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Uptake of HIV Testing in Substance Use Disorder Treatment Programs That Offer On-Site Testing

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Abstract

Increasing rates of HIV testing within substance use disorder (SUD) treatment clients is an important public health strategy for reducing HIV transmission rates. The present study examined uptake of HIV testing among 1224 clients in five SUD treatment units that offered on-site testing in Florida, New York, and California. Nearly one third (30%) of the participants, who had not previously tested positive, reported not having been tested for HIV within the past twelve months. Women, African Americans, and injection drug users had a higher likelihood of having been tested within the past twelve months. The SUD treatment program was the most frequently identified location of participants' last HIV test. Despite the availability of free, on-site testing, a substantial proportion of clients were not tested, suggesting that strategies to increase uptake of testing should include addressing barriers not limited to location and cost.

Key words/phrases

HIV testing; HIV screening; substance use; community treatment programs

INTRODUCTION

Increasing HIV testing is a priority of the National HIV/AIDS Strategy (1). In addition to increasing the likelihood that persons who test HIV positive will receive the care and services that they need, HIV testing is an important public health strategy for reducing HIV transmission. People who have been told that they tested positive for HIV tend to adapt their sexual practices to reduce transmission risk (2). Risk of transmission is further reduced when those who learn that they are HIV positive receive medical care that results in a reduction in the concentration of HIV virus in body fluids typically associated with transmission (3 – 5). A recent model estimated that 49% of new infections are transmitted by people who are unaware of their sero status (6). The Centers for Disease Control and Prevention (CDC) estimates that 18% of people in the United States living with HIV/AIDS do not know that they have HIV and, in 2009, 33% were diagnosed with AIDS within the first year after testing positive for HIV (7, 8), suggesting that a substantial proportion of people progress to states of high viral load and consequent increased risk of transmission before discovering their status. To address this, the National HIV/AIDS Strategy aims to decrease the percentage of people in the United States living with HIV who do not know their status to 10% or less by 2015 (1).

The CDC recommends HIV testing for all adults and that people at high risk for HIV should be tested at least once per year (5). People with substance use disorders (SUDs) or who misuse substances, including injection drug users, people who trade sex for drugs, and people who have sex while intoxicated, are at high risk for becoming infected with HIV (9 – 11). Increasing HIV testing rates in SUD treatment facilities could identify HIV positive individuals who may be unaware of their sero status and improve linkage to appropriate care. A recent multi-site randomized clinical trial found that offering HIV testing on site at SUD treatment units substantially increased the proportion of people who received HIV testing and learned their results when compared to clients who were offered a referral to off-site testing (12).

Previous research, however, has shown that less than half of substance use disorder treatment programs offer HIV testing on site to their clients (13 – 17) and little is known about the uptake of annual HIV testing among clients in programs that offer on-site testing. It has been previously suggested that devoting resources to increase HIV testing in substance use disorder treatment programs may not be an optimal prevention strategy since hospitals, physician's offices, health departments, HIV testing centers, and other venues provide multiple points of potential testing access (18). Resources may be better invested elsewhere if clients at SUD treatment facilities where HIV testing is routinely offered are not being tested or if the opportunities offered by other venues meet the need. Within this context, the present study sought to examine the uptake of HIV testing by substance use disorder treatment clients who were receiving services in programs offering on-site HIV testing. We examined the proportion of clients who were tested, where they received testing, and associations with uptake of testing.

METHOD

Participants and survey administration

This observational study was conducted within the National Drug Abuse Treatment Clinical Trials Network (NIDA CTN) in five substance use disorder (SUD) treatment facilities located in California, New York, and Florida. Surveys were collected in a wide variety of treatment modalities including residential, outpatient psychosocial, intensive outpatient, outpatient medication assisted treatment/narcotic replacement, and inpatient detoxification. All sites that participated in the study had been offering on-site HIV testing to clients at no additional financial cost to the client for at least two years before data were collected. All sites obtained Institutional Review Board (IRB) approval before administering surveys.

Recruiters attempted to approach all adult clients accessing services within participating treatment units during the data collection period. To be eligible, clients were required to be at least 18 years of age and sufficiently communicate in English to provide consent and complete the survey. To protect the anonymity of the participants, the IRB granted a waiver of signed consent.

Participants completed the pen and paper-based survey in the presence of a research assistant, who was available to answer any questions the participant might have regarding the survey or study participation.

Survey

Participants completed questions requesting demographic information. Then participants were asked, "When was your most recent HIV test?" and were provided with 6 response options ranging from "I have never been tested for HIV" and "I have been tested within the past 6 months" to "My most recent test was more than 5 years ago." Participants were also asked about the location where their last HIV test was completed and if they had ever been told that they tested positive for HIV. Sexual risk behaviors were measured using a series of questions requesting the number of partners the individual had sexual intercourse with over the past twelve months. Participants were also asked about the number of partners with whom they had sexual intercourse "without using a condom from start to finish." Injection drug use was measured using the question, "In the past 12 months, have you injected any drugs that were not prescribed to you by a medical professional?" Binge drinking was measured with questions about the occasions on which the individual drank 4 or more drinks, if the participant was a woman, and 5 or more drinks, if the participant was a man (19). Past year drug use was measured using a checklist of drugs. A previous study found that, among the variables assessed, the best predictor of HIV testing in African American men was having received a recommendation from a medical professional that they should be tested for HIV (20). Therefore, the following question was included in the survey, "In the past 12 months, has a doctor, nurse, or other medical professional told you that you should be tested for HIV?" A copy of the survey questions used in this study is available upon request to the corresponding author.

RESULTS

A total of 1224 SUD treatment clients participated in the study between April and August of 2010, with 67% of the sample consisting of men and 27% identifying themselves as African American or Black, 27% as Hispanic or Latino, 40% as non-Hispanic White or Caucasian, 2.5% as mixed race, 1% as Native American or American Indian, less than 1% as Asian, and 1.5% as another category not represented by the preceding categories. The mean age of participants was 40.6 (SD = 12.4), with the youngest participant being 18 and the oldest being 83 years of age.

It is estimated that more than 90% of adult active clients were approached and agreed to participate. One participant did not speak a sufficient amount of English to complete the survey. It is believed that all other approached clients spoke a sufficient amount of English to participate, but this and other information about clients who did not participate was not systematically collected during the study.

Of the participants in the sample who had not tested HIV positive more than twelve months before data were collected ($n = 1153$), 30% reported having not been HIV tested within the past twelve months and 8% reported having never been tested for HIV. Of the participants who reported having been tested within the past twelve months, 33% were tested at the SUD treatment facility where they completed the present survey (see Table I). Of the 802 participants who reported having been tested for HIV within the twelve months before data collection, 40 participants reported having tested positive for HIV (5%).

A multinomial regression was conducted, using Stata, version 12.1, with the dependent variable being HIV testing history operationalized as: 1) tested within the twelve months preceding data collection, 2) tested more than twelve months preceding data collection, and 3) never tested. Twelve months was chosen as the categorical demarcation because the CDC recommends that high risk groups get tested at least once per year (5). Individuals who reported that they had tested positive for HIV more than twelve months preceding data collection (71 individuals) were excluded from the analysis, as it is unnecessary for individuals to repeat testing once an HIV positive status has been confirmed. A total of 17 individuals elected to not answer the question regarding when they were last tested for HIV and 24 had multiple missing variables. Their data were excluded from the regression analysis. Variables examined as potentially accounting for variation in HIV testing behaviors included age, gender, racial/ethnic group, if a medical professional recommended that the individual take a HIV test within the past twelve months, and self-reported non-injected and injected drug use within the past twelve months. Participants were categorized based on self-identification as 1) African American or Black, 2) Hispanic or Latino, or 3) Non-Hispanic White or Caucasian in order to investigate potential differences related to race/ethnicity. A fourth category containing participants who did not identify themselves as belonging to one of the other three racial/ethnic groups was also included in the regression. Site was included in the model to control results by site.

Results of the multinomial regression analyses are provided in Table II. Men were less likely to have been tested within the last twelve months and more likely to have never been tested

than women. Participants identifying themselves as African American or Black were more likely to have been tested within the last twelve months. Participants who reported that a medical professional recommended HIV testing within the past twelve months were more likely to have been tested within the last twelve months. Age was not related to testing within the past twelve months, but for each year of age, the person was more likely to have been tested more than twelve months ago than to have never been tested.

The majority of the total sample (79%) reported using drugs, other than alcohol, within the past twelve months that were not prescribed to them by a medical professional. Of the total sample, stimulants were used by 49%, opiates were used by 50%, and 24% reported injecting drugs within the twelve months before data were collected. Results of the multinomial regression indicated that self-reported non-injected-only drug use within the past twelve months was not related to the likelihood of being tested for HIV. However, participants reporting injected drug use within the past twelve months were more likely than those who did not report injected drug use to have both been tested within the past twelve months and tested more than one year ago compared to having never been tested. Only 3% of injection drug users in the total sample reported having never been tested for HIV. At least one episode of binge drinking within the twelve months before data collection was reported by 44% of the sample. Binge drinking was not found to be related to HIV testing history and was not included in the multinomial regression.

The majority of the sample (77%) reported having engaged in sexual intercourse with at least one partner and 40% reported having intercourse with more than one partner within the twelve months before data were collected. Of those reporting having sex with only one partner within the past twelve months, 75% had at least one occasion of sexual intercourse with that partner during which a condom was not used. Of those reporting having sexual intercourse with at least two partners within the past twelve months, 29% reported having had a least one occasion of having sexual intercourse during which a condom was not used with at least one of their multiple partners. Sexual risk behavior was not found to be related to HIV testing history and was not included in the multinomial regression.

The total number of men reporting that they had engaged in sexual intercourse with at least one man (MSM) within the past twelve months was 37 (3% of the total sample). As there were too few individuals within this category, HIV testing history related to this grouping variable could not be meaningfully investigated within the multinomial regression. Of the MSM in the sample that had not tested positive for HIV more than twelve months before data were collected, 81% reported having been tested for HIV within the past twelve months and 0% reported having never been tested for HIV.

DISCUSSION

Findings revealed that almost one-third of clients accessing services at community SUD treatment facilities that offer free, on-site HIV testing reported having not been tested within the twelve months before the survey was conducted. Of those who were tested within the past twelve months for HIV, 5% tested positive, suggesting that testing of SUD treatment clients has the potential to identify new cases of HIV and, thereby, potentially reduce further

transmission. It is unknown how many of the 30% who had not been tested within the previous twelve months were infected with HIV. Given that sexual risk behaviors, such as unprotected sexual intercourse and having multiple sexual partners were not related to the likelihood of having been tested within the past twelve months or even to having ever been tested, there is the possibility that cases of HIV infection remained undetected in the untested group.

While the majority of HIV tests will have negative results, the benefits of finding even a small number of cases far outweigh the costs. A cost-effectiveness ratio of <\$100,000 per Quality Adjusted Life Years has been found for offering HIV testing on site at SUD treatment programs (21). In addition, reduction in transmission rates can lead to large savings in public health costs. It has been estimated that \$360,000 in medical costs has been saved for every new HIV infection that has been prevented (22). Within the present sample, the SUD treatment facility was the venue where clients tested in the last twelve months were most likely to have been tested. This suggests that these SUD treatment units provide testing opportunities that reach a notable number of members of this high risk population. Past twelve month testing uptake (70%) at sites that provided on-site testing was more than twice that found in the screening data collected in SUD treatment programs that participated in a multisite clinical trial of HIV testing strategies. Only sites that had not provided on-site HIV testing within the past six months were eligible to participate in the clinical trial. Screening data from the clinical trial showed that 25% of the 2,473 screened received HIV test results within the past twelve months (12). Results of the present study support that efforts to expand HIV testing in high risk populations should include increasing the number of SUD treatment facilities that offer on-site HIV testing to their clients. However, offering free, on-site testing is apparently not enough to entice all SUD treatment clients to follow the CDC recommendations to be tested at least once per year (5).

It is possible that a proportion of the 30% that were not tested within the past twelve months did not perceive themselves to be at risk for HIV. Lack of perceived risk has been identified in prior studies in other venues as a frequent reason for individuals to decline opportunities for testing (23 – 25). In the present sample, groups of individuals in categories that have historically had high seroprevalence, African Americans and injection drug users, were more likely to be tested than other groups. This may be related to prevention strategies targeting populations with high prevalence within the communities surrounding the SUD treatment facilities (26) and to increased perceived risk related to these groups on the part of the individuals and prevention interventionists. Likewise, in recent years, efforts have been made to encourage more women to be tested. That pregnant women are tested during prenatal care visits might account for some, but not all, of the gender differences found in the present study. Only 4% of the participants in this sample who reported having been tested in the past twelve months indicated that they have been tested at a prenatal care, obstetrics, or family planning office. Perhaps, efforts on the part of the Centers for Disease Control and other organizations to increase awareness that women are at risk has influenced uptake of testing within this subpopulation. While some messages about risk may have been received, it is possible that insufficient attention has been given to targeting perception of risk associated with engaging in risky behaviors such as unprotected sexual intercourse, multiple sexual partners, and sexual activity while intoxicated. Counselors and other

healthcare providers might focus less on encouraging uptake of testing within groups engaging in these risky behaviors than for those in other risk categories. Indeed, some may be unaware of clients' sexual risk profiles due to potential discomfort with assessing sexual risk behaviors (27, 28). Encouragement by counselors and other healthcare providers may increase HIV testing uptake. A relationship was found in the present sample between having completed HIV testing in the last twelve months and the recollection of having received a recommendation from a medical care provider that one should be HIV tested. This is consistent with other studies that investigated associations with HIV testing uptake in other venues (20, 29). Increasing opportunities, both on-site and as a consequence of improved access to primary care, for SUD treatment clients to receive advice from medical care providers regarding HIV testing might increase uptake of HIV testing in this high risk population.

Limitations

Limitations of this study should be considered when interpreting the findings. The study investigated rates of HIV testing in SUD treatment facilities located in urban centers where the magnitude of the epidemic has resulted in the application of vigorous prevention efforts. Future studies would benefit from expanding the observations to locations with emerging transmission prevalence, including rural settings, where HIV testing may be less normalized.

Nearly all approached clients agreed to participate in this short, anonymous survey. However, detailed information was not systematically collected about the number of clients who declined participation, failed to meet inclusion criteria, or did not access the participating treatment units during the data collection period. Information about the characteristics of clients who did not participate could help to provide a greater understanding of the generalizability of the results.

An additional limitation is that the present study relied on clients' retrospective self-reports of their experiences and behaviors. There are some disadvantages to this method. For example, while all of the sites that participated in the present study have medically trained professionals on staff who may recommend testing, it is unclear what proportion of clients actually received a recommendation from an on-site medical staff member. Some clients may have failed to recollect that a medical professional advised HIV testing and some methods of making a recommendation may be more effective and better recalled than others. An expanded study involving chart reviews and observations of providers may help increase understanding of the types of practices that are associated with testing uptake.

The present study provided an indication of the proportion of SUD treatment clients who are tested for HIV within the context in which it is routinely provided in community-based SUD treatment clinics that offer on-site testing. Future studies may benefit from expanding observations to other settings where people with SUDs have opportunities for testing, such as hospitals and primary care clinics.

CONCLUSION

The present study investigated uptake of HIV testing in community substance use disorder (SUD) treatment facilities in the United States that offered free, on-site HIV testing. Nearly one third of clients were not tested within the past year, suggesting that addressing the barriers of cost to the individual and convenience of location are insufficient to motivate all clients to be tested. It is unknown how many untested SUD treatment clients were HIV positive, but a high rate tested positive in the past twelve months and engagement in sexual risk behaviors was not related to testing uptake. This suggests that increased efforts could identify new cases that have been previously undetected. Efforts to motivate reluctant testers in this high risk population should focus on identifying additional barriers to testing and increasing opportunities for SUD treatment clients to receive encouragement from medical professionals to be tested for HIV.

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Table I

The most frequently reported testing locations for participants who were tested within the 12 months before data were collected (n = 802).

Location	Number	Percentage
The SUD treatment program where the survey was collected	266	33%
Community Health Center/Health Dept.	142	18%
Hospital	93	12%
Correctional Facility	82	10%
A different SUD treatment program	49	6%
HIV Street Outreach/Mobile Unit	34	4%
Private Physician's Office	35	4%
Prenatal/Obstetrics Clinic	17	2%
Family Planning Clinic	16	2%

Table II

Results of the multinomial regression

<i>Tested less than 12 months ago</i>	OR	p	95% Conf. Interval	
Age	1.0108	0.309	0.9901	1.0320
Men	0.2781	<0.001*	0.1461	0.5296
African American	2.4112	0.017*	1.1667	4.9829
Hispanic/Latino	0.8151	0.529	0.4316	1.5394
Other race/ethnicity	1.3047	0.692	0.3493	4.8727
Medical professional recommended testing	3.2771	0.003*	1.5059	7.1311
Non-injection drug use	1.3084	0.359	0.7366	2.3240
Injection drug use	2.7064	0.032*	1.0909	6.7142
<i>Tested more than 12 months ago</i>				
Age	1.0226	0.047*	1.0003	1.0453
Men	0.3486	0.002*	0.1778	0.6833
African American	1.8691	0.108	0.8712	4.0101
Hispanic/Latino	0.6877	0.282	0.3475	1.3607
Other race/ethnicity	1.8491	0.369	0.4830	7.0795
Medical professional recommended testing	1.4704	0.362	0.6418	3.3685
Non-injection drug use	1.3586	0.330	0.7334	2.5167
Injection drug use	2.9788	0.024*	1.1518	7.7036

Never tested is the comparison group. Analysis controlled for site.