Older, but Not Wiser: How Men Get Information About AIDS and Sexually Transmitted Diseases After High School

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Context: *As they reach adulthood, young men are less likely to use condoms and are at increased risk for exposure to AIDS and other sexually transmitted diseases (STDs). Little is known about which prevention efforts reach men in their 20s.*

Methods: *Longitudinal data from the 1988, 1990–1991 and 1995 waves of the National Survey of Adolescent Males are used to identify sources of information about AIDS and STDs among 1,290 young men aged 22–26. Information receipt from four main sources, the topics covered by each source and the personal characteristics associated with getting more information are all explored.*

Results: *Twenty-two percent of men surveyed discussed disease prevention topics with a health provider in the last year, 48% attended a lecture or read a brochure, 51% spoke to a partner, friend or family member, and 96% heard about AIDS or STDs from the media (e.g., television advertisements, radio or magazine). Excluding media sources, 30% of young men reported getting no STD or AIDS prevention messages in the last year. Being black or Hispanic, having had a physical exam or an AIDS test in the last year, and having had discussions about AIDS or STDs with parents or a health care provider in the past were associated with receiving more information.*

Conclusions: *Although young men who are at higher risk for STD or HIV infection are more likely than other young men to get information about disease prevention, young adult men are much less likely than adolescents to receive AIDS or STD prevention education. More prevention efforts need to be aimed at young adults.*

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Throughout the last decade, widespread concern about high rates of childbearing and sexually transmitted disease (STD) transmission among adolescents led to changes in sex education programs and, subsequently, adolescents' risk behaviors. As of 1996, almost all secondary schools reported offering AIDS education as part of a required health education class.[1] Research suggests that AIDS and sex education programs for adolescents may delay first intercourse, moderately reduce sexual activity and increase contraceptive use.[2] Recent studies show modest declines in sexual activity, pregnancy and childbearing among teenagers, as well as a rise in condom use, suggesting that prevention efforts among adolescents might work.[3] It remains to be seen whether such changes are maintained in adulthood.

After they leave school, young people are less connected to institutional structures that facilitate education about AIDS and STDs and organized prevention efforts drop off, despite increased levels of sexual risk-taking behaviors. The increasing delay before marriage results in a longer period for sexual partnering among young people, potentially increasing their exposure to HIV infection and other STDs. Men in their 20s are more likely to be sexually active and are less likely to use condoms than teenagers.[4] Their high-risk sexual behavior also leads to increased risk for disease: Half of all new HIV infections in the United States are among people younger than 25,[5] and young men aged 20–24 have the highest rate of gonorrhea infection among all male age-groups.[6] In contrast to adolescents, among whom rates of intercourse are declining, men in their 20s are at greater risk for HIV and other STDs than in the past: Recent reports show that HIV prevalence among young heterosexual men doubled between 1988 and 1993.[7]

Men in their 20s have relatively high rates of STD and HIV infection compared with younger men, and they are more likely to engage in risky sexual behaviors. These young men are often the hardest to reach for prevention, however, because they are no longer associated with institutions that traditionally provide prevention education.

Little is known about whether young men carry the prevention messages that they received as adolescents with them as they age or where they obtain new information about the prevention of STDs or AIDS. The available data on where young adults receive disease prevention information are very limited.

This article documents the sources of STD and AIDS prevention messages for men in their 20s. We identify the most common sources of information about AIDS and STDs for young men aged 22–26, the topics most frequently covered and the characteristics of men who receive information. We focus on the receipt of information on AIDS and other STDs, but these topics can be considered markers for receipt of information in other areas, such as pregnancy prevention. We are interested in determining whether the young men most in need of prevention information (those with a history of risky sexual behavior or STD testing) receive it. By using three waves of longitudinal data, we can link current receipt of information for disease prevention to prior health education efforts and sexuality communication.

Data and Methods

Sources of Data

Data are from the first three waves of the National Survey of Adolescent Males (NSAM), administered in 1988, 1990–1991 and 1995.[8] The 1988 NSAM was a nationally representative household sample of 1,880 never-married men aged 15–19 that oversampled black and Hispanic youth. The overall response rate for the first wave was 74%. The original cohort was surveyed again in 1990–1991, at ages 17–22, with an 89% follow-up rate. In 1995, the 1988 cohort was surveyed at ages 22–26 with a 75% follow-up response rate (from 1988). The analyses in this article are limited to the 1,290 young men who responded to all three waves; they represented 70% of the

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original sample (excluding those who died between waves).

For the original sample, weights were constructed to adjust for probability of selection, nonresponse and poststratification adjustments to census targets. For the 1995 wave, we constructed longitudinal weights that also adjust for attrition across the waves, so that the combined three-wave sample has a distribution of characteristics similar to the original 1988 sample.[9] All NSAM waves were conducted with a face-to-face interview and a self-administered paper-and-pencil questionnaire (which was used to collect more sensitive information).

Variables

The main outcome measures in this analysis are respondents' self-reported receipt of information about AIDS and STDs in the year prior to the 1995 interview from four types of sources: medical, instructional, social and media.

The 1995 NSAM had 20 health information items that covered these four source types. Information receipt from a medical source was captured by the question, "In the last 12 months has any doctor or nurse discussed any of these topics with you?" The four topics were: pregnancy prevention; AIDS; other STDs; and condoms. Data on instructional, social and media sources came from two questions, each with seven items. The first asked, "In the past 12 months did you get any information about X from any of these sources?" where "X" refers to either AIDS or other STDs (such as herpes, syphilis or chlamydia). The seven choices for information sources included brochures received at work or school; a lecture or workshop; a wife or girlfriend; other friends or family members; television; radio; and magazines or newspapers. Additional data on information receipt from the media was collected from a question that asked, "In the last 12 months have you seen any TV programs or TV ads about these topics?" where the two topic choices were preventing pregnancy and condoms.

Conversations with medical professionals about pregnancy might have been either about prevention or about a current pregnancy; thus, we excluded the pregnancy topic, since our analyses focus on prevention messages. For consistency, we eliminated this topic from the media grouping as well, leaving us with 18 items for the analysis. We grouped the 18 items into four binary variables based on loadings from factor analyses (varimax rotation) that indicate which items are intercorrelated. Respondents were coded as having received AIDS or STD information from a medical source if they talked to a doctor or nurse about AIDS, STDs or condoms. Respondents were coded as having received information from an instructional or social source if they reported receiving information on either AIDS or STDs from a lecture (instructional), or a partner, friend or relative (social). Respondents who reported receiving information on AIDS or STDs from television, radio, magazines or newspapers or receiving information on condoms from television were coded as having received information from a media source.

For the portion of the analysis that describes the characteristics of those who receive information, we hypothesized that health information receipt, like receipt of health care services, is a function of both the demand for and the supply of information.[10] We selected variables related to characteristics that might affect information-seeking by young men, as well as their ability to reach an information supplier. With longitudinal data, we can look at both current and earlier respondent characteristics.

We show health information receipt by race, age, marital status, level of education and employment status. We then explore information receipt by various health care characteristics, such as whether a respondent had a physical exam or an STD test in the last 12 months. The expectation is that people who regularly seek medical care are more likely to seek out information on reproductive health topics. Other health care characteristics that we examined include type of provider and insurance status. Having a regular source of care and medical insurance are expected to be linked with increased access to information.

We then consider the relationship between prior receipt of health information, as measured in previous waves. These measures include having received formal, primarily school-based, sex education by age 17; ever having talked to a parent about reproductive health topics (1988 wave); and having spoken to a doctor or nurse in the last 12 months (1990–1991 wave). Respondents with a history of sex education or sexuality communication are expected to be more likely to seek out information when they are older.

In the multivariate analysis, we add an additional group of correlates related to STD risk. These include having had three or more partners in the last year, having become sexually active before age 15 and knowing someone with AIDS. Ideally, respondents who have engaged in high-risk sexual activity or who ever knew someone with AIDS would be more likely to receive relevant information.

Data Analysis

All analyses presented here are weighted, using the longitudinal weights. SUDAAN was used to test for significance in bivariate tabulations, and in logistic regression models to adjust for the complex sample design.[11] The logistic regression analyses estimate three sets of models predicting receipt of reproductive health information from a medical, instructional or social source. Since 92 respondents did not answer the self-administered questionnaire (the section with questions on physical exams and AIDS and STD testing), we include a dummy variable for these respondents in case they differ from the remaining respondents.*

Results

Topic and Source of Information

Almost all respondents (96%) recall having heard prevention messages concerning AIDS or STDs through the media in the last year (Table 1). Only 22% of the young men talked to a doctor or nurse about AIDS, STDs or condoms in the last year.

Table 1. Percentage of U.S. males aged 22–26 who received information on AIDS and STDs in the last year, by topic, according to source, 1995 National Survey of Adolescent Males (N=1,290)

Source	Any topic	AIDS	STDs	Condoms
Total	**98.2**	**95.3**	**71.8**	**80.3**
Media	**96.2**	**91.7**	**58.7**	**78.3**
TV program/advertisement	94.0	87.0	44.1	78.3
Magazine	75.8	74.6	46.4	na
Radio	59.6	57.8	23.9	na
Medical				
Talked to a doctor/nurse about topic	22.3	18.4	17.9	16.4
Instructional	**47.8**	**45.1**	**34.0**	**na**
Attended a lecture on topic	20.8	17.9	15.3	na
Read a brochure on topic	43.3	40.2	30.1	na
Social	**50.8**	**46.9**	**31.6**	**na**
Talked to other friends/family about topic	40.0	37.1	25.1	na
Talked to girlfriend/wife about topic	33.2	29.8	19.6	na

Notes: Percentages are weighted. na=not applicable.

*The 92 missing cases in the self-administered questionnaire portion are because some respondents either erroneously skipped a section of this questionnaire or did not answer it at all. The models were run with and without the respondents missing self-administered questionnaire data, and the substantive results did not change.

Approximately half of the respondents report having received prevention information from a brochure or lecture (48%) and having talked to a partner, family member or friend about health information (51%). AIDS is consistently the topic most often reported, regardless of source.

Among the media sources, television is the most commonly reported source for information (94%). Respondents are twice as likely to report having read a brochure about various topics (43%) than to have attended a lecture (21%). Young men are more likely to report having talked about AIDS or STDs with a family member or friend than with a wife or girlfriend (40% vs. 33%).

We did not collect data on the content received from any of the sources. Media information could have been presented as part of a fictional story line, as a news story or in a prevention context. Furthermore, it is difficult to consider correlates of receipt, since virtually the entire sample reported having received information from the media about AIDS or STDs. These two problems led us to drop media from the remainder of our analyses.

Clinicians and television were the only sources that included information about condoms. If the condom measure is excluded from the analysis, the values for information receipt from a media and medical source change to 92% and 21%, respectively. There is a larger difference for the media than for the medical source, but since we exclude media from the rest of our analyses, our primary concern is the medical measure. Since the difference is about one percentage point, we do not believe that including the condom measure in the rest of the analyses substantively affects our results.

When the media category is excluded from the analysis, 30% of respondents report that they received no information about AIDS or STDs in the last year from the three remaining sources. Among those who report having received no information in the last year, 94% had received information from the media (results not shown). Approximately one-third of respondents received health information from one source and 27% got information from two sources. Only 12% of respondents got information from all three sources.

Correlates of Information Receipt

For each source of information on disease prevention, non-Hispanic black men and Hispanic men are more likely than white men to report having received prevention messages (Table 2). Older respondents are less likely to have received information from a medical source than respondents younger than 26. Single respondents and those with more education are more likely to receive information from an instructional source than are other young men. However, the most-educated men are less likely than other respondents to report receiving information from a social source. Respondents currently attending school are more likely to report information receipt from an instructional source than are respondents who are not in school, regardless of their employment status.

Whether a respondent has a regular source of health care is not related to his receipt of health information in the last year (Table 2). Information receipt also does not differ by insurance status, except that Medicaid recipients are more likely to report having received information from an instructional source (67%) than did men covered by other types of health insurance. Having a physical exam or having been tested for AIDS or an STD in the past year are positively associated with receipt of health information from all types of sources.

Having received formal sex education before age 17 is not significantly associated with having received disease prevention information later in life (Table 2). For the three sources of health information examined, more parental communication (i.e., discussion of more topics) at a young age is associated with a higher incidence

Table 2. Health information receipt in the last year among U.S males aged 22–26, by characteristics, according to source of information, National Surveys of Adolescent Males

Characteristic	% dist.	Source		
		Medical	Instructional	Social
DEMOGRAPHIC CHARACTERISTICS				
Race				
Black non-Hispanic	14.5	42.2**	66.5**	69.8**
Hispanic	9.3	35.6	57.7	66.8
White non-Hispanic/other	76.2	16.9	43.1	45.2
Age				
≤23	43.9	22.8*	52.1	51.8
24–25	43.8	24.8	46.2	51.2
26	12.4	11.7	38.5	45.5
Marital status				
Married	25.7	18.5	35.0**	47.0
Cohabitating	13.8	23.9	45.1	50.0
Single	60.6	23.6	53.9	52.5
Highest level of education				
<high school	7.6	13.6	30.1*	38.5*
High school graduate	69.3	23.3	48.2	54.0
College graduate	16.7	24.7	50.1	51.8
Graduate school	6.3	16.7	58.6	25.8
Employment/educational status†				
Employed, not in school	66.2	22.4	41.4**	49.9
Employed, in school	18.6	23.1	60.7	57.4
Not employed, in school	7.0	12.5	78.5	33.9
Not employed, not in school	8.2	28.7	44.8	58.0
HEALTH CARE CHARACTERISTICS				
Has regular doctor/health care provider				
Yes	82.2	23.7	49.4	50.8
No	17.8	15.5	39.6	49.7
Insurance status				
Medicaid	5.7	23.3	66.7*	53.6
Other insurance	70.1	21.6	48.7	50.0
Uninsured	24.1	24.2	40.5	52.2
Had physical exam in last 12 months‡				
Yes	56.1	31.0**	57.2**	56.9**
No	43.9	11.6	34.9	40.6
Had AIDS/STD test in last 12 months‡				
Yes	30.6	40.8**	59.9**	61.2**
No	69.4	14.3	41.9	44.7
PRIOR RECEIPT OF SEX EDUCATION				
Sex education by age 17				
No	10.3	20.7	52.7	49.5
1–4 topics	56.2	22.4	45.6	51.3
All five topics§	33.5	22.8	50.1	50.2
Talked to parents about sexuality topics (Wave 1 only)				
No	21.3	17.8*	42.1	46.7
1–5 topics	64.2	21.1	48.0	49.6
All six topics††	14.5	34.7	55.6	62.0
Discussed reproductive health with doctor at last visit (in 1990–1991)				
Yes	15.2	36.1**	50.6	65.2**
No	84.8	19.9	47.4	48.2

*p≤.05. **p≤.01. †"In school" refers to respondents who are currently enrolled in school either full-time or part-time. Of those who are in school, 0.2% are in high school, 72.1% are in college, 21.4% are in graduate school, 5.6% in vocational/trade school and 0.8% are in a GED program. ‡There are 92 missing cases for these variables, due to nonresponse on the self-administered questionnaire portion of the survey and to erroneous skipping. §Sex education topics include STDs, AIDS, safe sex, birth control methods and where to obtain birth control. ††Parental communication topics include talking with parents about the menstrual cycle, about how pregnancy occurs, about STDs, about contraceptive methods, about AIDS and about what to do if pregnancy occurs. *Note:* Significant difference refers to chi-square test of each characteristic and source.

of health information receipt, although the difference is statistically significant only for medical sources of information. Finally, when we examine prior discussion of AIDS or STD information with a physician (as reported in the 1990–1991 wave), we find that respondents who reported having discussed reproductive topics with a physician at their last visit prior to 1990–1991 are more likely to have received health information at a later age from both medical and social sources.

Multivariate Analyses

The first logistic regression shown in Table 3, which predicts receipt of information on AIDS, STDs or condoms from a medical source, indicates that non-Hispanic black men and Hispanic men are more likely to report having received information from a medical professional than are white men.* Health insurance status, provider type and prior sex education are not significantly related to having talked with a doctor or nurse in the 12 months prior to the survey. Respondents who had had a physical exam or an STD test in the previous 12 months are more likely to have talked with a doctor or nurse during the same time period. Respondents who reported having spoken with a parent about all six sexuality topics in 1988 or who reported having talked to a doctor in Wave 2 are much more likely to report having talked to a doctor or nurse in the 1995 wave. Finally, respondents who became sexually active before age 15 are less likely to have talked to a physician or nurse about reproductive health topics.

In the regression results predicting the likelihood of having attended a lecture or received a brochure about AIDS or STDs, being non-Hispanic black or Hispanic is positively associated with having received AIDS or STD information in the last 12 months. Being in school, regardless of employment, is highly correlated with having received a brochure or having attended a lecture on AIDS or STDs. College graduates are also more likely to report information receipt than are those with only a high school diploma. Respondents who received a physical exam in the last 12 months are more likely than others to report having attended a lecture or received a brochure.

Finally, the regression predicting discussion about AIDS or STDs with a partner, friend or family member in the last 12 months produces results similar to the others. Black and Hispanic men are more likely than white men to report having talked with someone about AIDS or STDs. Respondents who reported having lived with their parents in the last 12 months are more likely to have received information from a social source than other respondents. Respondents with less than a high school education are less likely to report having talked to someone about AIDS or STDs than those with a high school degree.

Respondents who had a physical in the last year are more likely than other young men to have received information from a social source. Respondents who in Wave 2 reported having spoken with their physician are more likely than others to report having received information from a social source in 1995.

Table 3. Odds ratios from logistic regression models predicting source of AIDS and STD information receipt in the last year among U.S. males aged 22–26, by source

Characteristic	Medical	Instructional	Social
Demographic characteristics			
Race			
Black non-Hispanic	3.34**	3.05**	2.17**
Hispanic	3.02**	2.53**	2.43**
White non-Hispanic/other (ref)	1.00	1.00	1.00
Age	0.93	0.94	1.02
Marital status			
Married	0.90	0.70	1.02
Cohabiting	0.87	0.74	0.91
Single (ref)	1.00	1.00	1.00
Lived with parent(s) in the last 12 months	1.18	1.44	1.56*
Employment/educational status			
Employed, in school	0.98	1.98*	1.41
Not employed, in school	0.40	4.90**	0.53
Not employed, not in school	0.89	0.77	1.07
Employed, not in school (ref)	1.00	1.00	1.00
Highest level of education			
<high school	0.64	0.65	0.58*
High school graduate/some college (ref)	1.00	1.00	1.00
College graduate or more	1.54	1.80**	0.87
Health care characteristics			
Insurance status			
Medicaid	0.93	2.79	1.03
No insurance	1.09	0.75	0.93
Other insurance (ref)	1.00	1.00	1.00
Has regular health care provider	0.81	0.80	1.33
Had physical exam in last 12 months	2.44**	2.47**	1.70**
Had AIDS/STD test in last 12 months	2.91**	1.46	1.40
Did not answer self-administered questionnaire†	2.35	2.87**	2.35*
Prior health education receipt			
Sex education by age 17	0.76	0.55	0.93
Talked to parents about reproductive health (Wave 1 only)			
No parental communication (ref)	1.00	1.00	1.00
1–5 topics	1.14	1.15	1.13
All six topics	2.36*	1.44	1.65
Reported talking to a doctor (Wave 2)	2.34**	1.08	1.94*
STD risk			
Had >3 partners in last year	1.55	1.39	1.28
Had sex before age 15	0.49**	0.71	1.12
Know someone with AIDS	1.48	1.15	1.49
–2 log likelihood	*240.00*	*257.79*	*164.05*
Degrees of freedom	*24*	*24*	*24*
N	*1,236*	*1,234*	*1,234*

*p≤.05, **p≤.01. †The models were also run without this variable and there was no change in the odds ratio for variables derived from the self-administered questionnaire.

Discussion

This article documents how men in their early 20s, who are generally employed and not in college, get prevention information about AIDS and STDs. Almost all of these young adults are exposed to media messages about such topics, but about two-thirds are informed by more direct sources, such as from family, friends or medical professionals, or through lectures or brochures. The examination of those who received direct information revealed certain demographic traits that are useful in identifying who is less likely to get AIDS or STD messages. White non-Hispanic males reported getting prevention messages less frequently than black or Hispanic men. Those without a high school degree were less likely to have more direct discussions or formal instruction about these topics.

After controlling for a host of social, demographic and other traits, we find that black or Latino men are much more likely to get information about reproductive

*The racial difference exists even in cases where STDs have been diagnosed. Among the small percentage who were told that they had an STD, black men were three times more likely to have discussed STDs with a medical professional than were white males. Most discussions occurred outside the context of a diagnosed STD.

health, suggesting that minority youth have been targeted for prevention efforts. This is important, given the large body of research indicating that nonwhite males are at increased risk for AIDS and STD infection. Young black men are also more likely to be sexually active and to have more partners than are young white men.[12] STD infection rates are also higher among ethnic minorities. In 1997, the chlamydia rate for Hispanics was almost three times that of whites, and the rate for blacks was 10 times that of whites. For gonorrhea, the contrast was even greater: The 1997 gonorrhea rate for black males aged 20–24 was 40 times that of whites.[13] Although HIV infection rates are declining for all men, they are falling at a slower rate for black men. By 1993, black males aged 18–22 had a higher HIV prevalence than white males.[14]

While it is gratifying that black and Hispanic males are receiving prevention messages, it is of concern that white males with similar sexual histories and socioeconomic status are substantially less likely to receive this information. The difference is particularly apparent with respect to discussing HIV or STDs with a doctor or nurse: Forty-two percent of black males got medical advice, compared with 17% of white males. We worry that medical professionals may have implicitly labeled minority males as being at risk of HIV or STDs, but not white males, regardless of their actual sexual experience.

The fact that about one-third of young adult men received no information about AIDS or STDs from any source other than the media stands in distinct contrast to the nearly universal coverage of HIV and sex education for high school students. As noted earlier, young adult men have even higher rates of sexual risk behaviors than teenagers and, from a public health perspective, might therefore be considered to have greater needs for prevention efforts. Nearly all men in their 20s are sexually experienced (94% of this sample), 88% were sexually active in the last year and 17% reported three or more partners in the last year, suggesting that prevention efforts need to be stronger among this group.

This analysis has some limitations. While we know if a respondent received information from a certain source, the content or context of the information exchange is unknown. For example, we do not know who initiated a conversation about AIDS or STDs. Further, all data are self-reported, and we cannot be certain that the histories have been recalled or reported accurately. However, self-reported data may still be reasonably valid: One recent study found that young people could accurately recall preventive health discussions.[15]

Our results show that the media, particularly television, are by far the most common source of health information for young men. The 1992 wave of the National Health Interview Survey found that the media were the most common source of information among 18–29-year-olds, followed by brochures.[16] Media can reach nearly everyone in this age-group, but the media send mixed messages. Studies have explored the relationship between media and sexuality, finding that while television and magazines frequently feature programming about sexual issues, very few focus on sexual health.[17] Mass media are a good way to increase awareness about reproductive health issues, but they should not substitute for interpersonal communication, which is generally thought to be more effective in motivating behavior change.[18]

Perhaps our most important finding is that there was a relationship between early communication about AIDS and STDs and the receipt of prevention messages years later, when the men were young adults. Those who had substantial discussion with their parents about reproductive health as of 1988 or who spoke with a doctor in 1991 were more likely to talk to a health professional about reproductive health issues in 1995. Similarly, those who reported talking to doctor in 1991 were more likely to have discussed these topics with their family or friends in 1995.

One interpretation of this finding is that discussions with influential people, such as physicians, family or friends, can have lasting effects and may continue to prompt self-interest or concern years later. Early discussions may set a pattern of communication that carries on later in life. Interestingly, we did not find these continuing effects for formal sex education or AIDS education. An alternative explanation may be that some youth have innate characteristics that lead them to be more communicative (or more worried) through different phases of their lives. In either case, there is at least one important policy lesson: We ought to reinforce continuing discussion of these topics by health professionals and by family and friends, and we should identify better mechanisms for communicating with those who are not having such discussions with influential sources.

The potential long-term benefits of discussion with influential sources supplement the well-documented short-term benefits. Prior studies have shown that discussing these issues with parents or physicians can promote changes in condom use and in sexual behavior.[19] However, a recent survey reports a gap between parental views on discussing sexual health and their children's desire for information. Adolescents do not believe that their parents talk to them early enough about sexual issues, even though parents say that talking to children about sex is important.[20]

Similarly, there are barriers in the extent to which medical professionals talk to their male patients about reproductive health, despite research showing that reproductive health counseling can affect sexual behavior.[21] However, a recent study found that only one-fifth of an adult sample reported talking to a physician about AIDS.[22] Other data have demonstrated that primary care physicians were much less likely to assess sexual risk behaviors among adults than other risk behaviors, such as smoking and alcohol use.[23] But even if clinicians were more proactive in discussions with their male patients, the fact that young men are much less likely to have a regular source of health care and to visit a doctor than women in their 20s means that the doctor's office cannot serve as a universal source of information and must be supplemented by other sources.[24]

Another potential source of health information for young men is college and graduate school, but reproductive health education in higher education is not nearly as universal as it is during high school. The 1995 National College Health Risk Behavior Survey results showed that less than half of college students reported receiving information on sexual risk prevention, regardless of the topic. Among the various topics, AIDS is most commonly covered, and information receipt declines as age increases.[25] A final possible site for prevention messages for young adults is the workplace, since most young adults are employed. Our impression is that there are relatively few organized prevention activities around reproductive health issues, except possibly for those working in the military or in health care.

From a lifetime perspective, young adulthood is the age of greatest sexual risk, especially for acquiring STDs or HIV or causing unintended pregnancies. Despite this, young adults are less likely to receive prevention messages at this age than when they are in high school. Part of the problem is structural: Because there are no universal institutions like junior or high school that reach all young adults, we

need to develop better ways to reach young men where they are. The media can spread prevention messages widely, but probably have less impact than interpersonal communications. Community programs aimed at young adults can and should be fostered. Most young men have at least some annual contact with medical professionals; this is an important opportunity to provide more information about reproductive health to their young male patients. On a broader level, we need to foster social norms in which family and friends feel that it is relevant and appropriate to talk about reproductive health issues with young adults.

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