Teenagers Who Refrain from Having Sex May Experience Social, Emotional Consequences

Reports from a sample of California high school students suggest that over time, teenagers increasingly feel negative social or emotional consequences of refraining from sexual activity, and their experiences of positive consequences diminish.[1] In a two-year longitudinal study, changes in reported consequences of refraining from sexual activity followed similar patterns regardless of participants' sexual experience. Reports of any consequence were more likely among females and sexually experienced students than among males and those who had never had intercourse.

The study was conducted in two public schools beginning in fall 2002, when participants were in ninth grade. Students were asked to complete self-administered surveys every six months for two years; the analyses were based on the 612 teenagers who answered the baseline survey's questions about their sexual experience and any emotional or social consequences they had experienced because they had refrained from having vaginal or oral sex. Researchers conducted separate analyses for students who were sexually inexperienced throughout the study period, those who had already had sex at baseline and those who initiated sexual activity between the first and last survey waves. They used Cochran's Q test to assess differences over time in adolescents' reports of consequences of not having sex, and logistic regression to determine whether reports of consequences were associated with gender and sexual experience.

At baseline, participants' average age was 14, and 58% were female; the students came from diverse racial, ethnic and socioeconomic backgrounds. Fifty-six percent of participants reported no sexual experience on any of the surveys; the rest were evenly divided between those who were sexually experienced at baseline and those who reported a first sexual experience in a subsequent survey wave.

In all three subgroups, the proportions of participants reporting any positive consequence of refraining from sexual activity (i.e., they had had a good reputation, their friends had been proud of them or they had felt responsible) declined significantly over the course of the study. For those who were sexually inexperienced throughout, the proportion fell from 54% to 42%; for those who were sexually experienced at baseline, from 67% to 52%; and for those who initiated intercourse during the study period, from 62% to 33%.

Reports of negative consequences (i.e., a partner had become angry or participants had had a bad reputation, felt regret, felt left out of their group, or felt let down by a partner) became increasingly frequent over time. The proportion reporting any negative consequence rose from 8% to 23% among sexually inexperienced students, from 38% to 70% among those who reported sexual experience on their initial survey and from 24% to 60% among those who first had sex during ninth or 10th grade.

Similarly, as students progressed through ninth and 10th grades, they grew less likely to report only positive consequences of not having sex and more likely to report only negative ones.

Analyses controlling for sexual experience reveal that at each survey, females were significantly more likely than males to report any positive consequence of refraining from sexual activity (odds ratios, 4.1–5.9), any negative consequence (1.6–2.6) and only positive consequences (2.3–8.6). On the first three surveys, according to analyses that controlled for gender, participants who had been sexually experienced at baseline were more likely than those who were sexually inexperienced throughout the study to report any positive consequence of not having sex (2.3–3.1); on all four surveys, they were more likely to report any negative consequence (4.0–9.0). At the end of grade 10, sexually inexperienced students were more likely than those who had been sexually experienced early in ninth grade to report only positive consequences (4.0). The pattern of results was similar when sexually inexperienced students were compared with teenagers who initiated intercourse during the study; the two sexually experienced groups differed little from each other.

The researchers note that their results may not be widely generalizable and that the limited number of potential consequences they studied "may not describe adolescents' full experiences." Furthermore, they acknowledge that they cannot determine whether teenagers who reported refraining from sexual activity were practicing abstinence, selectively rejected sexual encounters or simply lacked opportunity. Nonetheless, they conclude, their findings underscore that "refraining from sexual behavior has emotional and social consequences." Therefore, they write, comprehensive sex education should include instruction that "may promote decisions to refrain from sexual activity that feel rewarding, and decisions to engage in sexual activity that are based on maturity and perceived readiness."–*D. Hollander*

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Repetition May Be Key To Success in Parent-Child Discussions About Sex

The closeness of a parent-adolescent relationship and the quality of communication within that relationship are important predictors of teenagers' sexual risk-taking; evidence from a study of a program aimed at enhancing parent-child sexual communication suggests that parents' repetition of sex-related information may be a more important predictor of those relationship characteristics than the breadth of sexual communication.[1] The number of topics that teenagers said their parents addressed repeatedly in discussions related to sex was positively associated with the adolescents' perceptions of closeness with their parents, their ability to communicate with them in general and on sexual topics, and the openness of their sexual communication. By contrast, the number of topics covered was positively associated only with openness of sexual communication.

The eight-week communication program was conducted between 2002 and 2005 at 13 California worksites; employees were eligible to participate if they were parents who lived with at least one child in grades 6–10. After participants and their eligible children completed baseline surveys, the parents were randomly assigned to attend the program or to remain in the study as members of the control group. One month, three months and nine months after the intervention ended, all participants from both the intervention and the control groups, as well as their children, completed follow-up surveys. Analysts used data from the 312 teenagers in the control group who completed all surveys to assess associations between characteristics of parents' and children's sexual communication and characteristics of their relationship.

In the baseline survey, teenagers were asked if they had ever discussed each of 22 sex-related topics with their participating parent; at every follow-up, they were asked if they had discussed each of the same topics since the previous survey. The number of new topics discussed during the study period was used as an indicator of breadth of communication, and the number discussed more than once as a measure of repetition of communication. At baseline and the final follow-up, adolescents also were asked to rate their overall relationship with the parent in the study, their closeness with that parent, their ability to talk to that parent in general and about sexual topics, and the openness with which they and their parent discuss sexual topics.

On average, teenagers in the sample were roughly 13 years old, and their participating parents were 44. Adolescents were about evenly divided by gender; 70% of the parents were mothers. Nearly half of the parents were white, and most of the rest were black, Asian or Latino; 56% had at least a college education.

In initial analyses, parent's gender was associated with all of the sexual communication measures: Mothers had discussed significantly more sex-related topics with their children than fathers had before baseline (means, 7.9 and 5.2, respectively), introduced more topics during the study period (3.1 vs. 2.2) and repeated more topics during follow-up (12.2 vs. 5.7). Other demographic

characteristics had fewer associations with communication: Male adolescents reported more new topics during follow-up than did females (3.3 and 2.4, respectively). Parent-child pairs of the same gender had covered fewer topics before baseline than had those of opposite gender (6.3 vs. 8.0). And the parent's level of schooling was negatively correlated with both the number of topics already discussed by baseline and the number repeated during follow-up (correlation coefficients, −0.20 and −0.13, respectively).

Linear regression, controlling for adolescents' and parents' ages, was used to examine associations between parent-child sexual communication and teenagers' perceptions of their relationship and communication with their parents. Results showed that repetition of sexual communication was positively associated with four of the five measures of teenagers' perceptions: The more repetition adolescents reported, the more highly they rated their closeness with their parent, their ability to communicate generally and about sexual topics, and the openness of their sexual communication (coefficients, 0.15–0.24). Breadth of communication was associated only with perceived openness (0.14), and number of topics discussed before baseline was not related to any perceptions about parent-child relationships or communication. Adolescents' age was negatively associated with perceived openness of sexual communication, and parents' age was positively associated with this measure.

The analysts comment that their findings "do not imply that the breadth of sexual communication is unimportant," but that parents who have just one "big talk" about sex with their children are not likely to be as effective as those who "introduce new sexual topics and then develop them through repeated discussions." Although they acknowledge that additional work is necessary to flesh out the role of parent-child relationship characteristics in teenagers' risk-related behavior, they recommend that clinicians encourage parents to have repeated discussions about sex-related topics with their children.–*D. Hollander*

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Despite Published Recommendations, Adults' Routine Health Care Often Lacks Attention to STD Prevention

If primary care clinicians in Washington State are any indication, STD prevention services are unlikely to be a part of health maintenance visits for all adults.[1] Only six in 10 providers surveyed in 2000 said that they routinely conduct risk assessment or counseling, three in 10 offer all adults STDs tests and two in 10 routinely offer HIV tests during such visits. Larger proportions, however, offer prevention services to selected patients whom they consider to be at high risk of infection. Universal provision of prevention services was more common among nurse-midwives than among professionals in four other specialties.

The survey was conducted among a random sample of family practitioners, internists, obstetrician-gynecologists, nurse practitioners and certified nurse-midwives. Physicians were eligible for inclusion if they practiced in Washington and spent most of their professional time seeing patients; nurses, if they specialized in adult or family care. A total of 710 clinicians completed the mailed questionnaire; the 519 who reported that they provide health maintenance examinations and answered questions about their STD prevention practices constituted the analytic sample. Researchers used chi-square tests and analyses of variance to examine differences among provider types, and logistic regression to identify clinician and practice characteristics associated with offering the three key types of prevention services.

Participants were about equally divided among the five specialties, 54% were women and 45% had been in practice for fewer than 10 years. Providers of all types reported that roughly three-quarters of their patients are white; depending on clinicians' specialty, 58–99% of respondents' patients are women. On average, 28% of patient visits to these clinicians are for routine health care; the proportion is significantly higher among nurse-midwives (64%) than among other provider types (21–45%). Ninety-five percent of survey participants had received training in STD or HIV risk assessment, and 91% had been trained in prevention counseling. Some 80% had diagnosed at least one STD in the past year; internists were the least likely to have done so (56%, compared with 79–89% of others). However, 61% had ever diagnosed an HIV infection, and internists were the most likely to have done so (85% vs. 24–77%).

Clinicians were asked how frequently they engage in each of 14 risk assessment activities; responses varied widely. More than eight in 10 respondents said that they usually or always ask questions about risk if patients request contraceptives, and a similar proportion ask about HIV risk if patients have had or are currently infected with an STD. However, nearly two-thirds target particular subgroups of patients for these discussions, half look for lifestyle or other cues suggesting that patients may be at risk and one in four use their "professional judgment or intuition" to identify individuals in need of counseling. Respondents who said that they generally ask about specific behaviors regardless of an individual's apparent level of risk or as a routine part of the patient history were considered to take a universal approach to risk assessment; 56% were in this category. The proportion who conduct universal assessment ranged from 39% among internists to 80% among nurse-midwives.

Analyses that controlled for clinicians' background and professional characteristics, as well as characteristics of their patient populations, revealed that certified nurse-midwives were significantly more likely than family practitioners to routinely assess adults for STD risk (odds ratio, 3.1). Clinicians who had been practicing for fewer than 10 years and those who had had continuing education in prevention counseling also had elevated odds of reporting universal risk assessment (2.3 and 2.6, respectively).

Clinicians' reports of approaches to prevention counseling also varied by specific strategy and by provider type. Of the 12 approaches the survey explored, counseling patients who have STD symptoms was the most widely used, reported by 95% of participants. Eight in 10 respondents usually or always offer counseling to contraceptive patients, but fewer than half routinely provide STD counseling while taking histories. Sixty percent reported one of two universal counseling strategies—personalized, interactive counseling with all patients or with those who appear to be at high risk.

Universal counseling was most common among nurse-midwives (85%) and least common among internists (48%).

Nurse-midwives were more likely than family practitioners to offer universal counseling (odds ratio from multivariate analysis, 2.9). The odds of reporting this prevention strategy also were raised among nurse practitioners (2.5), providers who work in public clinics (2.4), those who had diagnosed at least one STD in the past year (2.0) and women (1.02).

The last type of prevention service examined, HIV and other STD testing, was assessed through 12 questions. The vast majority of participants reported that they offer STD testing if they detect signs or symptoms of disease (91%) or if patients have concerns about sexual practices (96%). Thirty percent offer STD testing to all patients and were therefore categorized as using a strategy of universal testing. Virtually all clinicians said that they offer HIV testing to patients whose partners are STD-infected (98%), who express concerns about sexual practices (96%) or who have opportunistic infections that may be a sign of HIV infection (94%); nine in 10 offer HIV testing to all patients who test positive for another STD. Only 19% offer HIV testing to all patients. The proportions reporting universal testing were highest among nurse-midwives (74% for STDs and 55% for HIV) and lowest among internists (8% and 12%, respectively).

In multivariate analyses, nurse-midwives had elevated odds of reporting that they offer universal testing for both STDs (odds ratio, 10.2) and HIV (6.8). Likewise, clinicians who had been in practice for fewer than 10 years had elevated odds of both (1.8 and 2.3, respectively). Nonwhite respondents were slightly more likely than whites to report offering STD testing to all patients getting a health maintenance examination (1.02).

According to the researchers, the findings demonstrate "that many [primary care] clinicians do not follow guidelines published by public health authorities that recommend universal questioning and counseling of all patients regardless of probable risk" for HIV and other STDs. The investigators contend that "current practices undoubtedly miss opportunities to detect and reduce risks," and they urge further research into the extent to which selective prevention practices have "a positive impact on personal and public health." They also comment that interventions aimed at expanding provision of prevention services are necessary and should be informed by research into beliefs, attitudes and characteristics of practice environments that influence clinicians' approach to helping patients avoid transmitting or acquiring STDs.–*D. Hollander*

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Long-Term Benefits Of Delaying First Sex Appear to Be Limited

Delayed initiation of intercourse is associated with reductions in the likelihood of some risky behaviors, but not necessarily with the kinds of physical and emotional health benefits that proponents of abstinence-only education suggest it is, according to analysts who examined data from a 1996 survey of U.S. adults.[1] Respondents who had first had sex later than the norm for individuals of their gender and background had a reduced likelihood of reporting risky partners and of denying that they were at risk for STDs; associations between delayed sexual onset and reductions in other risky behaviors were found for men or women but not both. However, respondents who had begun having sex later than the norm were no more satisfied with their sexual relationships than were those who had started at a normative age and did not rate their general health any better; males reporting a late start had elevated odds of saying that they had erectile, sexual arousal or orgasm problems.

The National Sexual Health Survey was conducted among English- and Spanish-speaking individuals aged 18 or older who lived in the 48 contiguous states. In telephone interviews, participants answered questions about their background characteristics; sexual behavior and functioning; current relationships; and general physical health. Analysts categorized timing of first sex by examining distributions of age at first intercourse within subgroups defined by gender and racial or ethnic and educational background; ages in the top and bottom quartiles of each distribution were considered late and early for that subgroup, respectively, and those in the middle two quartiles were considered normative. To assess long-term correlates of the timing of sexual debut, the analysts used logistic regression to compare outcomes among respondents who had first had sex at an early or a late age for their subgroup with those who had done so at the normative age. Data were weighted so that results can be generalized to all U.S. adults.

Men and women were about equally represented among the 8,466 respondents; 74% of participants were white, and 55% had no more than a high school education. On average, male respondents were 43 years old, and females were 46. Some 65% and 59%, respectively, were involved in sexual relationships, and most of these were married. The overall and normative mean age at first intercourse was 18; the mean was 14 for participants who had begun sexual activity early and 22 for those who had begun late.

For men, early intercourse was positively associated with reports of almost every behavioral risk examined and of erectile, sexual arousal and orgasm problems; it was negatively associated with participants' assessments of their general health and was not related to their views of their sexual relationships. Among women, those who had started having sex early had an increased likelihood of reporting most risk-related behaviors, but not of other adverse outcomes.

By contrast, both men and women who had started having sex late had reduced odds of reporting any risky partners in the previous year or in the previous five years (odds ratios, 0.6–0.7), and were less likely than their peers with a normative start to deny their vulnerability to STDs (coefficient, −0.17 for each gender). Additionally, men who had first had sex late reported fewer partners in the past five years than those who had done so at a normative age (−0.16); women with a late start had reduced odds of saying that they had frequently had sex while under the influence of alcohol or drugs (odds ratio, 0.6) and that they had had an STD (0.5).

Participants' satisfaction with their sexual relationship was not associated with timing of first intercourse, but men who had started having sex late considered their relationships more solid than did their counterparts who had started at a normative age (coefficient, 0.07). Delayed intercourse was associated with reduced odds of problems with sexual arousal among women (odds ratio, 0.8), but with elevated odds of arousal, erectile and

orgasm problems among men (1.5–1.7). Respondents' overall assessments of their health were unrelated to late initiation of intercourse.

Comparisons between respondents who began intercourse before marriage and those who did not have sex until they were married yielded similar results to those for normative versus late initiation. One notable exception is that women whose first intercourse occurred within marriage had an increased likelihood of reporting arousal problems (odds ratio, 1.4).

The analysts note that their study was limited by the use of an existing data set that did not include potentially important outcome variables, and by other characteristics of the data and the sample. They also point out that because the study was cross-sectional, they cannot draw causal inferences from their findings. Nonetheless, they conclude that the results have important implications for sex education in the United States. In particular, the finding of problems with sexual functioning associated with late sexual initiation "lends credence to research showing that abstinence-only education may actually increase health risks and that strategies designed to promote relevant sexual health information, motivation, and skills are likely to be more effective than abstinence-only messages in helping young people avoid short- as well as long-term health consequences." Greater understanding of the relationship between timing of first intercourse and long-term outcomes, they write, "is urgently needed to inform adolescent health policies and programs."–*D. Hollander*

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For Some Newly Homeless Youth, Living Situation And Substance Use Are Linked to Risky Sexual Behavior

Living situation and substance use may be key predictors of risky sexual behavior among newly homeless young people. In a sample of Los Angeles County youth who had recently left home, the odds of reporting multiple sexual partners were lower for males who were housed in institutional settings than for those living in nonfamily settings, and were elevated for both females and males who used alcohol or other drugs. Females who lived in an institution or with family were more likely than others to report consistent condom use, while those who used drugs had reduced odds of engaging in this protective behavior; for males, none of the characteristics studied were associated with condom use.[1]

The young people in the study were recruited at shelters, drop-in centers and street hangouts in 2001–2002; to be eligible, they had to be 12–20 years old and to have been away from home for at least one night but for no more than six months. Participants completed interviews, conducted by specially trained research staff with the aid of audio computer-assisted self-interviewing technology, when they entered the study and then at specific intervals for up to 24 months. Demographic data were collected at baseline; follow-up interviews covered current housing situation (categorized as family, institutional or other, "nonfamily," setting) and emotional distress (assessed with a standard scale), as well as substance use and sexual risk behaviors (number of partners, types of partners and consistency of condom use) in the past 90 days. Questions on sexual behavior referred to experience with vaginal and anal intercourse. The researchers used longitudinal random intercept effects models to identify characteristics associated with participants' reports of multiple sexual partners and of consistent condom use; they constructed separate models for females and males.

A total of 261 young people enrolled in the study—156 females and 105 males, whose average age was 15.5. The participants came from diverse racial and ethnic backgrounds: Thirty-three percent were U.S.-born Latinos, 30% were black, 23% were white or Asian, and 15% were foreign-born Latinos. At baseline, 78% were living in institutional settings (e.g., shelters, boarding schools, group homes), 10% with family members and 12% in other situations. Three-quarters of the sample were sexually experienced, reporting an average of 1–2 partners. However, one-half had not had a partner in the past three months. Only about a third of those reporting a recent partner said that they always used condoms. Seventy percent of the young people reported using alcohol or drugs in the past 90 days; 16% showed signs of depression or anxiety.

In the multivariate analyses, females' odds of reporting multiple partners increased with length of participation in the study and with age (odds ratio, 1.1 for each), and were elevated among those reporting use of various substances (1.3–1.6). The likelihood of having had multiple partners was lower among Latinas than among white or Asian females (0.8 for immigrant Latinas and 0.9 for those who were U.S.-born). By contrast, only living situation and substance use were associated with men's reports of multiple partners: The odds were reduced among those living with relatives and those housed in an institutional setting (0.8 for each), and were elevated among those who said they had recently used alcohol or other drugs (1.4–2.3).

A number of characteristics were identified as predictors of consistent condom use for females, but none were significant in the analyses for males. Duration of study participation was positively associated with females' reports of consistent use (odds ratio, 1.5), as was living with family members (4.0) or in an institutional setting (6.5). Females reporting substance use had reduced odds of saying that they always used condoms, whether they had a serious, monogamous partner or a casual one (0.3–0.4).

While acknowledging the limitations of their sample and the possibility that unmeasured factors affected the results, the researchers conclude that living situation and substance use "appear to be the most salient [predictors of] sexual risk" among newly homeless young people. They speculate that the findings regarding young people's being housed in institutional or family settings reflect the supervision and social support that may be available in these environments. Therefore, they recommend that interventions targeting newly homeless youth help them find housing with such support, as well as help them reduce their levels of substance use.–*D. Hollander*

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First-Year Contraceptive Failure Rate Is Substantially Above Target for 2010

With two years to go, prospects for meeting a key reproductive health goal of the federal government's Healthy People 2010 initiative seem dim. An analysis of data from the last two cycles of the National Survey of Family Growth (NSFG) reveals that women's probability of experiencing a contraceptive failure within the first year of use of a reversible method was essentially unchanged between 1995 and 2002; the 2002 figure—12%—is

considerably above the Healthy People target of 7%. Contraceptive failure varies by method and by women's characteristics, but the socioeconomic characteristics associated with relatively high probabilities of failure are not the same for all methods.[1]

Two types of analysis were used to assess contraceptive failure. The researchers first estimated life-table probabilities of failure at different durations of use for each of the five most commonly used contraceptives in the United States (injectables, pills, male condoms, withdrawal and fertility awareness) and for women with various characteristics. In multivariate analyses, they then examined relative risks of pill, condom and withdrawal failure for women of different subgroups. Data were corrected for underreporting of abortion in the NSFG, which is known to be substantial and likely would lead to underestimates of contraceptive failure.

The life-table calculations reveal that 4% of women who begin using any contraceptive experience a failure within three months; the proportion rises to 7% at six months and to 12% at one year. The injectable and the pill have the lowest one-year failure rates (7% and 9%, respectively), and methods based on fertility awareness the highest (25%); male condoms and withdrawal have intermediate probabilities of failure (17% and 18%, respectively). Comparison of these 2002 data with data from the 1995 survey reveals no significant changes in either overall or method-specific failure rates.

Women in their 20s are significantly more likely than those aged 30 or older to experience a contraceptive failure during their first year of use (14–15% vs. 8%), blacks are more likely than whites to do so (21% vs. 10%) and cohabiting women have a greater probability than married women of experiencing a failure (22% vs. 10%). The probability of failure is significantly higher among women who intend to have more children or are not sure, those who have already given birth and those living below 200% of the poverty line (14–20%) than among their counterparts who intend no more births, are nulliparous and are better-off (6–9%).

Different predictors of failure emerge for the three methods studied in the multivariate analysis. The risk of pill failure is significantly elevated for women younger than 30, those who intend to have more children or are unsure, those who are cohabiting or not in a union (relative risks, 1.7–2.5) and, especially, those who have given birth (7.9). A heightened risk of condom failure is predicted by being younger than 30, intending more births or being unsure, cohabiting, being parous, being black and living at less than 200% of the poverty level (1.5–2.5). The risk of experiencing a failure during use of withdrawal is increased among women who intend more children or are not sure, have never married, have given birth or live below 200% of the poverty line (1.9–4.2).

Noting that "the effectiveness of a method greatly depends on vigilance and effective use by the woman and her partner," the analysts infer that many women, particularly those in some socially and economically disadvantaged subgroups, are unable to overcome difficulties using methods. As a result, they conclude that reaching the Healthy People goal of reducing the contraceptive failure rate to 7% and lowering failure rates among disadvantaged groups by 2010 "will be very difficult in the absence of major policy and programmatic interventions." Their recommendations include simultaneous efforts to increase contraceptive education and access, and to improve couples' communication about contraceptive use.–*D. Hollander*

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