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Blood Donor Test-Seeking Motivation and Prior HIV Testing Experiences in São Paulo, Brazil

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Abstract

Background—HIV test-seeking behavior among blood donors has been observed worldwide and may pose a threat to the safety of the blood supply. We evaluated current test-seeking motivations and prior alternative HIV testing experiences among blood donors in São Paulo, Brazil.

Methods—All candidate or potential blood donors were consecutively approached and recruited to participate in the study upon presentation at Fundação Pró-Sangue Hemocentro, the largest blood bank in Brazil. Participants were recruited between August 2012 and May 2013 after they were screened for donor eligibility. Questionnaires were administered through audio computer-assisted self-interview (ACASI).

Results—Among 11,867 donors, 38% previously tested for HIV apart from blood donation, of whom 47.7% tested at public facilities and 2.7% acknowledged getting tested for HIV as the primary reason for donating. Dissatisfaction with prior alternative testing experience was reported by 2.5% of donors. Current test-seeking motivation was associated with dissatisfaction with prior alternative testing experience and testing at a public alternative facility. The most common reasons for dissatisfaction were too long of a wait to get tested and for results, counseling was too long, lack of privacy, and low confidence in the equipment and accuracy of the test.

Conclusion—Lack of awareness about the availability of free and confidential public HIV testing services as well as dissatisfaction with past HIV testing and counseling experiences motivate some individuals to test at blood banks. Test-seeking behavior among blood donors may be best addressed by improving alternative testing programs, particularly with respect to time delays, privacy and perceptions about test accuracy. Educational campaigns on safe blood

donation and HIV testing for diagnosis, risk counseling and referral to care are also needed for the general public and for health care providers.

Keywords

blood donors; HIV; test-seeking motivation; blood safety

INTRODUCTION

There is a global effort to increase HIV testing in order to maximize the benefits of early diagnosis and treatment for the health of persons living with infection and to reduce onward transmission.[1] Meanwhile, blood banks are working towards universal testing of all blood donations using the most accurate tests possible, the deferral or exclusion of “candidate” or potential blood donors with risk factors for HIV and the establishment of regular, repeat voluntary donors at low risk.[2,3] The latter approach includes phasing out “replacement donors” (i.e., those recruited by family members or friends who use or may a blood transfusion) and increasing “community-recruited donors” who altruistically volunteer from the population at large. While blood banks in many countries are equipped to perform a high volume of HIV tests, use of the blood donation process for the purpose of diagnosing HIV among persons at risk is at odds with the mandate to keep the blood supply as free of HIV contamination as possible and to provide proper counseling for those at risk.

Nonetheless, test-seeking behavior among blood donors has been observed worldwide.[4–12] Previous studies have shown that many at-risk individuals get tested for HIV for the first time through the blood donation process.[4–8] This test-seeking behavior may pose a threat to the safety of the blood supply through a small but real risk of donation during the HIV window period.[3] The window period is the length of time following infection before the antibody screening test becomes reactive, which may be few days to a several weeks depending on the testing technology being used (e.g., antibodies are typically detected within three weeks after infection, HIV-RNA in seven to eleven days, p24 antigen in three to ten days after HIV-RNA.[3] In addition, candidate donors must deny risk behavior in order to be approved for donation and thus may not receive appropriate counseling.

Studies have shown that 7% to 14% of blood donors in Brazil acknowledged their primary motivation to donate blood was to gain access to HIV testing services.[9–12] However, there is little information regarding whether prior experiences with alternative HIV testing facilities, e.g., voluntary counseling and testing centers, affect test-seeking behavior at blood centers. Therefore, we evaluated current test-seeking motivations and prior alternative HIV testing experiences among blood donors in São Paulo, Brazil.

METHODS

All persons presenting for blood donation between August 2012 and May 2013 at Fundação Pró-Sangue Hemocentro, the largest blood bank in Brazil, were invited by the researchers to participate in the survey. Candidate blood donors were consecutively approached and recruited to participate in the study after they were screened for donor eligibility. Participants were not recruited from any other locations. After providing written consent,

completing the intake and screening process and while awaiting blood donation, participants completed a questionnaire using an audio computer-assisted self-interview (ACASI) system. Up to ten interview stations were available to accommodate all candidate donors wishing to participate.

The standardized questionnaire collected demographic characteristics, blood donation history, test-seeking motivations to donate blood, and prior HIV testing history and experiences. Questions to assess current test-seeking motivation for donating blood included asking them if the purpose of donating blood today was to be tested for HIV, whether they agreed with the statement that they donate blood in order to get their HIV test results, and if they agreed with the statement that blood donation is a good, fast and anonymous way to get HIV test results. To gauge their experiences with alternative HIV testing (i.e., apart from blood donation), participants were asked about their most recent prior test, including type of facility (collapsed into public and private settings), their level of satisfaction and reasons for dissatisfaction. Questionnaires were derived from our previous studies and underwent cognitive testing with 20 blood donors prior to implementation.[9–11]

We tested two hypotheses among all donors and among male and female donors separately: 1) that prior dissatisfaction (“unsatisfied” or “very unsatisfied”) with their most recent HIV testing experience would be associated with current test-seeking at the blood bank (i.e., indicating they were coming to donate blood today to be tested for HIV); and 2) that HIV testing at a public facility would be associated with current test-seeking at the blood bank. The correlation between dissatisfaction with their most recent testing experience at an alternative testing facility and current test-seeking through blood donation was assessed using logistic regression. The study received approval from Institutional Review Boards in Brazil and at the University of California, San Francisco.

RESULTS

A total of 14,433 eligible donor candidates were consecutively approached and invited to participate in the study, of whom 11,988 (83.1%) agreed and 11,867 (82.2%) provided complete information for the current analysis. Mean age was 35.1 years (standard deviation 10.3, range 18–68); 54.2% were male, 58.0% white race/ethnicity, 89.1% employed and 78.1% previously donated blood, as detailed in Table I. Most candidate donors were community-recruited volunteers (85.9%); that is, they were not “replacement” donors (14.1%) presenting on behalf of a relative or friend needing a transfusion.

Indicators of test-seeking behavior among the candidate blood donors are summarized in Table II. When asked directly if they came to donate blood for the primary purpose of getting an HIV test, 2.7% acknowledged doing so. We use this response as our indicator of “test-seeking” in further analyses. In addition to test-seeking as a primary motivation to donate blood, 18.2% agreed that they donated in part to get their test results, although not as the primary or sole motivation. Furthermore, 56.1% of donors agreed that blood donation was a good, fast and anonymous way to get HIV test results and 55.1% had not heard of the free, alternative public HIV testing sites (“Counseling and Testing Centers”). Not being aware of these alternative testing centers was significantly associated with test-seeking (OR

1.55, 95% confidence interval [CI] 1.23 – 1.96). Test-seeking was also associated with donors reporting that someone suggested they go to the blood bank to get tested for HIV, hepatitis or for some other health reason (OR 11.68, 95% CI 8.44 – 16.17). Among donors who received the suggestion to get tested at the blood bank (n=249), 30.9% said that the suggestion came from a health care provider and 25.5% said it came from another blood donor.

Many candidate blood donors (62.0%) reported they had never tested for HIV apart from blood donation. Of those who had previously tested, 47.7% used public facilities the most recent time they tested. A small minority expressed being dissatisfied (1.5%) or very dissatisfied (1.0%) by their experience with the most recent alternative test. Among those offering reasons for their dissatisfaction (n=104), the reasons cited included too long of a wait to get tested (22.1%), too long of a wait to get test results (20.2%) and the counseling took too long (4.8%). Many expressed that the alternative testing facilities were too crowded (13.5%), too far from home (13.5%), too near to home (12.5%) or lacked privacy (11.5%). Others said they did not have confidence in the equipment at the alternative test facilities (12.5%) or they did not perceive their tests as accurate (7.7%). Respondents could select more than one reason for their dissatisfaction.

Of the 4,498 donors with a prior alternative HIV test, 2.8% were test-seekers – a proportion similar to donors overall. Current test-seeking motivation to donate blood (using the question in Table II, “Did you come to donate blood today because you wanted to be tested for HIV?”) was significantly associated with dissatisfaction (i.e., “unsatisfied” or “very unsatisfied”) with prior testing at an alternative facility among all donors (OR 2.94, 95% CI 1.40 – 6.19) and male donors (OR 4.21, 95% CI 1.26 – 14.14) who reported having a prior alternative HIV test, as shown in Table III. Among female donors, dissatisfaction was not significantly associated with current test-seeking motivation. Test-seeking was strongly associated with testing at a public alternative test facility for all donors of both sexes. As implied, dissatisfaction with their prior alternative testing experience was associated with public compared to private HIV testing facilities (OR 3.69, 95% CI 2.40 – 5.65) for all donors, as well as for male (OR 4.59, 95% CI 2.09 – 10.04) and female donors (OR 3.10, 95% CI 1.86 – 5.18) separately.

DISCUSSION

The study findings indicate that most blood donors were not aware of the availability of free and confidential public HIV testing services and this lack of awareness was associated with donating blood in order to get tested for HIV. In addition, among donors who had previously tested for HIV apart from blood donation, dissatisfaction with past experiences, especially through public programs, was associated with using the blood bank for the purpose of HIV testing. This test-seeking behavior may pose a threat to the safety of the blood supply if test-seeking donors at elevated risk for HIV donate during the window period, a particular risk at blood centers that do not conduct nucleic acid testing for the detection of acute HIV infection. Such donors also may have elevated risk for other transfusion-transmissible infections that share risk factors with HIV, such as hepatitis B, hepatitis C, and syphilis.[10]

The overall level of test-seeking behavior observed in the present study was lower than levels reported in prior studies in Brazil, 2.7% versus 7–14%, respectively.[9–12] This difference may be due to the fact that the present study used a more stringent “yes or no” question that asked directly “Did you come to donate blood today because you wanted to be tested for HIV”, whereas previous studies classified test-seeking behavior based on strong agreement with two questions that asked indirectly about test-seeking motivation.[9,10] Even though only a small percentage indicated that HIV testing was their primary reason for donating on this day, many donors believed the blood donation process was generally a good way to get tested and nearly 1 in 5 donors indicated that getting test results was one motivation to donate. Even when donors indicated that getting an HIV test was not their primary motivation, there seems to be a reliance on blood centers for HIV testing even when donors have other motivations.[9–11] Since one quarter of all HIV tests performed in Brazil are conducted at blood centers, these findings further indicate that alternative testing sites are currently under-utilized by large numbers of persons wishing to know their HIV serostatus.[8]

Women were less likely to express dissatisfaction with alternative testing than men and their dissatisfaction was not significantly associated with current test-seeking through blood donation. Since many women receive HIV counseling and testing as well as other individualized services through reproductive health services, their experiences may be more satisfactory overall and they subsequently may feel less need to use blood donation as a means of HIV testing. In contrast, the present study found men were more dissatisfied with alternative testing and the association between dissatisfaction and test-seeking through blood donation was stronger. As men may not be seeking contraception and other services at reproductive health clinics, they may be using free-standing HIV testing sites where their experiences are less satisfactory. These unsatisfactory experiences may lead them to seek future HIV testing through blood donation. The problem of test-seeking through blood donation may best be addressed by improving alternative testing services for men at risk.

There are certain limitations of the study. Donors may under-report test-seeking as their primary motivation for donating. Call-back interviews of serologically-positive donors found many individuals admitted seeking HIV testing as the motivation for donating blood but initially denied this reason at intake screening.[5] Data were not available for persons who declined participation in the study with respect to test-seeking behavior, although there were no differences in the prevalence of transfusion-transmission infection observed. While 83.1% participation is high, there could be differences between persons who declined and those who accepted participation, with unknown effect on the results. Another limitation is that we only obtained the perspectives of blood donors. Interviewing persons at alternative testing facilities would enable the direct measurement of satisfaction level and interviewing persons at risk for HIV who have never tested is likely to reveal other potential barriers, for blood donors as well as the general population at large.

The present study provides some practical insights into means of reducing the reliance on blood banks for HIV testing and for improving alternative testing. Not having heard of the free alternative testing centers may be addressed through high profile public information campaigns. Education for health care providers is also needed in order to avoid the referral

of patients to the blood bank for testing. Creating an environment at the alternative test centers that is more welcoming, appealing and efficient should also help address barriers to their use by test-seeking blood donors. Many of the reasons for dissatisfaction were related to the inconvenience of the services. Operational research can seek to identify ways to decrease the length of time spent waiting to be seen, waiting time for test results and duration of counseling. The perception that alternative testing is not accurate may be addressed by providing better education and ensuring that the most recent generation of assays is used, including consideration of implementing nucleic acid testing for persons testing HIV-antibody negative at alternative testing sites.[13,14]

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Table I

Characteristics of candidate blood donors, São Paulo, Brazil, August 2012 – May 2013 (N=11,867)

Characteristic	N (%)
Age (years)	
18–24	1,557 (13.1)
25–34	4,306 (36.3)
35–44	3,403 (28.7)
45–54	1,862 (15.7)
55	739 (6.2)
Sex	
Female	5,435 (45.8)
Male	6,432 (54.2)
Race/ethnicity/color	
White	6,883 (58.0)
Mixed	3,209 (27.0)
Black	1,332 (11.2)
Asian	231 (2.0)
Amerindian	77 (0.7)
Other, don't know, declined	135 (1.1)
Employment status	
Unemployed	1,294 (10.9)
Employed, student, retired	10,573 (89.1)
Previous blood donation	
Current donation is first time	2,595 (21.9)
Previous donation	9,258 (78.1)
Donor type	
Community-recruited volunteer	10,187 (85.9)
Replacement	1,669 (14.1)

Note: Some categories do not add up to total due to missing data.

Table II

Current test-seeking motivation and prior HIV testing history and experiences, among candidate blood donors, São Paulo, Brazil, August 2012 – May 2013 (N=11,867)

Current Test-Seeking Motivation and Prior HIV Testing Experiences	N (%)
Did you come to donate blood today because you wanted to be tested for HIV? (Yes)	324 (2.7)
I donate blood to get test results. (Agree)	2,157 (18.2)
I believe that blood donation is a good, fast and anonymous way to get my test results. (Agree)	6,605 (56.1)
Did someone suggest that you go to the blood center to test for HIV, hepatitis, or some other reason? (Yes)	249 (2.1)
Have you ever heard of the “Counseling and Testing Centers”? [free, alternative public HIV testing sites] (Yes)	5,316 (44.9)
Other than blood donation, have you ever been tested for HIV? (Yes)	4,498 (38.0)
Type of HIV testing venue (of those with previous testing history)	
Public	2,122 (47.7)
Private, other	2,329 (52.3)
Level of satisfaction with prior test	
Very satisfied	1,677 (37.9)
Satisfied	2,641 (59.6)
Unsatisfied	268 (1.5)
Very unsatisfied	43 (1.0)
Reasons for dissatisfaction with prior HIV test (of n=104 who provided response)	
Wait too long to get tested	23 (22.1)
Wait too long for test results	21 (20.2)
Too crowded	14 (13.5)
Too far from home	14 (13.5)
Too near to home	13 (12.5)
Lack of confidence in equipment at testing facilities	13 (12.5)
Lack of privacy	12 (11.5)
Test not perceived as accurate	8 (7.7)
Counselling too long	5 (4.8)

Note: Some categories do not add up to total due to missing data.

Table III

Associations between current test-seeking motivation and prior alternative HIV testing experiences by sex, candidate blood donors, São Paulo, Brazil, August 2012 – May 2013 (n=4,498)

Hypothesis tested by logistic regression	All Donors OR (95% CI) p-value	Female Donors OR (95% CI) p-value	Male Donors OR (95% CI) p-value
Association between current test-seeking motivation (dependent variable) and dissatisfaction with prior alternative testing (independent variable)	2.94 (1.40–6.19) p=0.004	2.10 (0.82–5.40) p=0.124	4.21 (1.26–14.14) p=0.020
Association between current test-seeking motivation (dependent variable) and testing at a public alternative facility (independent variable)	3.69 (2.40–5.65) p<0.001	3.10 (1.86–5.18) p<0.001	4.59 (2.09–10.04) p<0.001