Prevalence of STI/HIV Counseling Services Received by Teen Males, 1995 to 2002

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Abstract

Purpose: To examine whether improvements have been made in the delivery of STI/HIV

counseling services to teen males.

Methods: Analysis was performed using the 1995 National Survey of Adolescent Males (N=1729,

response rate=75%) and the 2002 National Survey of Family Growth (N=1121, response

rate=78%), two nationally representative surveys of 15-19 year old males. Main outcome measure

included discussion about STIs/HIV with a doctor/nurse. Weighted bivariate and multivariate

Poisson regression analyses examined the association of outcome measures and survey year among

males engaging in various types of sexual behaviors (e.g., varying partner numbers, higher risk

sex) unadjusted and adjusted for sociodemographic and health care access factors.

Results: In 2002, STI/HIV counseling receipt in the past year was reported by one-third of males

who reported 3 or more female partners, anal sex with female partners, or oral/anal sex with male

partners. Only 26% of males reporting high-risk sex (e.g., sex with prostitute, person with HIV or often/always high with sex) reported STI/HIV counseling receipt. Overall, no improvements were found between 1995 and 2002 in STI/HIV counseling, even after controlling for sociodemographic and health care access factors.

Conclusions: Mechanisms are needed to raise the importance of STI/HIV counseling services among sexually active male teens as well as to improve health care providers' delivery of these services.

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Introduction

The delivery of sexual and reproductive health services to adolescents is recommended by professional organizations because the consequences of adolescents' sexual risk behaviors, including sexually transmitted infections (STIs), HIV and unintended pregnancy, remain high and are preventable [1-3]. The first recommendations promoting adolescent-specific preventive services were released in the mid-1990s by the American Medical Association's Guidelines for Adolescent Preventive Services [1], the Maternal and Child Health's Bright Futures [4], and the American Academy of Pediatrics' Guidelines for Health Supervision [5]. However, sexual/reproductive health care has historically neglected the male partner [6]. Guidelines released in 2000 outlined the importance of increasing the availability and accessibility of reproductive health education and care to young men [6].

Few studies have examined the receipt of reproductive health care among nationally representative samples of male adolescents. One study, describing data from a 1995 household sample of young men, showed that few sexually active males reported receiving STI/HIV counseling (36%), STI testing (17%) or HIV testing (25%) and service receipt was not higher in the context of recent annual examinations [7]. Another study, describing data from the 1999 school-based youth risk behavior survey, showed similar results with only 33.5% of sexually active male adolescents reported being counseled on pregnancy, STI and HIV prevention during their last annual examination [8]. This is in contrast to 61.4% of sexually active females reporting having received the same services. These studies assessed service delivery to young men prior to or concurrent with the release of guidelines promoting adolescent clinical preventive services and male reproductive health. Sexual health needs in these studies were defined as ever being sexually active or number of sexual partners with one of the studies finding that minority, low-income and Medicaid insured teen men were more likely to discuss reproductive health or receive an HIV test

[7]. However, it is possible that health care providers' delivery of STI/HIV services is based on screening for sexual risk (e.g., type of sex, lack of condom use with sex, exchanging sex for money or drugs, etc…) [9]. Moreover, the delivery of adolescent preventive services does not always occur in the context of annual examinations or a regular source of care [7, 10]. To date, no national study has examined whether improvements have been made in male adolescents' receipt of sexual and reproductive health care regardless of an annual examination since the mid-1990 release of adolescent- and male-specific sexual/reproductive health services guidelines and whether the report of service receipt varies by sexual risk. Although a recent study found that only 16% of heterosexual men reported HIV testing and less than half reported sexual/reproductive health service receipt in the past year, this study focused on services received among men aged 20-44 only [11]. Another recent study assessing delivery of STI care using scenario-driven vignettes among a national sample of health care providers found that risk reduction discussions with male patients included condom use advice [12].

Thus, the goal of this paper is to examine whether there has been any improvements in male adolescents' report of STI/HIV counseling services received using the National Survey of Adolescent Males (1995) and the National Survey of Family Growth (2002), two nationally representative samples of male adolescents aged 15 to 19 years. We hypothesize following the release of adolescent- and male-specific sexual/reproductive health guidelines male adolescents' receipt of STI/HIV counseling services will increase from 1995 to 2002, after controlling for sociodemographic and health care access factors. We also hypothesize that the report of services received will be higher among young men involved in high-risk sexual behavior.

Methods

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Survey Designs

Two data sets were examined in this study: the 1995 National Survey of Adolescent Males (NSAM) and the 2002 National Survey of Family Growth (NSFG). Both surveys were designed specifically to study sexual and contraceptive behavior in the U.S. The NSAM is a nationally representative household sample of non-institutionalized 15-19 year-old U.S. men who were interviewed in 1995 (response rate=75%, N=1,729). The NSFG Male Cohort is a nationally representative household sample of 15 to 44 year-old U.S. men who were interviewed in 2002 (response rate=78%, N=4,928). In 2002 the NSFG included males for the first time; the survey was carefully designed to allow trend comparison to the earlier NSAM. Both surveys utilized multistage area-probability sampling to provide racially and ethnically representative household samples. Information about the sampling design and procedures of both surveys has been previously published [13, 14]. Survey administration consisted of an in-person interview followed by a computer-assisted, self-administered survey (ACASI) to collect more sensitive information [15]. The data presented here come mainly from the self-administered items.

The Johns Hopkins University's human subjects review board provided approval to perform secondary data analysis.

Measures

STI/HIV counseling services. Health services receipt assessed in both surveys included two dichotomous (0=no, 1=yes) items: "Have you discussed HIV or STDs with a doctor or a nurse in the past 12 months?" For only the 2002 NSFG, "Have you received advice about birth control in the past 12 months?" was dummy coded in a similar manner.

Sexual behavior. Sexual behavior measures assessed in both surveys included seven items. Five items, dummy coded as no or yes, included "Have you ever had sex with a female?," "Have you

ever had oral sex with a female?," "Have you ever had anal sex with a female?," "Have you

engaged in high risk sex in the past year (defined as sex with a prostitute, HIV infected person, or

sometimes/always high during sex)?," and "Have you ever had oral/anal sex with a male?" Among

sexually active males, the number of female partners one had vaginal, oral or anal sex in the past

year was coded as 1, 2, or 3 or more partners. Among sexually active males, condom use with a

female partner at last vaginal sex was coded as no condom use or condom use.

Sociodemographic factors. Demographics included participant's age and race/ethnicity coded as

non-Hispanic white, non-Hispanic black, Hispanic, or other race. Mother's education was coded as

having completed less than high school or receipt of a high school diploma or higher.

Health care access factors. Regular source of care, measured in the 1995 NSAM by "Do you

have a doctor or place where you go for medical checkups or general health care?" and the 2002

NSFG by "Is there a place that you usually go to when you are sick or need advice about health?",

was dummy coded as no or yes. Health insurance status during the past 12 months was coded as

uninsured, publicly insured, or privately insured.

Data Analysis

For the purposes of this analysis, we used the full 1995 NSAM sample (N=1729) and participants

in the 2002 NSFG sample who were 15 to 19 years old (N=1121). All analyses were weighted

according to survey documentation [13, 14].

We first describe STI/HIV counseling service receipt, sociodemographic and health care

access factors, and sexual behavior by year and then report differences by survey year using Chi-

Square test. Next, we present bivariate and multivariate Poisson regression analyses to estimate

differences in the odds of reporting the main study outcome (talking about STI/HIV) in the past

year from 1995 to 2002. Poisson model was applied in the multivariate analyses to calculate

relative risk (RR) [16] since odds ratios overestimate RR when main outcomes are common

(>10%) and thus lead to inaccurate estimates of health care use [17]. Analyses were performed

separately among each sexual behavior category. Data were prepared using SPSS 12.0 and

analyzed in STATA 9.0 to adjust for the complex sampling designs.

Results

Sociodemographic and health care access factors. Between 1995 and 2002, there were no

significant differences by race or insurance status (Table 1). Significant differences were found in

mother's education and regular source of care, with more participants in 2002 than 1995 reporting

mother's receipt of a high school diploma or higher (86.7% vs. 80.0% Chi-square=21.8, *p*=0.04)

and fewer participants in 2002 than 1995 reporting a regular source of care (78.2 vs. 86.4% Chi-

square=74.6, *p*<0.001).

Sexual behavior. Between 1995 and 2002, fewer males reported having vaginal sex (58.4% vs.

50% Chi-square=45.8, *p*=0.001), and among sexually active males more males reported using a

condom at last vaginal sex (64.4% vs. 71.4% Chi-square=25.2, *p*=0.033) and having one female

partner in the last year versus 2 or more partners (Chi-square=37.5, *p*=0.024).

STI/HIV counseling services. Talking with a provider about STIs/HIV in the last year was

reported by only 24.8% of participants in 1995 and 21.7% in 2002. There were no significant

differences between survey years in the receipt of this service. Talking with a provider about birth

control in the last year was reported by 17.5% of participants in 2002, the only year that assessed

this area. Among participants who reported talking about birth control approximately three

quarters (73.5%) also reported talking with a provider about STIs/HIV in the last year.

Prevalence of Receipt of STI/HIV Counseling Services by Sexual Behavior

The proportion of all male adolescents in 2002 who reported STI/HIV counseling receipt in the last year was 21.7% (Table 2). On average, 30% of males engaging in various sexual behaviors reported STI/HIV counseling receipt in the past year. Higher reports were observed for males who ever had oral/anal sex with a male partner (34.2%), had three or more female partners in the last year (33.5%), ever had anal sex with a female (31.1%) and did not use a condom at last vaginal sex (30.9%). Only 26.3% of males who ever had high-risk sex and 14.7% of males with female partners who had not engaged in vaginal sex yet reported STI/HIV counseling receipt. Patterns for 1995 were similar except that STI/HIV counseling receipt was lower among males who did not use a condom at last vaginal sex (24.3%) and higher among males who ever had high-risk sex (32.1%).

On average, one-quarter of males engaging in various sexual behaviors reported receiving birth control counseling in the past year.

Differences in STI/HIV Counseling Service Receipt by Sexual Behavior from 1995 to 2002

Unadjusted and adjusted odds ratios in STI/HIV counseling receipt by all participants and sexual behavior from 1995 to 2002 are described in Table 2. Regardless of the type of sexual behavior involvement, there were no differences between the unadjusted and adjusted models after controlling for sociodemographic and health care access factors. Within the adjusted models, there were no significant improvements from 1995 to 2002 in STI/HIV counseling receipt for any of the sexual risk subgroups examined.

Discussion

Overall, this study did not find evidence that STI/HIV counseling service receipt as reported by male adolescents improved from 1995 to 2002 following the release of adolescent- and male-specific sexual/reproductive health guidelines. In addition, among young men engaging in varying

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levels of sexual behaviors including high-risk sex, no improvements were found across the same time frame in the proportion of young men reporting STI/HIV counseling receipt. Only one-third of young men reported STI/HIV counseling receipt and one-quarter birth control counseling. Also, three-quarters of young men report receiving both STI/HIV and birth control counseling together.

A number of factors may contribute to findings of no improvement in this study. Although past studies have found the majority of providers report asking teenagers about sex [18, 19], lack of national guideline visibility and consistency about STI/HIV counseling with young men may have contributed to the low uptake of health care providers' preventive services delivered to this population. For example, the U.S. Preventive Services Task Force's (USPSTF) 1996 specific Chlamydia and gonorrhea guidelines stated there was insufficient evidence to recommend for or against routine screening high-risk men except in settings where asymptomatic infection was highly prevalent [20] whereas HIV counseling and testing was recommended for persons at increased risk (defined as persons seeking STI treatment, men who have sex with men, injection drug users, persons who exchange sex for money or drugs, and persons whose sex partners were HIV-infected, bisexual, or injection drug users) [20]. In this study although STI/HIV counseling and testing receipt was slightly higher among some of the sexual risk groups, overall service receipt was still quite low. Little is known how health care providers make decisions about services they deliver to male teens as it relates to sexual/reproductive health especially given inconsistent guidelines. Proposed barriers to physician's general delivery of preventive services include lack of national guideline knowledge, agreement, perceived effectiveness and/or implementation [21, 22]. In addition, personal self-efficacy to perform given clinical tasks and external factors that may interfere with care delivery despite positive intentions to do so, such as time, reimbursement, or other organizational constraints, may impact service delivery [23]. Provider beliefs that conform to sexual double standards (e.g., the belief that sexual behavior is

acceptable among male teenagers) may also be a factor [24]. Thus, when determining mechanisms to improve the delivery of such services to young men, it may be necessary to examine multiple points of intervention. For example, one systems-based intervention designed to increase Chlamydia screening among adolescent males found that Chlamydia screening significantly increased at experimental sites from 0% at baseline to 60% 18-months later compared to control sites that changed only from 0% to 5% during the study period [25]. Future research should examine whether improvements in male teens' STI/HIV service receipt among contemporary cohorts will be observed with easier to administer and widely available newer laboratory testing technologies (e.g., urine-based nucleic acid amplification tests for gonorrhea and Chlamydia and rapid tests for HIV), the recently revised CDC's guideline (2006) recommending all individuals between 13 and 64 years be screened for HIV regardless of recognized risk factors [26], and the recently updated USPSTF's guideline (2008) recommending high-intensity behavioral counseling to prevent STIs for all sexually active adolescents at increased risk for STIs [27].

On the patient level, a number of factors may prevent young men from seeking care in general and specifically for STI/HIV services including fear, stigma, shame, denial, lack of social support and the need for confidential services [28-32]. Unlike women who receive bundled STI/HIV services as part of gynecological exams, birth control visits or prenatal care [33], young men have more limited access to sexual/reproductive health care. In addition, with sexual activity onset serving as a rite of passage into manhood, many young men do not think about the consequences of sex with some holding more traditional masculine beliefs that may preclude them from help and/or care seeking despite symptoms [34, 35]. Young men also face multiple systems barriers to care seeking including but not limited to lacking health insurance and knowing where to go for care [36]. Given that many STIs including HIV may be asymptomatic, methods to raise young men's awareness about STIs/HIV, testing options and resources may be needed to help

dismantle young men's barriers to care.

This study also found that service receipt varied by level of sexual risk. Approximately one-third of young men engaging in high risk sex reported receiving STI/HIV counseling in the last year but only one-quarter reported birth control counseling services. Counseling about dual protection methods (i.e. condom use plus hormonal method) with male patients should be promoted in the health care setting since the majority of young men report using condoms to prevent both pregnancy and STIs/HIV [37] and many young men are not familiar with female hormonal methods [38]. Studies are also needed to lend support to the direct benefit of screening males for STIs. Only such evidence will help drive policy, guidelines and, ultimately, behavior change of providers to see significant improvements in the delivery of sexual/reproductive health care to this population.

This study has several potential limitations. First, recall bias may underestimate service receipt in the last year. For example, a previous study among adult men that compared visit recall and medical record found 91% agreement for the past 2 weeks but only 30% agreement for the past year [39]. Second, STI/HIV measures that assess ever having discussed these issues with a health care provider may have resulted from patient-directed rather than clinician-initiated counseling and thus likely overestimate providers' delivery of these services. Third, measures of STI/HIV and birth control counseling receipt are limited to whether counseling occurred but do not describe the quality of the counseling and whether counseling led to behavior change. Fourth, STI and HIV testing services were not assessed in both datasets using comparable measures to allow assessments of trends over time. Fifth, the focus on STI/HIV services in this study provides a narrow view of the types of sexual/reproductive health services that can be delivered to young men. Finally, the more recent 2002 NSFG data is an older dataset, yet adolescent preventive care delivery by providers still remains low among more recent cohorts [40]. Major strengths of this

study include its examination of trends in STI/HIV counseling services over time among nationally representative samples of male adolescents and differences in service receipt among young men with varying levels of sexual risk behavior involvement.

Conclusion

This study suggests that mechanisms need to be developed to improve providers' delivery of STI/HIV counseling services to young men and young men's use of reproductive health care. Future work should examine whether newer CDC and USPSTF guidelines and laboratory tests help to improve STI/HIV services delivered to this population and the degree to which this population receives sexual/reproductive health care beyond STI/HIV counseling.

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References

1. Department of Adolescent Health American Medical Association. Guidelines for adolescent preventive services. Chicago: American Medical Association; 1992.

2. Hagan JF, Jr., Shaw JS, Duncan P, editors. Bright Futures: Guidelines for health supervision of infants, children, and adolescents-Third edition. Elk Grove Village, IL: American Academy of Pediatrics; 2008.

3. Eaton DK, Kann L, Kinchen S, et al. Youth risk behavior surveillance--United States, 2007. MMWR Surveill Summ 2008;57(4):1-131.

4. Green M, editor. Bright futures: guidelines for health supervision of infants, children, and adolescents. Arlington, VA: National Center for Education in Maternal and Child Health; 1994.

5. American Academy of Pediatrics, Committee on Psychosocial Aspects of Child and Family Health. Guidelines for Health Supervision III. Elk Grove Village, IL: American Academy of Pediatrics; 1997.

6. Sonenstein F, editor. Young Men's Sexual and Reproductive Health: Toward a National Strategy - Getting Started. Washington, D.C.: The Urban Institute; 2000.

7. Porter LE, Ku L. Use of reproductive health services among young men, 1995. J Adolesc Health 2000;27(3):186-94.

8. Burstein GR, Lowry R, Klein JD, et al. Missed opportunities for sexually transmitted diseases, human immunodeficiency virus, and pregnancy prevention services during adolescent health supervision visits. Pediatrics 2003;111(5 Pt 1):996-1001.

9. Tao G, Irwin KL. Receipt of HIV and STD testing services during routine general medical or gynecological examinations: variations by patient sexual risk behaviors. Sex Transm Dis 2008;35(2):167-71.

10. Rand CM, Auinger P, Klein JD, et al. Preventive counseling at adolescent ambulatory visits. J Adolesc Health 2005;37(2):87-93.

11. Kalmuss D, Tatum C. Patterns of Men's Use of Sexual and Reproductive Health Services. Perspect Sex Reprod Health 2007;39(2):74-81.

12. St Lawrence JS, Kuo WH, Hogben M, et al. STD care: variations in clinical care associated with provider sex, patient sex, patients' self-reported symptoms or high-risk behaviors, partner STD history. Soc Sci Med 2004;59(5):1011-8.

13. Sonenstein FL, Ku L, Lindberg LD, et al. Changes in sexual behavior and condom use among teenaged males: 1988 to 1995. Am J Public Health 1998;88(6):956-9.

14. Lepkowski JM, Mosher WD, Davis KE, et al. National Survey of Family Growth, Cycle 6: sample design, weighting, imputation, and variance estimation. Vital Health Stat 2 2006(142):1-82.

15. Turner CF, Ku L, Rogers SM, et al. Adolescent sexual behavior, drug use, and violence: increased reporting with computer survey technology. Science 1998;280(5365):867-73.

16. Barros AJ, Hirakata VN. Alternatives for logistic regression in cross-sectional studies: an empirical comparison of models that directly estimate the prevalence ratio. BMC Medical Research Methodology 2003;3:21.

17. Zhang J, Yu KF. What's the relative risk? A method of correcting the odds ratio in cohort studies of common outcomes. JAMA 1998;280(19):1690-1.

18. Millstein S, Igra V, Gans J. Delivery of STD/HIV preventive services to adolescents by primary care physicians. J Adol Health 1996;19:249-57.

19. Wimberly YH, Hogben M, Moore-Ruffin J, et al. Sexual history-taking among primary care physicians. J Natl Med Assoc 2006;98(12):1924-9.

20. Guide to Clinical Preventive Services, Second Edition. U.S. Preventive Services Task Force 1996; http://www.ahrq.gov/clinic/cpsix.htm:Accessed: July 1, 2008.

21. Perkins MB, Jensen PS, Jaccard J, et al. Applying theory-driven approaches to understanding and modifying clinicians' behavior: what do we know? Psychiatr Serv 2007;58(3):342-8.

22. Cabana MD, Rand CS, Powe NR, et al. Why don't physicians follow clinical practice guidelines? A framework for improvement. JAMA 1999;282(15):1458-65.

23. Dickey L, Gemson D, Carney P. Office system interventions supporting primary care-based health behavior change counseling. Am J Prev Med 1999;17(4):299-308.

24. Crawford M, Popp D. Sexual double standards: a review and methodological critique of two decades of research. J Sex Res 2003;40(1):13-26.

25. Tebb KP, Pantell RH, Wibbelsman CJ, et al. Screening sexually active adolescents for Chlamydia trachomatis: what about the boys? Am J Public Health 2005;95(10):1806-10.

26. Branson BM, Handsfield HH, Lampe MA, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. MMWR Recomm Rep 2006;55(RR-14):1-17.

27. Behavioral Counseling to Prevent Sexually Transmitted Infections, Topic Page. U.S. Preventive Services Task Force. Agency for Healthcare Research and Quality, Rockville, MD. U.S. Preventive Services Task Force 2008; http://www.ahrq.gov/clinic/uspstf/uspsstds.htm Accessed: Oct 1, 2008.

28. Kalmuss D, Austrian K. Real men do... Real men don't: Young Latino and African American men's discourses regarding sexual health care utilization American Journal of Men's Health March 16, 2009 Online First.

29. Ford C, Best D, Miller W. Confidentiality and adolescents' willingness to consent to STD testing. Archives of Pediatrics Adolescent Medicine. 2001;155:1072-73.

30. Fortenberry JD, McFarlane M, Bleakley A, et al. Relationships of stigma and shame to gonorrhea and HIV screening. Am J Public Health 2002;92(3):378-81.

31. Lowery LM, Chung S, Ellen JM. Social support and sexually transmitted disease related healthcare utilisation in sexually experienced African-American adolescents. Sex Transm Infect 2005;81(1):63-6.

32. Marcell AV, Howard TL, Plowden K, et al. Exploring women's perceptions about their role in supporting partners' and sons' reproductive health care. American Journal of Men's Health 2009 Online first.

33. Goldstein LS, Chapin JL, Lara-Torre E, et al. The care of adolescents by obstetrician-gynecologists: a first look. J Pediatr Adolesc Gynecol 2009;22(2):121-8.

34. Frankel L. An appeal for additional research about the development of heterosexual male sexual identity. J Psychology Human Sexuality 2004;16(4):1-16.

35. Marcell AV, Ford CA, Pleck JH, et al. Masculine beliefs, parental communication, and adolescent males' health care use. Pediatrics 2007;119(4):e965-74.

36. Elster AB, Marcell AV. Health care of adolescent males: overview, rationale, and recommendations. Adolescent Medicine State of the Art Reviews 2003;14(3):525-40.

37. Martinez GM, Chandra A, Abma JC, et al. Fertility, contraception, and fatherhood: Data on men and women from Cycle 6 (2002) of the 2002 NSFG. Vital Health Stat 2006;23(26).

38. Merkh RD, Whittaker PG, Baker K, et al. Young unmarried men's understanding of female hormonal contraception. Contraception 2009;79(3):228-35.

39. Roberts R, Bergstralh E, Schmidt L, et al. Comparison of self-reported and medical record health care utilization measures. J Clin Epidemiology 1996;49(9):989-95.

40. Irwin CE, Jr., Adams SH, Park MJ, et al. Preventive care for adolescents: few get visits and fewer get services. Pediatrics 2009;123(4):e565-72.

Table 1. Frequency of health care services, background characteristics and sexual health needs

	1995 NSAM (N=1729)		2002 NSFG (N=1121)	
	N[a]	%[b]	N[a]	%[b]
Health Care Services				
STI/HIV counseling with provider in last year	496	24.8	260	21.7
Birth control education with provider in last year	-	-	212	17.5
Birth control education and STI/HIV counseling	-	-	156	12.9
Sociodemographic Factors				
Race/ethnicity				
Non-Hispanic White	618	68.0	622	63.7
Non-Hispanic Black	494	14.3	205	14.4
Hispanic	558	12.6	235	15.9
Other race	59	5.2	59	5.9
Age				
15	400	21.1	203	18.9
16	389	20.3	231	19.6
17	362	20.3	199	17.8
18	333	19.2	267	23.4
19	245	19.1	221	20.3*
Mother's highest education level				
<12th grade	361	15.5	145	11.8
≥12th grade	1,216	80.0	952	86.7*
Missing on mothers education	152	4.5	24	1.5***
Health Care Access Factors				
Health insurance				
Uninsured	225	11.9	144	11.4
Private insurance	993	70.3	731	69.4

Public insurance	469	17.8	246	19.1
Regular source of care	1,425	86.4	844	78.2**
Sexual Behavior				
Oral sex with female ever	834	54.7	617	54.6
Vaginal sex with female ever	1,078	58.4	582	50.0**
Anal sex with female ever	218	11.0	136	11.1
Condom use at last vaginal sex				
No condom use at last vaginal sex	326	35.6	146	28.6*
Condom use at last vaginal sex	700	64.4	414	71.4
Number female partners (vaginal, oral, anal sex) in last year				
1 partner	313	47.4	313	56.4*
2 partners	190	25.2	142	21.9
3 or more partners	245	27.4	158	21.6
Oral/anal sex with male ever	51	3.6	52	4.6
Engaged in high-risk sex ever (e.g., sex with prostitute, HIV infected person, often/always high with sex)	130	6.7	63	5.6

[a]Unweighted; [b]Weighted

*$p \leq .05$; ** $p < .01$; ***$p < .001$ based on Chi-Square test

Table 2. Unadjusted[a] odds ratio (OR) and adjusted relative risk (RR) of STI/HIV counseling and talking about birth control in the last year by a provider from 1995 to 2002 by sexual behavior

| | Talk about STI/HIV last year | | | | Talk about Birth Control | |
| | 1995 | 2002 | OR | aRR [c] | 1995 | 2002 |
Sexual Behavior	%[b]	%[b]	(95% CI)	(95% CI)	%[b]	%[b]
All males	24.8	21.7	0.88 (0.71-1.08)	0.86 (0.70-1.05)	-	17.5
No vaginal sex ever	18.2	14.7	0.81 (0.54-1.20)	0.78 (0.53-1.17)	-	11.1
Oral sex with female ever	26.9	26.6	0.99 (0.79-1.23)	0.97 (0.77-1.21)	-	22.1
Vaginal sex with female ever	29.5	28.7	0.97 (0.78-1.21)	0.96 (0.77-1.20)	-	24.0
Anal sex with female ever	37.0	31.1	0.84 (0.54-1.32)	0.90 (0.54-1.49)	-	28.7
Condom use at last vaginal sex						
No	24.3	30.9	1.27 (0.87-1.86)	1.24 (0.82-1.87)	-	22.3
Yes	32.6	27.7	0.85 (0.65-1.11)	0.84 (0.65-1.09)	-	24.9
≥3 female partners last year [d]	39.3	33.5	0.85 (0.60-1.22)	0.86 (0.61-1.21)	-	25.9
Oral/anal sex with male ever	42.9	34.2	0.80 (0.39-1.64)	0.70 (0.37-1.30)	-	26.9
Engaged in high-risk sex ever [e]	32.1	26.3	0.82 (0.43-1.58)	0.90 (0.46-1.74)	-	26.5

[a] Univariate logistic regression models

[b] Weighted

[c] Poisson regression estimating adjusted relative risk and 95% confidence intervals (CIs) on report of services received between NSAM 1995 and NSFG 2002 controlling for age, race/ethnicity, mother's education, health insurance status, and regular source of care

[d] Vaginal, oral or anal sex

[e] Ever had sex with prostitute, person with HIV, or often/always high with sex