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Sexual health knowledge and stigma in a community sample of HIV-positive gay, bisexual and other men who have sex with men in Puerto Rico

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Abstract

Gay, bisexual and other men who have sex with men (GBMSM) are at increased risk for HIV infection and disease progression. Also, HIV-positive GBMSM are among those less likely to be retained in care. In this study we analyzed sexual health knowledge (SHK) and various manifestations of stigma in a community sample of HIV-positive GBMSM in Puerto Rico. The sample reports overall low SHK scores, and lower score were associated with low educational attainment, unemployment, low income, and with self-identifying heterosexual participants. Almost half of the sample reported moderate to severe perceived gay stigma, 68.4% reported moderate to severe hidden-gay stigma, and 30.6% reported moderate to severe HIV-felt stigma. Further research is recommended to obtain culturally congruent information and develop interventions addressing the multiple layers of stigma in the social context where the interventions will be delivered.

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Keywords

Sexual health knowledge; stigma; MSM; Puerto Rico; HIV

Introduction

HIV continues to be a major global public health concern and is disproportionately affecting vulnerable populations, such as gay, bisexual and other men who have sex with men (GBMSM). In the Americas, GBMSM are one of the most affected populations by HIV/AIDS (Beyrer et al., 2012). In the Caribbean, HIV is mostly transmitted via sexual contact, and GBMSM are at an increased risk due to their social contexts (e.g., religion, *machismo*, *familismo*, among others; Rodríguez-Díaz, 2013). In Puerto Rico, a commonwealth of the United States geographically located in the Caribbean, the estimated HIV prevalence in the general adult non-institutionalized population is nearly 1.1% (Pérez et al., 2010) and 7.3% among GBMSM (Colón-López, Soto-Salgado, Rodríguez-Díaz, Suárez & Pérez, 2013); this is 13 times higher than among men who report only having sex with women as their risk factor for HIV infection (Colón-López et al., 2013). By 2014, of all the persons diagnosed with HIV/AIDS, 73% were men and about half of these (33%) were GBMSM - reflecting nearly 126% increase since 2002 (Puerto Rico Department of Health, 2014).

Paradoxically, GBMSM in Puerto Rico are among the least likely to benefit from health education and HIV prevention efforts (Clatts, Rodríguez-Díaz, García, Vargas-Molina, Jovet-Toledo & Goldsamt, 2012). This is in part caused by their sexual minority status, which remains a highly stigmatized identity in Puerto Rico. Similarly, and to some degree because of its early association with GBMSM, HIV infection is also highly stigmatized, and people with or at risk of HIV infection are subject to discrimination (Santiago-Rodríguez, Vargas-Molina, Rodríguez-Díaz, Ortiz-Sánchez, Velázquez & Jovet-Toledo, 2014). To contribute addressing the HIV epidemic among understudied and disenfranchised groups, in this study we analyzed the sexual health knowledge (SHK) and various manifestations of stigma in a community sample of HIV-positive GBMSM in Puerto Rico.

Stigma, understood as an attribute that is deeply discrediting within a particular social interaction (Goffman, 1963) and that encourages labeling, stereotyping, marginalization and status loss (Link & Phelan, 2001), might be a factor that could explain disparities in the sexual health of GBMSM. Stigma related to HIV status and sexual orientation has been associated with less preventive behaviors, like healthcare services seeking (Fay et al., 2011). Recent research from Puerto Rico has documented that HIV-positive GBMSM have suffered HIV and gay-related stigma in the form of violence and rejection that keep them from proper use of the health care system (Santiago-Rodríguez et al., 2014). Stigmatization is a social condition and not an inherited individual attribute. Therefore, stigma should be addressed from the structural social determinants that create and support this condition (Rivera-Segarra & Rodriguez-Madera, 2014). Addressing stigma as a social determinant of health includes, for example, assessing how stigma and other factors known to impact health care may interplay to increase social vulnerability and risk.

Although stigma has been known to be a detractor for accessing healthcare (Ortiz-Sánchez & Rodríguez-Díaz, 2014), adequate health literacy has been shown to provide effective tools for the management of HIV and HIV stigma in diverse populations (Swenson et al., 2010; Rivero-Méndez et al., 2010; Kalichman & Rompa, 2000). Kalichman & Rompa, (2000) documented that limited health literacy is associated with less knowledge and understanding of diseases and health risks. Similarly, health literacy and health-related knowledge are important factors in predicting a patient's ability to manage their condition, retention of treatment instructions, and adherence to medical regimens, among others. Researchers have suggested that HIV-positive GBMSM might have higher scores in HIV knowledge scales than those who are HIV-negative (Fay et al., 2011). This might be explained in part by the increased awareness resulting from a diagnosis with HIV infection. Further, for HIV-positive GBMSM inadequate health literacy increases the likelihood of engaging in risky health behaviors and may contribute to fuel HIV-related stigma by perpetuating misconceptions about HIV (Swenson et al., 2010).

Despite this evidence, to our knowledge, there is no data from research conducted among Spanish-speaking Hispanic/Latino GBMSM exploring the role of SHK or how it might be impacted by stigma. Based on the findings previously reported in the scientific literature and with the intention of further understanding the factors that may impact the health status of those disproportionately affected by the HIV epidemic, the purpose of this analysis was to assess the SHK of a community sample of Hispanic/Latino HIV-positive GBMSM in Puerto Rico and to explore its association with sociodemographic characteristics and different types of stigma.

Methods

Community-Based Participatory Research

Data were analyzed from an ongoing health promotion study being conducted since October 2013 through a community-academic partnership following a community-based participatory research (CBPR) approach. CBPR has provided for an equitable participation of community members and academic researchers throughout all phases of a research project (Minkler & Wallerstein, 2008). Following CBPR principles, community members, academic researchers and other stakeholders contributed in identifying the research needs among GBMSM in Puerto Rico. Official agreements between community collaborators, - mostly community-based and primary health care organizations providing HIV prevention and care services to GBMSM in Puerto Rico, and an academic institution- were established to mutually support research activities. A survey was developed to collect data following practices previously implemented to build and adapt culturally congruent data collection instruments (Rodríguez-Díaz, et al., 2014; Rodríguez-Díaz, Reece, Dodge, & Herbenick, 2009). All research collaborators contributed in the logistics for participants' recruitment, data collection, and analysis.

Recruitment and Data Collection

The study was limited to HIV-positive GBMSM who were sexually active in the past year and were 16 years of age or older. Participants were approached at the community partners'

sites by study personnel and invited to complete a three-questions screening instrument administered by an interviewer. Participants who met the inclusion criteria were recruited, and a written informed consent was obtained (N=138). The survey took an average of 60 minutes to be completed, and after completing the interview, participants received an economic incentive of \$20.00 in cash for their time.

The Spanish-language survey was administered at participating community sites by an interviewer assisted by a computer using QDS CAPI (Nova Research Company, 2015). The instrument facilitated the assessment of socio-demographic characteristics, SHK, and stigma regarding HIV-status and sexual orientation, among others domains.

Measurements

Socio-demographic characteristics such as age, education level, employment status, sexual orientation, AIDS diagnosis and years living with HIV were assessed using questions developed by the research team and previously used among similar populations (Jovet-Toledo, Clatts, Rodríguez-Díaz, Vargas-Molina, & Goldsamt, 2014; Rodríguez-Díaz, Collazo, Dodge, Román-Rivera, Candelaria-Rosa, Colón-Colón, & Herbenick, 2014; Rodríguez-Díaz, Jovet-Toledo, Ortiz-Sánchez, Rodríguez-Santiago, & Vargas-Molina, 2015).

Sexual health knowledge was assessed using a culturally congruent adaptation of the Sexual Health Knowledge Questionnaire (SHKQ) for HIV+ GBMSM developed by Vanable and colleagues (2011). This scale includes 18 true-false items to assess domains related to behavioral risk such as co-infection (i.e. Having an undetectable viral load eliminates the chance that a person with HIV will infect a sexual partner), sexually transmitted infections (STI) (i.e. Among gay men, Hepatitis A is transmitted through rimming (oro-anal contact)), and sexual practices (i.e. It is a good idea to use Vaseline or baby oil with latex condoms). The cultural adaptation of this scale followed a participatory expert panel model (Sousa & Rojjanasrirat, 2010) with bilingual scientists with expertise in HIV and sexuality research and members of the community. This process includes translation and cultural adaptation, revision of the translation, back translation and validation. This is an approach to culturally adapt research measures previously used by the research team (Rodríguez-Díaz et al., 2009; Rodríguez-Díaz et al., 2014).

HIV-felt stigma was measured using an adaptation of the HIV-felt stigma scale (Berger, Ferrans & Lashley, 2001) previously used among people with HIV in Puerto Rico (Jimenez et al., 2010). The 17-item scale has a response range from 17-68 and some of the items are: “I feel ashamed of having HIV”, “I feel guilty of having HIV” and “I would do anything to keep my HIV as a secret”.

Perceived and hidden gay stigmas were assessed using the scale developed and tested by Ramirez-Vallés and colleagues (2010). This 20-item scale uses a Likert-like response system, and the range of potential responses goes from a minimum of 20 to a maximum of 80. The scale is divided in a 10-item measurement of perceived stigma for sexual orientation, as well as a 10-item measurement for hidden stigma. Perceived gay stigma questions included “I have lost friends after letting them know I'm gay or bisexual”, and

Hidden gay stigma had questions like “I’m very careful to who I let know about me being gay or bisexual”.

Analyses

Using SPSS v22, frequencies and means were calculated and used to describe the sample; and ANOVA, t-tests, and Pearson correlation, were used to measure statistically significant bivariate associations. Multivariate linear regression analysis was used to test the independent contribution of each variable while adjusting for the other variables in the model. The Human Research Subjects Protection Office of the University of Puerto Rico-Medical Sciences Campus approved all study procedures.

Results

As included in Table 1, the mean age for the sample (N=138) was 38.4 (SD=11.2) years and ranged between 20 and 68. Because it was an inclusion criterion, all participants had HIV or AIDS diagnosis. Participants reported been living with HIV for an average of 10.0 (SD=7.8) years and 15.2% have been diagnosed with AIDS at some point in their lifetime. The vast majority were born in Puerto Rico (89.1%) and lived in the San Juan Metropolitan Area (83.3%). Nearly half of the sample was unemployed (46.4%). More than two-thirds of the sample (68.6%) lived below the poverty levels as established by the United States Census Bureau (2014) and 84.7% of the sample self-identified as gay or bisexual.

The mean score for the SHKQ ($\alpha=0.58$) in the sample was 11.2 (SD=2.7) of a possible maximum score of 18. As for the knowledge domains of this questionnaire, the two items with the highest proportion of correct answers were those associated with HIV co-infection and STIs. On the other hand, the two items with the lowest proportion of correct answers were those associated with sexual practices and HIV, with special emphasis on drug resistant re-infection. For example, the majority of the participants (92.8%) recognized the need for condom use in seropositive concordant couples; yet few participants (2.9%) reported knowing that re-infection with another strain of HIV worsens the health of a person with HIV.

Further, only a third of these men (37.7%) recognized that among GBMSM, Hepatitis A can be transmitted through oro-anal contact. Also, almost half of the sample (43.5%) was not aware that having an undetectable viral load reduces the risk of transmitting HIV. Similarly, almost a third (63.8%) of the sample recognized seropositioning as a risk factor for HIV transmission. Finally, 60.1% of research participants documented knowing that co-infection with another STI might increase the chance of HIV transmission.

Almost half of the sample (45.4%) reported moderate to severe perceived gay stigma, and more than two-thirds (68.4%) reported moderate to severe hidden gay stigma ($\alpha=0.88$). Also, nearly a third (30.6%) of the sample reported moderate to severe HIV-felt stigma ($\alpha=0.85$).

After multivariate analysis (See Table 2), sexual health knowledge was not found to be significantly associated with age, AIDS diagnosis, gay-related stigma or HIV-felt stigma.

Nonetheless, sexual health knowledge was significantly associated with education level (p -value=0.001), unemployment status (p -value=0.007), income (p -value=0.019) and sexual orientation (p -value<0.001). After controlling for these variables, a statistically significant difference in the sexual health knowledge was observed by sexual orientation (p -value=0.003); with participants who self-identified as heterosexual showing lower scores on the SHKQ. Income and unemployment were not statistically associated with SHK.

Discussion

In general, this sample of GBMSM in Puerto Rico had low levels of SHK and high levels of stigma; both gay-related and HIV-felt stigma. These findings are consistent with previous reports of scales with similar domains among GBMSM in the US (Swenson et al., 2010; Wagenaar et al., 2012; Pando, et al., 2013; Fay et al., 2011). However, SHK scores in our study sample were slightly higher than those reported by Vanable and colleagues (2011). No additional studies using the SHKQ were found.

HIV-felt stigma scores were over four times higher than previous reports among Hispanic/Latino men in Puerto Rico (Jiménez et al., 2012). Also, higher levels of gay-related stigma were observed when compared to those reported among Hispanic/Latino GBMSM in the United States (Wohl et al., 2013). These high levels of stigma may have had an impact in the associations and correlations with other variables analyzed. For example, SHK was found not to be associated with age, time since HIV diagnosis or stigma (gay or HIV-related stigmas). However, it was found to be associated with education level, employment status, income, and sexual orientation, and in the multivariate analysis, sexual orientation was the one construct that remained associated with SHK.

While the relatively high levels of multiple sources of stigma may have impacted the relationship between SHK and stigma, the fact that sexual orientation remained statistically significant after controlling for other variables might be an indication of the need to better understand the role of sexual self-identification when Hispanic/Latino men access and use health care services. Likewise, and not surprisingly, educational level, employment status, and income should be considered when addressing the needs of minority GBMSM in order to facilitate health-promoting practices and increase their ability to identify, access, and properly use HIV-related services.

Both higher and lower scores of the SHKQ show the importance of a continuous post-HIV diagnosis health education. Having higher scores on the HIV co-infection and other STIs domain might be an indicator of where most of the post-diagnosis educational emphasis of HIV services has focused among men in the study sample. However, and considering the complexity of an HIV diagnosis, the fact that the lower scores pertained to the domains related to sexual practices and HIV with special emphasis on drug resistant re-infection, might also shed light on the health education needs of HIV-positive GBMSM in Puerto Rico. This is particularly important considering that a recent study in Puerto Rico reported that among a sample of males in the island, 33.1% have engaged in any type of oral sex (including rimming) with other men in their lifetime and 20.8% in the last 90 days (Rodríguez-Díaz et al., 2014).

Findings should be considered within study's limitations. Data were derived from a community sample of HIV-positive GBMSM who willingly participated in the study and self-reported information. Consequently, they may have been more inclined to answer questions related to sexuality and to share information that couldn't be validated or that represented social desirability. Therefore, findings are not generalizable to HIV-positive GBMSM in Puerto Rico or elsewhere. The cross-sectional nature of the study didn't allow assessing changes over time, which might represent a limitation. Also, as participants were mostly recruited from and engaged in care at the community level, clustering effect might be a bias in the analysis.

Because of the limited interventions being implemented targeting Hispanic/Latino GBMSM, these findings may reflect the personal and social determinants that should be taken into consideration when developing HIV health education and health promotion interventions for these populations. Addressing stigma from a social determinants of health framework is consistent with targeting the factors that are impacting the HIV continuum of care which are also those producing more health disparities among those affected by the epidemic (Hall et al., 2013). Further research should explore the role of health literacy in HIV-related knowledge, SHK, and in the decision making process of sexual practices so adequate sexual health promotion interventions can be created. Assessment of knowledge areas (sexual practices and HIV, co-infection and STIs) should be taken into consideration in the development of interventions to address SHK among Spanish-speaking HIV-positive GBMSM. It is recommended that future health education interventions address issues like infectivity and co-infection with other drug-resistant HIV strains and other STIs, particularly Hepatitis. Similarly, other health promotion interventions are encouraged, particularly those which combine strategies and address stigma layering and its impact on the continuum of HIV care. This may represent a call for changes in policies and practices currently in place impacting the HIV services been provided to Hispanic/Latino GBMSM.

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Table 1

Association of selected variables and sexual health knowledge in a sample of HIV-positive GBMSM in Puerto Rico

Variable	N	%	SHK		p-value
			μ	SD	
Age group					0.589
17-32	46	33.3	11.5	2.3	
33-48	63	45.7	11.0	3.0	
49 or more	29	21.0	11.0	2.8	
Diagnosed with AIDS	21	15.2	11.9	2.0	0.189
Place of birth					0.569
Puerto Rico	115	89.1	11.2	2.7	
Non-Puerto Rico	15	10.9	10.8	3.2	
Area of Residence					0.879
San Juan Metro	115	83.3	11.2	2.8	
Non- Metro	23	16.7	11.3	2.5	
Education Level					0.001
High School or less	58	42.0	10.2	3.2	
Some College or more	80	58.0	11.9	2.1	
Exclusively Unemployed					0.007
Yes	64	46.4	10.5	3.0	
No	74	53.6	11.8	2.3	
Income					0.019
None	34	24.8	10.8	2.5	
\$1 – \$9,999	60	43.8	11.0	2.8	
\$10,000 – \$19,999	22	16.1	11.0	2.8	
\$20,000 or more	21	15.3	12.9	2.3	
Sexual Orientation					<0.001
Heterosexual	19	13.8	8.9	4.3	
Gay/Homosexual	87	63.0	11.7	2.1	
Bisexual	30	21.7	11.2	2.3	
Perceived Gay Stigma					0.987
None	33	25.4	11.5	2.1	
Mild	38	29.2	11.4	2.2	
Moderate	29	22.3	11.6	2.5	
Severe	30	23.1	11.3	2.6	
Hidden Gay Stigma					0.294
None	11	8.5	12.5	1.1	
Mild	30	23.1	11.6	2.5	
Moderate	64	49.2	11.4	2.3	
Severe	25	19.2	11.0	2.3	
HIV-felt Stigma					0.311

Variable	N	%	SHK		p-value
			μ	SD	
None	41	30.6	11.8	2.6	
Mild	52	38.8	10.7	2.9	
Moderate	31	23.1	11.3	2.7	
Severe	10	7.5	11.4	2.9	

	μ	SD	R	p-value
Years Living with HIV	10.0	7.8	-0.135	0.113
Age at HIV Diagnosis	28.4	8.6	0.061	0.477

Values in bold represent statistical significance (p<0.05)

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Table 2

Multivariate analysis of selected variables and sexual health knowledge in a sample of HIV-positive GBMSM in Puerto Rico

	B	Std. Error	p-value
Education	0.840	0.495	0.092
Unemployed	-0.311	0.491	0.528
Income	0.244	0.223	0.276
Sexual Orientation	-2.093	0.665	0.003

Values in bold represent statistical significance ($p < 0.05$)

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