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HIV self-testing in Peru: questionable availability, high acceptability but potential low linkage to care among men who have sex with men and transgender women

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Abstract

HIV status awareness is key to prevention, linkage-to-care and treatment. Our study evaluated the accessibility and potential willingness of HIV self-testing among men who have sex with men (MSM) and transgender women in Peru. We surveyed four pharmacy chains in Peru to ascertain the commercial availability of the oral HIV self-test. The pharmacies surveyed confirmed that HIV self-test kits were available; however, those available were not intended for individual use, but for clinician use. We interviewed 147 MSM and 45 transgender women; nearly all (82%) reported willingness to perform the oral HIV self-test. However, only 55% of participants would definitely seek a confirmatory test in a clinic after an HIV-positive test result. Further, price may be a barrier, as HIV self-test kits were available for 18 USD, and MSM and transgender women were only willing to pay an average of 5 USD. HIV self-testing may facilitate increased access to HIV testing among some MSM/transgender women in Peru. However, price may prevent use, and poor uptake of confirmatory testing may limit linkage to HIV treatment and care.

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Keywords

HIV; homosexual; transgender women; Peru; self-testing

Introduction

In July 2015, the World Health Organization (WHO) recognized the increasing importance of HIV self-testing. Self-testing could be the preferred option for first-time testers, or repeat testers by giving them the opportunity to test conveniently and privately in their homes.¹ In Peru, HIV primarily affects men who have sex with men (MSM) and transgender women.² Over 70% of MSM and transgender women living with HIV in Peru do not know their HIV status.³ Lack of awareness of their HIV status may be due to many factors such as fear of test results and stigma associated with being seen in a clinic for HIV testing, as well as difficulties in accessing government funded facility-based testing.⁴

Increasing HIV serostatus awareness is an urgent global public health priority. Studies show that increasing serostatus awareness at the population level has contributed toward decreased risky sexual behaviors and reduced HIV transmission.⁵ HIV self-testing may be a new way to improve uptake of HIV testing, especially among at-risk groups, by improving privacy and convenience.⁶ However, the oral HIV self-test is not without limitations. The window period of the oral HIV self-test is three months, which is longer than blood-based tests. Following a positive initial result, the person must get a confirmatory HIV test in a health facility.⁷

Several studies have explored the acceptance of oral fluid self-testing around the world. In a US study, adult patients in two Baltimore emergency departments were given the choice to perform the oral fluid HIV self-test vs. the finger-stick blood self-test, and 91% of the participants chose the oral fluid HIV test, while only 9% of those in the study chose the blood test. Additionally, participants reported trusting the oral HIV self-test results and had confidence that they would be able to perform these tests at home.⁸ Other studies reported advantages of the oral self-test, including that the test was non-invasive, did not require trained personnel to perform, and was associated with less pain, discomfort and stress than conventional testing with standard venous blood sampling.⁹ In New York, gay and bisexual participants (53%) reported their willingness to seek medical treatment and support from HIV community health centers in the event of a possible positive result after using an HIV self-test, which is important for rapid linkage-to-care and treatment.¹⁰

A study based on key informant interviews in Kenya, Malawi and South Africa specified that pharmacies are a potential distribution point for self-testing kits, providing people a way to get the test outside of their community without the fear of being recognized.¹¹ Other suggested distribution approaches in that study included supermarkets, restrooms of bars, community based organizations or to co-market HIV self-tests with condoms.

To better understand the availability of HIV self-test kits and willingness to use an HIV self-test in Peru, we evaluated the availability of HIV oral self-test kits in Peruvian pharmacies,

as well as the attitudes and intentions to use the oral HIV self-test among MSM and transgender women.

Methods

In February 2015, we surveyed the four pharmacy chains in Peru that were advertised on www.oraquick.com.pe as having the HIV self-test kit, to confirm the availability of the oral self-test. We asked one pharmacy manager in each chain of pharmacies questions about cost, purchase frequency and any purchase restriction of the self-test kit. We also verified the type of test for sale in each pharmacy. All of the pharmacies were visited by the Study Coordinator, except for one pharmacy in the north, which was interviewed on the phone.

To evaluate attitudes and the potential uptake of HIV self-testing we surveyed 192 participants who attended one of the two collaborating sexually transmitted infection clinics, Barton and Epicentro, both located in Lima, Peru.¹² The participants were part of a cohort study of MSM and transgender women in these clinics. The data were collected between October 2014 and September 2015. All participants signed an informed consent prior to the study. The study was approved by the Ethics Committee of the Universidad Peruana Cayetano Heredia and the University of California, Los Angeles.

Data on demographics and willingness to use the HIV self-test kit were collected using an interviewer administered computer-based questionnaire. Participants were asked questions about their willingness to use a HIV self-test kit, linkage to care after potentially testing HIV-positive, as well as preferences and comfort level of getting the HIV self-test kit delivered by mail. A picture and description of the HIV self-test kit was included in the survey prior to asking questions about the tests. The survey questions are included in Appendix 1 online.

All the analyses were performed using Stata (version 14.0). MSM and transgender women showed important differences in socio-demographics and behaviors. As such, we compared the responses between MSM and transgender women. Categorical values were compared by using the Chi-square statistic and continuous values were compared using t-tests to determine statistical significance at $p < 0.05$.

Results

Availability of the oral HIV self-test kit

Three of the four pharmacy chains surveyed were located in Lima and one was located in the northern Peru. The cost of the test was 18 USD. HIV self-test kits were available to individuals 18 years old or older for over-the-counter purchase. However, upon inspection all the available tests kits were oral fluid tests kits for physician use and not the kits intended for individual sale. The available HIV self-test kit did not come with user instructions. The self-test kit included a swab, a test tube, a test tube rack and an information sheet on HIV infection in English and Spanish.

Willingness to use the oral self-test among MSM and transgender women

We surveyed MSM and transgender women participants returning for follow-up visits. Among participants, 192 Peruvian transgender women ($n = 45$) and MSM ($n = 147$) the mean age among transgender women was 35 (interquartile range of 27–42 years old) and for MSM the median age was 31 years (interquartile range of 24–40 years old).

Only 54% ($n = 104$) of all the participants had more than secondary education. Transgender women were less educated than MSM in this study (27% of transgender women vs. 63% of MSM had more than secondary education). Participants had a monthly income of 249 USD (transgender women) and 358 USD (MSM). Nearly all participants (79%, $n = 158$, including 80% of MSM and 78% of transgender women) reported testing for HIV in the past. Participants showed high willingness to use the HIV self-test kit (95% transgender women vs. 78% MSM). When asked for a preference between an oral HIV self-test and a blood test performed in a clinic where both were available, only 19% preferred to get a blood test in a clinic (Table 1).

Both transgender women and MSM were willing to perform the test a median of four times per year (IQR 4-4), which is recommended by the WHO for at-risk populations who test HIV-negative. The amount participants would pay for the HIV self-test kit was 5 USD (IQR 5 to 6.67). Of the respondents, 69% ($n = 121$) were somewhat likely to do a confirmatory HIV test in a clinic. However, 5% (only MSM) said they would not get a confirmatory HIV test. Seventy-eight percent ($n = 135$) of the participants reported being comfortable getting a HIV self-test kit in a clinic or by mail. Transgender women preferred to get the HIV self-test kit at home (63%, $n = 27$), whereas MSM preferred to get the self-test kit delivered to a friend's house (46%, $n = 61$) ($P < 0.001$) (Table 1).

Discussion

The Oraquick® in home oral HIV test kit was not available for purchase in Peru; instead the test that was available was the physician version that did not come with user instructions, and was not intended for individual sale or home use. Four pharmacy chains, three in Lima and one in northern Peru, sold that version as an individual HIV self-test kit.

Almost all of the survey respondents reported they would use a rapid home HIV self-test at least twice yearly. Respondents reported willingness to pay on average 5 USD for the test, less than half the current price in the pharmacies surveyed. The high cost of the test might be a barrier for access for low-income populations.

Of the respondents, 51% would definitely do a confirmatory HIV test in a clinic after a HIV-positive result. The principle concern with self-testing is getting those with a HIV-positive result into a clinic for confirmatory testing and into care. In this study, 63% of transgender women and 71% of MSM were likely to get follow up testing. If those who test HIV-positive with self-tests do not confirm their results, and get linked into care and treatment, the public health benefit of HIV self-testing may be limited, especially among at-risk groups. That lack of intended follow-up might also reflect a lack of understanding of available and effective treatment options for HIV infection, which are free through government clinics in Peru.

More research on barriers to accessing clinical care and HIV treatment literacy among MSM and transgender women in Peru is needed. Additionally, the increased window period of self-testing vs. blood based tests was not addressed in our questions and should be a focus in future research.

We found that transgender women were more willing to report intended use of an oral HIV self-test instead of a clinic-based blood test when compared to MSM. Transgender women felt very comfortable with getting the self-test delivered by a delivery company and to performing the test at home. The difference by gender may reflect the increased difficulty that trans-gender women have in experiencing stigma or accessing existing medical services, which given their high-risk for HIV infection, is something that should be addressed by the health system.

Our findings are consistent with other studies reporting the overall acceptability and preferences of self-testing. A recent study among MSM in Peru and Brazil reported that self-testing mitigated the fear of stigma and privacy concerns around HIV testing, and increased availability and convenience.¹³ In a literature review, participants from Kenya, Malawi, USA, Spain and Singapore believed a HIV self-test could give them more control over their health and reported that a saliva-based HIV test was easy to perform and would recommend self-testing to family and friends.¹⁴

In Peru, the National Guideline for HIV counselling, state pre- and post-test counselling should accompany each HIV test;¹⁵ however, these guidelines do not specify that counselling has to be in person. Online information or information included with the self-test kits is a way to provide education and counseling for HIV testing without clinic based counseling while adhering to the existing guidelines.

There were some limitations of our study. Firstly, the ten-question survey only measured the intentions of the participants and not the actual practice of using a HIV self-test kit. Our study also had a small sample, and the selection criteria for the original study were focused on including MSM and transgender women at increased risk of acquiring syphilis and HIV infection; therefore, the results cannot be generalized to all MSM and transgender women in Peru. Social desirability bias is another potential limitation as the questions were asked to participants by a study interviewer, which could lead to an overestimation of HIV self-testing.

Conclusion

In summary, we found that the idea of oral HIV self-testing was highly acceptable among an at-risk population of MSM and transgender women in Lima, Peru. The principal barriers to accessing the self-test were the availability of the correct test, and the high cost. Users could also be confused about how to use the test correctly, as the available test (clinical version) lacks patient instructions. Furthermore, as the intention to obtain a confirmatory test was only expressed by part of the population, this could limit the public health utility of self-testing. Although compared to not testing, an increase in case-identification and serostatus awareness would remain beneficial. Research to develop interventions based on HIV self-

testing would require more information on which parts of the MSM and transgender populations would benefit most from the privacy of self-testing and how best to target these groups while maximizing this intervention's ability to link recently diagnosed people to available care.

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Table 1

Willingness and preferences of transgender women and men who have sex with men to use an oral HIV self-test kit in Lima, Peru, 2015.

	Transgender women (n = 45)	Men who have sex with men (n = 147)	P-value
Willingness to use the HIV self-test if free of charge			
Reported willingness to use the HIV self-test	43 (95%)	115 (78%)	P = 0.28
If willing to use, number of tests per year, median (IQR)	4 (IQR 4 - 5)	4 (IQR 4 - 4)	P = 0.43
Preference on clinic vs. self-testing			
Always/almost always in a clinic	1 (2%)	33 (25%)	P = 0.002
Neutral	25 (58%)	58 (44%)	
Always/almost always HIV self-test	17 (40%)	29 (22%)	
Likelihood of confirmation test or medical treatment			
Unlikely do a confirmatory test	0 (0%)	7 (5%)	P = 0.009
Neutral	16 (37%)	20 (15%)	
Likely do a confirmatory test	27 (63%)	94 (71%)	
Acceptability of getting an HIV self-test delivered			
Somewhat/very comfortable	41 (95%)	94 (71%)	P = 0.03
Neutral	1 (2%)	19 (14%)	
Somewhat/very uncomfortable	1 (2%)	5 (4%)	
Preferences for receiving an HIV self-test			
My house	27 (63%)	34 (26%)	P < 0.01
Friend's house	13 (30%)	61 (46%)	
Community center	1 (2%)	21 (16%)	
Other	1 (2%)	2 (2%)	

Note: Missing data were excluded from affected answers only. Chi-square and t-tests were used as appropriate to calculate the reported P-values. Values in bold = P < 0.05.