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What Men Who Have Sex with Men in Peru Want in Internet-based Sexual Health Information

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Abstract

Objectives—We aimed to gather information among gay men regarding their preferences for online sexual health information.

Methods—1,160 Peruvian MSM, 18 years or older, completed an online survey hosted on www.tunexo.org.

Results—The mean age was 26.8 years. Around 90% had post-high school education. The self-reported HIV prevalence was 12.3%. The acceptability of sexual health content was greater in the most highly educated group. The highest rated topics and services of interest were those related to improving sexual and mental health. The least educated group was significantly more interested in “getting prevention messages on mobiles” compared to men with the highest level of education (71% vs. 52%; $p < 0.001$). Men’s sexual health was of more interest to the 30–39 year-old group compared to the 18–24 year-old one (97% vs. 87%; $p = 0.005$).

Conclusions—Future web-based interventions related to sexual health among targeted groups of MSM in Peru can be tailored to meet their preferences.

Keywords

men who have sex with men; Internet; HIV; sexual health

INTRODUCTION

In Latin America and the Caribbean, an estimated 100,000 new HIV infections occurred in 2015 and the vast majority were among men who have sex with men (MSM) (*UNAIDS UNAIDS Global AIDS Update 2016*, 2016). The last HIV national surveillance for Peruvian MSM reported a prevalence of 12.4% compared to 0.5% found in a population-based study

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(Cárcamo, 2012). The incidence is higher in MSM younger than 25 years (9.6 vs. 5.2 cases per 100 person-years) (*Peru Country Progress Report UNAIDS*, 2011). The rate of other sexually transmitted infections (STIs), such as syphilis, among Peruvian gay men is similarly high (Clark, 2008; Lama, 2006, 2010; *Peru Country Progress Report UNAIDS*, 2011; *UNAIDS Report on the global AIDS epidemic*, 2012; Quinn, 2012; J. Sanchez, 2009). The burden of HIV/STI in Peruvian MSM is consistently higher than that in the general population and prevention programs should be improved to reach and link more MSM to health care.

Although HIV and STI testing and counseling services for MSM do exist in Peru, many do not have access to such services because of the social stigma associated with being gay (Soto-Ramírez, 2008). As a result, an estimated 26–50% of Peruvian MSM have not been tested for HIV during the prior 12 months and have no knowledge of their HIV status (*UNAIDS Report on the global AIDS epidemic*, 2012). Government-sponsored HIV prevention interventions targeting MSM based on peer educators who “recruit and refer” them to local HIV/STI referral centers reach less than 20% of MSM in Lima, Peru (*Peru Country Progress Report UNAIDS*, 2011). Indeed, in 2012 the government allocated less budget and hired fewer peer educators decreasing their number by more than 40% (*Peru Country Progress Report UNAIDS*, 2011). Alternative strategies for reaching MSM are clearly needed.

The Internet is a feasible tool to deliver HIV prevention interventions to Peruvian MSM (Blas, 2007, 2010, 2013). Access to the Internet in Lima is high, with an estimated 84.2% of people between 17 and 24 years old that use Internet (Internet use in Peru, 2012), which is reinforced by inexpensive and widespread commercial “cafes” which often provide private booths (Blas, 2007; Curioso, 2007). Peruvian MSM use Internet to find sexual partners as well as HIV/STI information and services (Blas, 2007; Curioso, 2007). A study that recruited online reported that 93.7% MSM were interested in receiving risk-reduction interventions through websites, 87.4% in chat rooms and 83.4% in emails (Blas, 2007). In addition, an online video-based intervention for MSM in Peru increased HIV testing rates (Blas, 2010). In the United States Hooper *et al.* gathered information online among gay men regarding acceptability and interest in specific areas, which can be replicated in Peru to inform online interventions (Hooper, 2008). Tailored online HIV prevention interventions can contribute to reach Peruvian MSM.

Although Internet has the potential to effectively deliver an intervention for MSM in Peru, to date there is no information regarding what MSM prefer when seeking sexual health-related information online. The objective of this cross sectional study was to survey MSM regarding their preferences regarding sexual health topics, prevention and counseling services; and acceptability of sexually explicit images and specific language for web-based prevention and sexual health messaging.

METHODS

Recruitment

From January to March 2010, we performed venue-based and online recruitment to encourage Peruvian MSM to complete an online survey. In the venue-based strategy, we delivered recruitment cards to subjects attending the main venues frequented by MSM in Lima (the country's capital), including clubs, bars, video arcades, parties, retail businesses and *Epicentro* Gay Men's Community Health Center. Cards included messages encouraging them to visit the study website. For the online, we used banners to recruit subjects who accessed the two major Peruvian gay websites: gayperu.com and peruesgay.com. Banners redirected to the study website. Also, we created profiles with information of the study on [Facebook.com](https://www.facebook.com), Hi5.com, gay.com and gaydar.net; and used list serves targeting MSM. Similarly, we asked participants to help us, by completing the survey, to create a program to fight against HIV/AIDS and STI among MSM and to improve their sexual health.

Inclusion criteria

In order to be included in the analysis, participants needed to meet all of the following inclusion criteria: (1) 18 years of age or older, (2) male sex at birth, (3) report having had sex with a man in the past, (4) be a resident of Peru.

Study website

We created the name "*Tu Nexo*" for the study website, which means "your connection" (to better sexual health) and our slogan was: *Marca tus preferencias* (Mark your preferences). The *Tu Nexo* website included information about the institutions involved in the project, objectives of the project, risk and benefits of participation, privacy policy information and contact information. No personally identifiable information was required.

The survey

The survey was comprised of three sections. The first included demographic questions and self-report of HIV status and risk behaviors. High risk behavior was defined as two or more episodes of unprotected anal intercourse (receptive or insertive) with a male partner in the last three months (Hooper, 2008). Also, in this section we included a question regarding where they saw the advertisement of the study in order to know if they were recruited online or at gay venues. The second section included Likert-type questions about preferences when searching online sexual health-related information: acceptability of images and type of language, and topics and services of interest. This section was partially extracted and adapted from Hooper *et al.* (Hooper, 2008). We assessed the acceptability of sexual health content with 15 items, where 1 was "unacceptable"; 2 was "neutral"; and 3 was "acceptable". Likewise, interest in topics (21) and services (16) to be included in a web-based sexual health-related intervention, were assessed with Likert scales. Interest in topics and services were scored "disinterested", "neutral" or "interested". Finally, the third section included questions about most visited websites when seeking sexual health information and preferences regarding HIV testing and counseling. In order to include in the second and third sections relevant questions to be rated by the target population, the survey was reviewed by

professionals working in the field and members of the community. The survey was pilot tested prior to its launch.

Process

When visiting the study website (www.tunexo.org) and clicking on the “Start survey” icon, an online IRB-approved informed consent had to be accepted before continuing. Next, the user was asked to register with the website using an email address and password (users were encouraged to use an email address without their real names). In order to ensure a valid email address was used, a validation link was sent to the user via their registered email address from which the survey was then launched. After the validation process, users could log in directly to the website to complete the survey if they were unable to finish it during the first log in. We allowed all registered subjects to complete the survey and excluded those who did not meet the inclusion criteria from the analysis; this method was chosen to reduce the possibility of persons excluded at the beginning from logging in later using a false identity, and providing invalid information.

Ethics issues

Our study and instruments (survey, informed consent, and advertisement materials) were reviewed and approved by the Institutional Review Board of the University of Washington in Seattle and Universidad Peruana Cayetano Heredia, located in Lima, Peru. All subjects provided online informed consent. There were no financial incentives for study participation.

Data analysis

Data analysis was conducted using Stata/IC 10.1 software. We performed descriptive analysis. Differences in preferences across age groups, education level, HIV status and risk behaviors were evaluated using Chi square and Fisher’s exact test. We utilized a significance level of 0.05 with Bonferroni adjustments for multiple comparisons.

In order to identify duplicate entries, we crossed the following variables: IP addresses, date of survey, emails, passwords, age, month of birth, year of birth, city, district and completion time and start/end times (Bowen, 2008; Rosser, 2009). Surveys with two equal variables were labeled as duplicated and those with one equal variable were labeled for further checks (Bowen, 2008; Rosser, 2009). Also, to avoid multiple surveys there were no financial incentives for study participation (Birnbaum, 2004). Furthermore, we checked for self-misrepresentation by assessing incongruent data, demographics or questions regarding sexuality and group self-identification. Duplicate surveys, those that did not meet the eligibility criteria and those suspicious for misrepresentation were removed from the final analysis.

RESULTS

2,183 subjects registered on the website of which 1,382 completed the email validation process. After cleaning the database for incomplete surveys, duplicate entries, self-misrepresentation and those who did not meet inclusion criteria, we arrived at 1,160 (84% of the individuals who completed the validation process) subjects, on whom the final analysis

is based. 79% of our sample came from online recruitment and 21% from venue-based recruitment. Overall, the main source of participants came from the Peruvian website gayperu.com (56.9%) and the second greatest source was gay venues (14.4%).

Demographic characteristics

More than 70% of subjects were younger than 30 years. The mean age was 28.6 years (range: 18 – 59). Over 90% reported living in the Lima Metropolitan area. Nearly 90% reported post-high school education, which were considered as well educated for the analysis. 77% self-identified as gay (closeted, discreet or open) (Table 1). During the prior six months, 58% had searched for sexual health information on the Internet; 99% used Google or Yahoo, 27.5% contacted gay websites and 26.6% contacted websites from private institutions working with MSM.

Acceptability of sexually explicit images and language for sexual health content

Participants rated as highly acceptable (80%) images of naked men having anal or oral sex. Group sex was less acceptable (60%). Informal or explicit sexual language had low acceptability (<50%). The least acceptable item was images of male-female sex (Table 3).

Interest in sexual health topics and services

Over 50% of participants were interested in all the topics suggested to be included in an online HIV prevention intervention. However, the nine topics rated as of the highest interest with 80% were those related to improving sexual and mental health and well-being, and having high quality sex. Topics related to alcohol, drugs and religion were of less interest; and the topic of least interest was using the Internet to date men (Table 3). Similarly, with regard to services to be included in such an intervention, more than 50% were interested in having access to all services. The top services of interest were attention by professionals and institutions providing HIV/STI services for MSM. The service of least interest overall was receiving prevention messages on mobile devices (Table 3).

Preferences across education (Table 4)

Overall, the acceptability of images and type of language with sexual health content was greater in MSM with higher levels of education. Compared to the least educated group, the most highly educated group ranked as significantly more acceptable videos showing how to put on a condom (83% vs. 72%; $p=0.005$, $\chi^2=15.1$), men kissing (88% vs. 78%; $p=0.001$, $\chi^2=19.6$), pictures of a penis (82% vs. 65%; $p<0.001$, $\chi^2=15.1$) images of naked men (94% vs. 82%; $p=0.002$, $\chi^2=16.6$) and images of men masturbating (84% vs. 70%; $p=0.003$, $\chi^2=15.6$). Also, interest in the topics aging as a gay man and how to be a better lover was significantly higher among those with highest level of education (79% vs. 66%; $p=0.002$, $\chi^2=17.4$). Regarding interest in services, although “Get prevention messages on mobiles” received the lowest rating overall (57%), the least educated group was significantly more interested compared to men with the highest level of education (71% vs. 52%; $p<0.001$, $\chi^2=21.1$).

Preferences across age groups (Table 4)

Participants of different ages significantly differed on the acceptability of five items and on the interest in three topics. The youngest MSM reported as less acceptable drawings of men having sex, pictures of penis, images of men having group sex, images of male-female sex and the use of formal sex terms. Regarding topics, finding a stable partner was of more interest to the 18–24 year-old group; men's sexual health was of more interest to the 30–39 year-old group compared to the 18–24 year-old one (97% vs. 87%; $p = 0.005$, $\chi^2 = 18.4$); and how to date men online, although rated low overall (56%), was of more interest to the oldest compared to the youngest men (74% vs. 51%; $p = 0.001$, $\chi^2 = 23.1$).

Preferences across HIV status and risk behavior

High-risk sexual behavior in the prior three months was reported by 41.9%. Overall, only 31% had been tested for HIV in the prior 6 months. Among those who had ever been tested, self-reported HIV prevalence was 12.3% (94/766). We found no differences in acceptability of topics or services of interest when stratified by HIV status or risk behavior.

DISCUSSION

This is the first online study of Peruvian MSM that has gathered detailed information regarding preferences to design future web-based sexual health interventions. Our study included a sample of Peruvian MSM who were predominately young, well educated and had a high percentage reporting high-risk behaviors. MSM reported acceptability of images and types of language regarding sexual health content, and what topics and services they would prefer to receive in future online HIV/STI interventions and made other suggestions about preferences for seeking information online and for receiving HIV/STI counseling. Regarding demographics, our sample was similar to samples in other online studies done with MSM in Peru (Blas, 2007, 2010, 2011). The fact that MSM with higher levels of education are over-represented in Internet studies provides an opportunity to design more sophisticated interventions for subjects with good Internet skills. Compared to web-based samples in the U.S. (Rosenberger, 2012), our sample was younger and with more self-reported bisexuality, which makes Internet a promising space to reach bisexual Peruvian men.

Designing a web-based intervention that includes sexual health content that is well received by participants is a challenge. Acceptability of sexually explicit images and language was less well accepted in our sample compared to MSM in the U.S (Hooper, 2008). Indeed, participants were more extreme when rating unacceptable content. The youngest and least educated participants seemed to be more sensitive to sexual content such as group sex. These cultural differences are important to take into consideration when tailoring sexual health content for MSM. Tools designed in other settings and cultures may not be appropriate to be used for gay men in Peru. Nonetheless, overall the acceptability was high, which posits flexibility to design future interventions.

When analyzing topics of interest, participants were interested in improving their sexual and mental health, and also were interested in having healthy relationships. Actually, "Finding a stable partner" was of significantly more interest for the youngest participants. An approach

addressing better sexual health for gay couples, or to achieve future healthy relationships, could be an innovative way to commit young MSM to adopting lower risk behaviors. Nonetheless, other studies need to design and validate the content. Compared to the U.S. study (Hooper, 2008), dealing with mental disorders, such as depression and anxiety, seems to be of higher importance for Peruvians. In other settings these disorders are more prevalent among MSM and have been associated with HIV acquisition (O’Cleirigh, 2013; Stoloff, 2013). There is no data regarding mental disorders in Peruvian MSM, which represents an important area of research and intervention.

In Peru there is a lack of professionals and institutions working with MSM (*Peru Country Progress Report UNAIDS*, 2011), which were the services of most interest for MSM in the survey. Developing a directory with complete and updated information of such a network, as exists in other settings, could be useful to reduce this gap. Blas *et al.* found that Peruvian MSM were interested in receiving interventions through mobile phone text messages (Blas, 2007), which was not highly rated overall by all groups in our study, but was significantly more highly-rated by the least educated group. This presents an opportunity to take advantage of mobile devices to design prevention interventions for gay men in Peru.

Interestingly, we also found that Peruvian MSM not only used the Internet for finding sex partners, but also for obtaining information about sexual health (Blas, 2007). Nevertheless, we caution that the websites searched by our subjects were often websites not related to sexual health, which could result in finding information that is unreliable or not tailored to the specific needs of MSM. A tailored website will need to be disseminated appropriately to reach its target population.

As limitations, our sample may not be representative of MSM in Peru since the majority was from Metropolitan Lima and young. Nevertheless, Lima contains a third of Peru’s population and the majority of people with HIV infection, therefore, this survey gives us information about an important subpopulation of MSM that could benefit with an online HIV prevention intervention. In addition, reaching the youngest gay men posits an opportunity to tailor and deliver such interventions to this sub-group, which has the highest incidence of HIV (*Peru Country Progress Report UNAIDS*, 2011) and uses Internet quite frequently (*Internet use in Peru*, 2012). Regarding self-misrepresentation and duplicate entries, we used a protocol for detecting both; we did not offer cash reimbursements for participation; we allowed all registered subjects to complete the survey and later excluded from the analysis those who did not meet the inclusion criteria; and, we posted a version of the survey for those who did not want to participate but wanted to know about our study.

In conclusion, we assessed how preferences for online interventions differ according to age group and level of education. In addition, we used venue-based and online recruitment that might have yielded a more diverse sample of MSM (T. Sanchez, 2012). Future research is needed in Peru and elsewhere in order to assess if an online behavioral prevention intervention for the prevention of HIV in MSM is both acceptable and effective and adaptable to preferences that vary across age group and level of education (Rosser, 2010). Our results can be used to design, tailor and implement such an intervention.

CONCLUSIONS

Predominantly, high risk young and well educated Peruvian MSM living in Metropolitan Lima noted their preferences for a web-based HIV prevention intervention. The most highly rated topics and services of interest were those related to improving sexual and mental health, and having contact with HIV/STIs services, respectively. We found some important differences between age groups and education level that should be considered when designing sexual health content. Although delivering messages via mobile phones may prove useful, this study suggests that they should use prevention messages tailored to less well-educated MSM. Peruvian MSM currently use the Internet to find sexual health content but visit websites not related to sexual health. In conclusion, this study provides useful information to design a web-based HIV prevention intervention for Peruvian MSM.

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Table 1.Demographic characteristics (N=1,160^{*})

Demographic characteristic	N	%
Age		
18 – 24	510	43.9
25 – 29	322	27.8
30 – 39	257	22.2
40 +	71	6.1
Education		
High school	120	10.4
University/Technical non-graduate	467	40.6
University/Technical graduate	563	49
City		
Metropolitan Lima	1054	90.9
Outside Metropolitan Lima	106	9.1
Self-report sexual orientation		
Homosexual	796	69.2
Bisexual	350	30.4
Heterosexual	4	0.36
Self-identification		
Gay (discreet or open)	834	72.2
Bisexual	217	18.8
Closeted	56	4.8
Transgender woman	5	0.4
Sex worker	3	0.3
Other ^a	40	3.5
Tested for HIV before		
Never	361	32
6 months ago	348	30.9
7 – 12 months ago	114	10.1
1 –2 years ago	152	13.5
More than 2 years ago	152	13.5
Self-report HIV status		
HIV-positive	94	12.3
HIV-negative	648	84.6
Indeterminate/ Do not know	24	3.1

* Numbers may not sum to total due to missing data

^a participants could write in a text response for self-identification; most frequent responses were “discreet”, “none”, “man”, and “a normal person”.

Table 2.

Acceptability of sexually explicit images and language for sexual health content

Acceptability of sexually explicit images and language	Acceptable (%)	Unacceptable (%)
Images of naked men	91	2
Men kissing	87	4
Images of men having anal sex	86	4
Video showing how to put on a condom	81	6
Images of men masturbating	80	6
Images of men having oral sex	80	8
Pictures of a penis	76	7
Use of indirect sexual language	75	7
Use of formal sex terms	71	8
Stories with sexual content	68	9
Drawings of men having sex	63	15
Images of men having group sex	60	19
Use of informal sexual language	45	27
Sexually explicit audio recordings	42	24
Images of male-female sex	12	69

Table 3.

Interest in sexual health topics and services

Topics	Interested (%)	Not interested (%)
How to protect myself from HIV and STI	94	4
Men's physical sexual health	90	4
How to keep a healthy relationship	89	5
Ways to feel comfortable with my body	87	6
Ways to feel better about myself	87	7
How to deal with depression	84	8
How to deal with anxiety	83	8
How to have anal sex without pain	81	10
How to be a better lover	80	9
How to deal with sexual abuse	78	12
Ways to feel comfortable with my genitalia	78	12
Finding a stable partner	77	12
How to use a condom	76	15
Aging as a gay man	75	14
How to date men offline (i.e. in real life)	73	13
How to convince my partner to use a condom	73	14
Talk about drugs	68	19
Talk about alcohol	67	18
Help coming out of the closet	66	20
Talk about sexuality and religion	62	22
How to date men online	56	22
Services	Interested (%)	Not interested (%)
Contact with doctors who treat MSM	93	2
Contact with counselors in case I am HIV positive	92	3
Contact with counselors in person	91	4
Contact with institutions providing free testing HIV/STI	89	5
Videos about sexual health	88	4
Online counseling	88	4
Online medical counseling	88	5
Scientific articles about sexual health	84	5
Statistical information about sexual health	83	6
Images on sexual health	81	6
Reports about sexual health	80	7
Online forums about sexual health	78	9
Online games for learning about HIV and STI	72	13
Chat with other users	70	11
Interact with other users such as in FB or Hi5	64	18

Get prevention messages on mobile phones	57	25
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Table 4.

Acceptability of Sexually Explicit Images and Language and Interest in Sexual Health Topics and Services across Education and Age Groups

Differences by education	Total (%)	Acceptability (A) and interest in topics (T) and services (S) (%)				p ^a
		HS (n=120)	UTNG (n=467)	UTG (n=563)		
Video showing condom usage (A)	81	72	81	83		0.005
Men kissing (A)	87	78	88	88		0.001
Pictures of penis (A)	76	65	72	82		<0.001
Completely naked men (A)	91	82	89	94		0.002
Men masturbating (A)	80	70	77	84		0.003
Images of men having group sex (A)	60	47	57	65		0.002
Aging as a gay man (T)	75	66	73	79		0.002
How to be a better lover (T)	80	68	79	83		0.003
Get prevention messages on mobile phones (S)	57	71	59	52		<0.001
Differences by age		Acceptability (A) and interest in topics (T) and services (S) (%)				
		18 – 24 (n=510)	25 – 29 (n=322)	30 – 39 (n=257)	40 + (n=71)	
Drawings of men having sex (A)	63	57	63	71	77	0.003
Pictures of penis (A)	76	71	76	83	82	0.001
Images of men having group sex (A)	60	54	63	68	64	0.002
Images of male-female sex (A)	12	8	14	17	9	<0.001
Use of sexual formal language (A)	71	66	70	81	77	0.001
Finding a stable partner (T)	77	81	76	71	68	0.009
How to date men online (T)	56	51	54	63	74	0.001
Men´s sexual health (T)	90	87	90	97	93	0.005

^a we utilized a significance level of 0.05 with Bonferroni adjustments for multiple comparisons. **HS**: High school. **UTNG**: University/Technical non-graduate. **UTG**: University/Technical graduate. **(A)**: acceptability of images and specific language. **(T)**: topic of interest. **(S)**: service of interest.