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Consistency in Self-Reports of HIV Testing: Longitudinal Findings from the National AIDS Behavioral Surveys

SYNOPSIS

THIS PAPER ASSESSES consistency in self-reports of human immunodeficiency virus testing using two waves of longitudinal data from a large, national probability survey, the National AIDS Behavioral Survey.

Of those reporting at Wave 1 that they had been tested for reasons other than blood donation, 18 percent reported at Wave 2 that they had never been tested. Of those reporting at Wave 1 that they had been tested when they donated blood, 29 percent reported at Wave 2 that they had never been tested.

Inconsistent responses may be due to poor recall and to high self-presentation bias, that is, a desire to provide socially acceptable answers. Poor recall may be exacerbated by passive conditions such as blood donation. The authors conclude with recommendations for reducing measurement error in surveys of testing behavior.

Survey research usually has to rely on self-reported data, so it is important to assess the reliability of such data. In prior work, the importance of measurement error in self-reports of sensitive subjects such as behaviors related to the human immunodeficiency virus (HIV) have been discussed (1). In this paper, we report on consistency in self-reports of HIV testing, using a longitudinal, population based sample. This information has important implications for providers of HIV testing and can be used to estimate measurement error and improve questionnaire design.

Two studies have examined the validity of self-reports of HIV test results in high prevalence samples (2,3). To our knowledge, there are no published studies on the reliability of self-reports of HIV testing in the general population. We report longitudinal data from the 1991 and 1992 National AIDS (acquired immunodeficiency syndrome) Behavioral Survey (NABS), a large, national probability survey, on consistency in self-reports of HIV testing. We hypothesized that people might be inconsistent in their responses as a result of poor recall or high self-presentation bias, that is, a desire to provide socially acceptable answers (1).

Methods

Sample frames and procedures. Methodological details on the baseline survey have been described in detail elsewhere (4,5). In brief, the baseline survey (Wave 1, June 1990 through February 1991) was preceded by an intensive pretest phase, conducted in Spanish or English, and the data were collected by telephone. Wave 2 interviews were conducted approximately one year after Wave 1, using the same general interviewing procedures (85 percent of the Wave 2 interviews were completed between January and June 1992).

Our study uses two probability samples: National (ages 18-75) and Cities (ages 18-49). The cities sample provides an indepth picture of 23 cities which, at baseline, had large numbers of AIDS cases. For the national sample, 76 percent of the unweighted 1,820 Wave 1 respondents and 66 percent of the unweighted 3,723 cities respondents were reinterviewed.

In both Wave 1 and Wave 2, interviewers asked the question: "As you may know, there is a blood test that tells you whether or not you have the AIDS virus. Have you ever had this test done?" A separate question in Wave 2 asked about reasons for testing, including blood donation. We report results separately for blood donors since many people do not know that they are tested for HIV when they donate blood (6) and that response category was offered at Wave 1 but not Wave 2.

We defined as consistent those who said at both Wave 1 and Wave 2 that they had been tested for HIV. We defined as inconsistent those who reported at Wave 1 having been tested but stated "no" or "don't know" when asked at Wave 2 if they had ever been tested. We were not able to assess which answer was correct or measure whether testing was overreported. Given the sensitive nature of HIV testing, however, we suspect overreporting is less frequent than underreporting.

We examined sociodemographics, risk factors, and HIV-AIDS knowledge and beliefs at Wave 1 and reexamined at Wave 2 those variables that might have changed. We defined persons to be at risk if they reported any of the following risk factors: (a) multiple sexual partners in the past year, (b) donor blood transfusions between 1978 and 1985, (c) treatment for hemophilia, (d) injecting themselves with drugs in the past five years, or (e) a primary sexual partner with one or more risk factors (HIV positive, intravenous drug user in the past five years, nonmonogamous, transfusion recipient, or hemophiliac patient).

The stereotypes scale was composed of four questions that measured stereotypes people hold of persons who become HIV infected. The question on ease in talking about sex was found in previous work to distinguish between responders and nonresponders to sexual questions (7).

Statistical analyses. We assessed associations using Chi-

Table 1. Frequency of inconsistent reports of HIV testing in two survey samples on responses in National AIDS Behavioral Surveys, 1991-92

Frequency	National			Cities		
	N	Number	Percent	N	Number	Percent
Overall testing:						
Percent ever tested at Wave 1 (includes blood donation).....	1,817	348	19	3,715	1,030	28
Inconsistent responses (persons tested for reasons other than blood donation):						
Percent reporting at Wave 1 that they had been tested but at Wave 2 that they had never been tested	282	51	18	894	137	15
Percent reporting at Wave 1 that they had been tested but at Wave 2 that they didn't know if they had been tested	282	3	1	894	11	1
Inconsistent responses (persons tested for blood donation):						
Percent reporting at Wave 1 that they had been tested for blood donation but at Wave 2 that they had never been tested.....	66	19	29	136	51	38
Percent reporting at Wave 1 that they had been tested for blood donation but at Wave 2 that they didn't know if they had been tested.....	66	2	3	136	4	3

NOTE: The N's are weighted.

Table 2. Sociodemographic characteristics of the two samples surveyed (weighted) from the National AIDS Behavior Surveys, 1991-92

Characteristics	National		Cities	
	Percent inconsistent ¹	Percent excluding donors	Percent inconsistent	Percent excluding donors
	(N=348)	(N=325)	(N=1,030)	(N=964)
Sex:				
Male.....	20	15	20	15
Female.....	24	17	19	14
Age (years):				
Younger than 30	² 17	² 13	20	14
30-39	22	14	19	14
40-49	22	15	21	16
50 and older.....	31	27	NA	NA
Race-ethnicity:				
White.....	22	15	19	² 12
African American	20	17	19	16
English-speaking				
Latino.....	20	20	25	19
Spanish-speaking				
Latino.....	28	28	21	20
Education:				
Less than high school				
	25	20	² 18	² 17
High school graduate				
	25	17	28	19
Some college or more.....				
	19	15	17	12
Income (per year):				
Less than \$10,000.....	12	9	² 27	² 22
\$10,000-20,000.....	27	20	14	11
\$20,000-40,000.....	24	17	21	14
More than \$40,000.....	19	15	19	14
Marital status:				
Married.....	23	16	² 24	² 18
Not married.....	20	15	17	12

¹Persons are inconsistent if they reported having ever been tested at Wave 1 but stated "no" or "don't know" when asked at Wave 2 if they had ever been tested.

²P < .10, chi-square comparing characteristics of consistent and inconsistent persons.

square tests and weighted the data to reflect differences in probability of selection and in the characteristics of the sample as compared with the Current Population Survey (at baseline) and to adjust for attrition (due to nonvolunteerism at baseline and loss to followup) from Wave 1 to Wave 2. (Further details are available from Dr. Catania). Weighting is standard practice for national surveys, the National Health Interview Survey (7), for example, to obtain unbiased estimates that are representative of the national population.

Results

Of those who reported in Wave 1 that they were tested for reasons other than blood donation, 18 percent in the national sample and 15 percent in the cities sample reported in Wave 2 that they had never been tested. Of those reporting in Wave 1 that they had been tested when donating blood, 29 percent in the national sample and 38 percent in the cities sample reported in Wave 2 that they had never been tested. Few respondents answered "don't know" when asked at Wave 2 if they had been tested (table 1).

We did not find any evidence that persons with inconsistent responses to HIV testing questions refused to answer other sensitive questions. For example, the income question had the highest nonresponse rate among the demographic variables (two percent of the cities sample, based on Wave 2 data). However, of the income nonresponders, only one gave inconsistent responses to HIV testing questions, while 11 gave consistent responses.

Significant results common across samples (tables 2 and 3) were that inconsistent reports were more likely to be given by those who perceived themselves to be at high risk for contracting HIV from sex (Wave 1), did not report any risk factors (Wave 2), and rated high on the stereotypes scale (for example, they believed that heterosexuals don't need to worry about getting AIDS). Other findings that were significant in one or more samples were that people who gave inconsistent reports were more likely to be older than 50, to be nonwhite, to have less than a college education, to have an income of less than \$10,000 per year, to be married, to have no risk factors (Wave 1), to be HIV negative or did not know the results, and to find it difficult to discuss sex.

Discussion

Our results suggest that inconsistent responses may be due to poor recall, especially if testing is not a salient issue for the person. For instance, blood donors were more likely to give inconsistent responses; for these people, testing is probably not a salient issue, and some might have forgotten being tested because they never received their results. Recall may also be a factor simply because interviews occurred a year apart. A Public Health Service study found that close to 20 percent of hospitalizations went unreported when interviews occurred a year after discharge, compared with fewer than 5 percent unreported when interviews occurred within several weeks of discharge (8). Donegan and coworkers (9) found that 12 percent of people receiving blood transfusions did not report being transfused.

Inconsistent responses may also be due to high self-presentation bias. For instance, inconsistent people were more likely to report difficulty with discussing sex in an AIDS survey (national sample only). Another finding that may reflect presentation bias is that people with inconsistent testing reports had a pattern of inconsistent responses to

Table 3. Percentage breakdown on persons in two samples from the National AIDS Behavioral Surveys according to their answers on AIDS risk

Questions	National		Cities	
	Percent inconsistent (N=348)	Percent inconsistent excluding donors (N=325)	Percent inconsistent (N=1,030)	Percent inconsistent excluding donors (N=964)
In the next five years, do you think you might get the AIDS virus from having sex? (Wave 1):				
Yes.....	148	148	134	129
Maybe.....	16	13	18	13
No.....	21	15	20	14
In the next five years, do you think you might get the AIDS virus from having sex? (Wave 2):				
Yes.....	19	19	18	13
Maybe.....	24	17	19	12
No.....	21	16	21	16
Type of risk factor (Wave 1):				
Multiple partners only.....	15	12	13	8
Other risk factors ²	12	10	15	9
None.....	23	17	22	16
Type of risk factor (Wave 2):				
Multiple partners only.....	14	14	17	9
Other risk factors ²	8	5	14	11
None.....	24	18	21	16
HIV test results:				
Negative.....	22	17	19	14
Did not get results.....	18	4	32	15
AIDS transmission knowledge (two questions):				
Correct (both answers).....	22	16	20	14
Incorrect (either answer).....	20	13	16	13
Stereotypes about who gets AIDS ³ :				
High (score = 8-16).....	130	123	124	119
Medium (score = 5-7).....	23	17	22	14
Low (score = 4).....	17	12	15	12
Do you find that talking about sex in an AIDS survey is very easy to do, kind of easy, kind of hard, or very hard to do?:				
Very hard.....	157	24	25	19
Kind of hard.....	22	15	17	11
Kind of easy.....	26	21	21	15
Very easy.....	16	12	19	14

¹P < .10, chi-square comparing characteristics of consistent and inconsistent persons.

²Such as injection drug use, for example.

³Scale composed of four questions: (a) You can always tell if a person has the AIDS virus, (b) Only gay (homosexual) men or people who inject drugs have the AIDS virus, (c) Elderly people don't need to worry about getting the AIDS virus, (d) Heterosexual people don't need to worry about getting the AIDS virus.

questions on risk. For example, people who were inconsistent perceived themselves to be at high risk of contracting HIV (Wave 1) despite a lack of reported risk behaviors and believed that people outside the major risk groups do not need to worry about contracting HIV.

Despite extensive pretesting of the question about HIV testing, it is still possible that inconsistent responses were

due to poor question comprehension. Groups that might have comprehensive difficulties—older people, Spanish-speaking Latinos, and those with limited education—were more likely to provide inconsistent responses. In addition, differences in the response categories between Wave 1 and Wave 2 may have facilitated inconsistent responses, but only in blood donors.

Our results are similar to those for the 1988 and 1990 National Surveys of Family Growth (NSFG). Analysis of the NSFG data found that approximately 14 percent of women were inconsistent in self-reports of HIV testing when interviews were two years apart, according to a personal communication from J. Wilson, National Center for Health Statistics, April 5, 1994. Other studies of HIV testing that have focused on validity rather than reliability have found that people often misreport test results (2,3). It is difficult to compare our results with other reliability studies, since they report on risk behaviors such as alcohol consumption that may be sensitive but that also may change between interviews (10), or they report on screening behaviors that may be less sensitive topics (for example, Pap smears) (11).

Our study suggests that self-reports of prior testing are generally reliable but that reports of testing under passive conditions such as blood donations should be viewed with particular caution. Those who survey HIV testing can encourage reliable reports by probing to enhance recall and by reassuring patients that having been HIV tested is acceptable.

Several steps can be taken to reduce measurement error in surveys of testing behavior. First, it is important to distinguish voluntary testing from testing at blood donation and other routine testing, as was done in the NABS, in order to facilitate the identification of sources of inconsistent responses. Further research should be conducted to assess how changes in question wording may increase the accuracy of responses. Second, to reduce presentation bias, lead-ins to testing questions can be used, such as "Many people have been tested..." Third, the use of partially self-administered surveys, perhaps computer-facilitated, could also be explored. Finally, researchers could interview persons who

are inconsistent to determine why they changed their responses.

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