

HIV Testing Among Young Adults in the United States: Associations with Financial Resources and Geography

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We estimated prevalence and odds ratios for self-reported HIV testing among sexually experienced young adults using nationally representative data obtained from Wave III of the National Longitudinal Study of Adolescent Health (Add Health). The prevalence of testing in the past year was 18.8%.

Young adults who had private or no health insurance were less likely to report testing than were young adults who had public health insurance, particularly in the South. Respondents with functional income were less likely to report testing than were those without functional income, particularly in the South and Northeast. Variable HIV testing based on finances and insurance should be addressed. (*Am J Public Health*. 2006;96:1031–1034. doi:10.2105/AJPH.2005.063248)

Half of all new HIV infections in the United States are among adolescents (aged 10–19 years) and young adults (aged 20–24 years), but approximately 50% of those infected have not been tested.¹ Detecting HIV infection early is critical to preventing transmission and limiting disease progression. HIV testing may lead to behaviors that reduce risk of infection.^{2–7} Unfortunately, many people at risk of infection lack health insurance or a regular care provider to enable testing,⁸ and socioeconomically disadvantaged groups are diagnosed later in their HIV disease.^{9,10}

Young adults are in economic transition from childhood and constitute 20% of the population without health insurance¹¹; therefore, they use fewer health services.^{12,13} Links between financial resources and HIV testing among young adults are important to understand. Furthermore, the number of incident and cumulative AIDS cases is now greatest in the South, making it critical to understanding HIV testing in this region.² We hypothesized that sexually experienced young adults, i.e., those having ever had vaginal intercourse, with few resources or living in the South would report HIV testing less than comparison groups.

METHODS

Study Design

We conducted cross-sectional analyses of Wave III of the National Longitudinal Study of Adolescent Health (Add Health) from August 2001 to April 2002, when original participants were young adults (aged 18–26 years). The Add Health sampling design is described in detail elsewhere.¹⁴ During Wave III, an interviewer traveled to homes of all original Wave I respondents who could be contacted and were currently living in the continental United States, Hawaii, or Alaska. Consenting participants completed 90-minute interviews. We limited analyses to respondents who reported having ever had vaginal intercourse.

Measures

Outcome. Self-reported HIV testing in the past 12 months was coded as “yes” or “no.”

Main factors of interest. Current health insurance coverage was defined as private (through parent, spouse, work, union, school, active-duty military, self), public (Medicaid, Indian Health Service), or uninsured (lacking health insurance). Functional income was an indicator of funds to pay for nonhousehold expenditures (e.g., health care). Respondents were coded as not having a functional income if they reported a financial inability to pay the full amount of (1) rent or mortgage or (2) bills for gas, electricity, or oil at any time in the past year.

Other characteristics and behaviors. Interview location zip codes identified regional location (Northeast, South, Midwest, West)

according to the Centers for Disease Control and Prevention surveillance definitions. To assess potential confounding factors, our analyses included demographic, sexual history, healthcare-seeking, and trauma variables.

Analyses

We used Stata, version 7.0 (StataCorp LP, College Station, TX), to account for the complex survey design of Add Health. We determined the prevalence of HIV testing and calculated bivariable relationships between testing and sociodemographics, behaviors, and health care utilization, which are nationally representative of young adults (aged 18–26 years). We analyzed survey data using logistic regression to assess the association between financial resources, region, and reported HIV testing, and examined potential confounding by individual characteristics and behaviors.

RESULTS

Of the 75.7% (n = 14 322) of Wave I respondents who completed the Wave III interview, 85% (n = 12 334) reported ever having vaginal intercourse. The overall prevalence of reported HIV testing in the past year was 18.8% (Table 1). Women reported more HIV testing than men ($P < .001$). HIV testing also varied by race/ethnicity, marital status, employment status, sexual orientation, sexual behaviors, and health care. HIV testing did not significantly differ by region ($P = .388$).

Overall, respondents without a functional income were significantly more likely to report HIV testing than those with a functional income. Results were similar, after stratification, by region in the South and Northeast. Overall, after adjusting for gender (the only confounding variable), privately insured or uninsured young adults were less likely than publicly insured young adults to report HIV testing. In stratified analyses, we found similar results in the South (Table 2).

DISCUSSION

Although routine HIV screening is suggested for sexually active people, the prevalence of reported HIV testing among sexually experienced young adults is low. Young adults with private insurance or functional income

TABLE 1—Characteristics and Reported HIV Testing of Respondents Who Reported Ever Having Vaginal Intercourse: Wave III of the National Longitudinal Study of Adolescent Health, 2001–2002

	n ^a	Weighted %, 95% CI	Reported HIV Testing Weighted %, 95% CI	p ^b
Gender				
Women	6 594	49.7 (48.3, 51.1)	22.5 (20.8, 24.3)	<.001
Men	5 740	50.3 (48.9, 51.6)	15.2 (13.9, 16.6)	
Race/ethnicity				
African American	2 695	16.6 (12.7, 21.3)	22.2 (20.1, 24.5)	.002
White	6 707	67.9 (61.8, 73.4)	18.7 (17.2, 20.3)	
Asian or Pacific Islander	782	3.2 (2.1, 5.0)	10.8 (7.2, 15.8)	
Native American or Alaska Native	117	0.8 (0.3, 1.9)	20.8 (11.1, 35.6)	
Latino/a	2 003	11.5 (8.6, 15.3)	16.5 (13.7, 19.8)	
Age, y				
18–19	1 119	11.6 (9.1, 14.6)	20.4 (17.4, 23.8)	.458
20–21	3 477	31.7 (28.1, 35.4)	19.7 (17.8, 21.7)	
22–23	4 872	33.3 (29.8, 37.1)	18.3 (16.6, 20.2)	
24–25	2 765	22.4 (19.8, 25.3)	17.6 (15.1, 20.5)	
>26	101	1.0 (0.7, 1.4)	16.4 (9.5, 16.8)	
Educational attainment				
Less than high school	1 627	15.4 (13.6, 17.5)	18.1 (15.8, 20.7)	.312
High school graduate	4 176	33.7 (31.2, 36.3)	18.0 (16.2, 20.0)	
More than high school	6 531	50.9 (47.1, 54.6)	19.6 (18.0, 21.3)	
Student enrollment status				
Full-time student	3 173	25.5 (23.0, 28.1)	18.2 (16.5, 20.1)	.136
Part-time student	1 127	8.2 (7.3, 9.1)	16.3 (13.5, 19.5)	
Not in school	8 022	66.3 (63.6, 69.0)	19.4 (17.9, 20.9)	
Currently employed				
Yes	8 776	71.4 (69.5, 73.2)	17.6 (16.2, 19.1)	<.001
No	3 555	28.6 (26.8, 30.5)	22.0 (20.1, 24.0)	
Marital status (at interview)				
Yes	2 409	19.1 (17.2, 21.3)	16.6 (14.6, 18.8)	.020
No	9 915	80.9 (78.8, 82.8)	19.4 (18.1, 20.8)	
Marital status (ever)				
Yes	2 666	21.1 (18.9, 23.5)	16.9 (15.0, 19.1)	.037
No	9 660	78.9 (76.5, 81.1)	19.3 (18.0, 20.7)	
Sexual orientation ^c				
100% heterosexual	11 104	90.4 (89.4, 91.3)	18.1 (16.8, 19.4)	<.001
Not 100% heterosexual	1 179	9.6 (8.7, 10.6)	26.8 (23.4, 30.5)	
Current religious affiliation				
Religiously affiliated	9 736	78.7 (76.7, 80.6)	18.5 (17.3, 20.0)	.423
None/atheist/agnostic	2 376	21.3 (19.4, 23.4)	19.7 (17.2, 22.5)	
Age at first vaginal intercourse, y				
10–12	404	3.6 (3.1, 4.3)	25.2 (19.6, 31.8)	<.001
13–14	1 786	14.9 (13.7, 16.1)	23.0 (20.4, 26.0)	
15–16	4 200	35.3 (33.9, 36.7)	21.5 (19.8, 23.3)	
17–18	3 891	30.9 (29.5, 32.4)	16.4 (14.7, 18.3)	
>19	1 979	15.3 (13.7, 17.1)	12.1 (10.2, 14.3)	

Continued

were less likely to be tested for HIV than were those with public insurance or no functional income. Financial factors should not influence testing behavior, because public health departments offer HIV testing at no or low cost to everyone. Furthermore, young adults with financial resources should have access to testing through other sites, including private practices.

People who generally seek care at health departments (i.e., those with few financial resources) likely benefit from being seen within a public health infrastructure that continually seeks to increase sexually transmitted infection (STI)/HIV testing. On the other hand, many private providers do not feel comfortable discussing sexual activity with their patients, and do not regularly test for STIs.¹⁵

Given the overall low HIV testing prevalence among young adults, efforts to increase testing should be widespread. Special focus on privately insured or uninsured young adults who are not financially constrained is needed. Providers should discuss HIV testing with all their patients, thereby avoiding any biases held by the providers or patients regarding risk. ■

About the Authors

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Contributors

T.Q. Nguyen, W.C. Miller, and C.A. Ford developed the research topic. T.Q. Nguyen performed the data analysis and was the main author of the brief. W.C. Miller supervised all aspects of study design, analyses, and writing. C.A. Ford, P.A. Leone, J.S. Kaufman, and C. Suchindran made significant contributions to analysis and writing. All authors helped to originate ideas, interpret findings, and review drafts of the article.

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TABLE 1—Continued

Frequency of vaginal intercourse (past 12 mo)				
None	98	1.0 (0.8, 1.3)	7.1 (3.0, 15.7)	<.001
<1 time/mo	2786	27.2 (25.5, 29.0)	16.2 (14.0, 18.6)	
Up to 4 times/mo	2522	25.5 (24.2, 26.9)	19.7 (17.6, 22.0)	
Up to 12 times/mo	3040	31.1 (29.4, 32.8)	20.6 (18.6, 22.8)	
>12 times/mo	1435	15.2 (14.1, 16.5)	22.5 (19.7, 25.6)	
Number of lifetime sexual partners				
1	2566	20.8 (19.4, 22.3)	9.1 (7.7, 10.6)	<.001
2-3	3093	25.1 (24.0, 26.2)	14.1 (12.2, 16.2)	
4-6	2875	23.8 (22.8, 24.9)	20.9 (18.9, 23.0)	
7-10	1777	14.7 (13.9, 15.6)	26.7 (24.0, 30.0)	
11 or more	1826	15.6 (14.4, 16.8)	28.6 (25.6, 31.8)	
Vaginal intercourse with STD-infected person (past 12 mo)				
Yes	921	8.1 (7.3, 9.0)	31.2 (27.1, 35.6)	<.001
No	9849	91.9 (91.0, 92.8)	18.3 (17.0, 19.7)	
Condom use at most recent vaginal intercourse				
Yes	4703	41.6 (39.8, 43.5)	17.6 (16.2, 19.0)	.001
No	6399	58.4 (56.5, 60.2)	20.7 (19.0, 22.4)	
Use of birth control (past 12 mo)				
Yes	6962	58.2 (56.2, 60.1)	21.4 (19.8, 23.0)	<.001
No	5313	41.8 (39.9, 43.8)	15.3 (13.7, 17.1)	
Use of medications for infections (past 12 mo)				
Yes	2376	19.7 (18.5, 21.0)	22.7 (20.3, 25.3)	<.001
No	9946	80.3 (79.0, 81.6)	17.9 (16.6, 19.3)	
Routine care				
Within past 3 mo	1346	16.5 (15.2, 17.9)	27.4 (24.3, 30.8)	<.001
4-6 mo	1192	14.5 (13.5, 15.7)	23.9 (20.7, 27.5)	
7-9 mo	703	8.5 (7.7, 9.5)	23.0 (19.2, 27.4)	
10-12 mo	1068	13.5 (12.4, 14.8)	20.0 (16.9, 23.6)	
1-2 y ago	1494	19.0 (17.8, 20.4)	14.8 (12.4, 17.6)	
2 y ago or longer	2122	27.9 (26.1, 29.7)	12.0 (10.2, 14.0)	
Childhood physical or sexual abuse				
At least once	3599	29.8 (28.4, 31.2)	20.2 (18.2, 22.4)	.095
Never	8099	70.2 (68.8, 71.6)	18.3 (16.9, 19.7)	
Partner physical or sexual abuse				
At least once	1368	12.9 (11.9, 13.9)	18.1 (15.5, 21.0)	.309
Never	9169	87.2 (86.1, 88.2)	19.5 (19.2, 20.9)	
Geographic region				
South	4618	39.7 (36.4, 43.0)	18.7 (17.1, 20.4)	.388
West	3050	16.7 (14.2, 19.4)	20.7 (17.6, 24.1)	
Midwest	2952	30.5 (26.3, 35.0)	17.7 (15.4, 20.3)	
Northeast	1531	13.2 (11.5, 15.1)	19.9 (16.9, 23.2)	
Current functional income				
No	1805	15.0 (13.8, 16.3)	23.3 (20.5, 26.4)	<.001
Yes	10418	85.0 (83.7, 86.2)	18.1 (16.8, 19.4)	
Current insurance status				
Public	837	6.7 (5.6, 7.9)	30.8 (26.4, 35.5)	<.001
Private	8428	67.8 (65.4, 70.0)	18.3 (16.9, 20.0)	
None	2927	25.6 (23.9, 27.3)	17.4 (15.7, 19.3)	

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Human Participant Protection

This study was approved by the institutional review board of the University of North Carolina, Chapel Hill.

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TABLE 1—Continued

HIV testing (past 12 mo)			
Yes	2 387	18.8 (17.6, 20.1)	NA
No	9 875	81.2 (79.9, 82.4)	NA
Total	12 334	86.9	18.8 (17.6, 20.1)

Note. CI = confidence interval; NA = not applicable; STD = sexually transmitted disease.

^aNumbers do not add up to 12 334 because of missing values.

^bP value for Pearson χ^2 test for independence.

^cParticipants were asked: "Please choose the description that best fits how you think about yourself." Their options were: (1) 100% heterosexual (straight); (2) mostly heterosexual (straight), but somewhat attracted to people of your own sex; (3) bisexual—that is, attracted to men and women equally; (4) mostly homosexual (gay), but somewhat attracted to people of the opposite sex; (5) 100% homosexual (gay); and (6) not sexually attracted to either males or females. Options 2–6 were categorized as "Not 100% heterosexual."

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TABLE 2—Prevalence, Odds Ratio (OR), and 95% Confidence Interval (CI) Estimates for the Association Between Current Insurance Status and Functional Income and HIV Testing Among Add Health Respondents Who Reported Ever Having Vaginal Intercourse, by Geographic Region: Wave III of the National Longitudinal Study of Adolescent Health, 2001–2002

Current Insurance Status	Weighted %, 95% CI	Unadjusted OR, 95% CI	Adjusted OR, ^a 95% CI	Current Functional Income	Weighted %, 95% CI	Unadjusted OR, 95% CI
Overall						
Private	18.4 (16.9, 20.0)	0.51 (0.40, 0.63)	0.58 (0.46, 0.72)	No	23.3 (20.5, 26.4)	1.38 (1.16, 1.64)
None	17.5 (15.7, 19.4)	0.48 (0.37, 0.61)	0.55 (0.43, 0.71)	Yes	18.1 (16.8, 19.4)	Reference
Public	30.8 (26.5, 35.5)	Reference	Reference	...	...	...
South						
Private	18.9 (16.9, 21.0)	0.46 (0.33, 0.64)	0.55 (0.39, 0.77)	No	22.7 (18.7, 27.4)	1.34 (1.01, 1.77)
None	15.8 (13.6, 18.4)	0.38 (0.27, 0.53)	0.44 (0.31, 0.63)	Yes	18.0 (16.3, 19.8)	Reference
Public	33.4 (26.9, 40.5)	Reference	Reference	...	...	...
West						
Private	21.0 (17.8, 24.7)	0.63 (0.33, 1.21)	0.66 (0.36, 1.23)	No	25.8 (18.1, 35.5)	1.41 (0.88, 2.27)
None	17.4 (13.3, 22.6)	0.50 (0.26, 0.96)	0.55 (0.30, 1.02)	Yes	19.8 (16.8, 23.3)	Reference
Public	29.7 (18.5, 44.0)	Reference	Reference	...	...	...
Northeast						
Private	19.4 (15.8, 23.7)	0.66 (0.33, 1.33)	0.71 (0.35, 1.44)	No	31.8 (21.8, 44.0)	2.07 (1.17, 3.64)
None	19.3 (14.0, 26.0)	0.65 (0.26, 1.65)	0.73 (0.29, 1.85)	Yes	18.5 (15.5, 21.8)	Reference
Public	26.8 (14.8, 43.6)	Reference	Reference	...	...	...
Midwest						
Private	15.8 (12.9, 19.2)	0.43 (0.29, 0.64)	0.50 (0.34, 0.74)	No	21.2 (16.6, 26.6)	1.32 (0.98, 1.79)
None	19.5 (15.5, 24.2)	0.56 (0.37, 0.85)	0.67 (0.44, 1.01)	Yes	16.9 (14.5, 19.6)	Reference
Public	30.2 (23.8, 37.5)	Reference	Reference

^aAdjusted for gender.

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