287] [340] [384]

Risk and Protective Factors	Protective Factor, Risk Factor or Not Significant	Initiation of sex	Frequency of sex/ Sex during specified time	# of Partners	Use of condoms	Use of contraception	Pregnancy / Impregnation	Child-bearing	STD
	NS				[365]				[49]
Pregnancy and STD Status:									
Previous pregnancy scare	Protective					[289]			
Previous pregnancy / impregnation	Protective					[148] [289]			
	Risk		[92]	[151]	[10] [151] [91] [245] [397]	[87] [131] [245] [55]	[62] [306]		[49] [151] [276]
	NS				[328]	[62] [87] [158] [311] [372]			[63] [164] [89]
Prior miscarriage	Risk								
Previous abortion	Protective					[388]			
	NS					[311]			[164]
Greater number of children	Risk								[384]
Older age at birth of first child (for respondent who already has a child)	Protective						[147]		
Been tested for HIV	Protective				[10]				
	NS				[10]	[55]			
Any STD history	Protective				[328]				
	Risk								[114] [33]
	NS				[91] [341] [397]	[158]	[306]		[63] [114] [89] [366]
History of recent STD	Protective								
	Risk						[151]		[90] [142] [287] [384] [396]
	NS				[141]	[55]			[63] [144]
HIV positive	Protective				[28]				
	NS				[10]				

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