Published in final edited form as:

AIDS Care. 2015 June ; 27(6): 772–776. doi:10.1080/09540121.2014.998611.

Factors associated with HIV stigma and the impact of a non-randomized multi-component video aimed at reducing HIV stigma among a high risk population in New York City

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Abstract

We examined characteristics associated with HIV stigma and evaluated a multi-component video designed to normalize HIV and reduce HIV stigma. Three pharmacies located in heavy, drug-active neighborhoods in New York City and registered to sell non-prescription syringes were trained to recruit their non-prescription syringe customers who inject drugs and their under/uninsured customers. Syringe customer participants were trained to recruit up to three of their peers. As part of a larger intervention to increase HIV testing, participants in two of three study arms viewed the “Health Screenings for Life” video and were administered pre/post video surveys capturing HIV stigma. Participants in the non-video arm were administered one assessment of HIV stigma. Log-binomial regression with GEE to account for clustering of peer networks was used to: 1) determine factors associated with HIV stigma, and 2) determine differences in HIV stigma by study arm. A total of 716 participants were recruited. Factor analyses showed HIV stigma measures loading on two factors: HIV blame and HIV shame. After adjustment, HIV blame was positively associated with younger age (PR: 1.24, 95% CI: 1.07–1.43) and inversely associated with educational attainment (PR: 0.66, 95% CI: 0.58–0.76) and employment (PR: 0.76, 95% CI: 0.60–0.96). HIV shame was inversely associated with educational attainment (PR: 0.75, 95% CI: 0.62–0.92), HIV-positive status (PR: 0.60, 95% CI: 0.39–0.92), injecting drugs (PR: 0.72, 95% CI: 0.54–0.94) and was positively associated with multiple sex partnerships (PR: 1.24, 95%

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Disclosure Statement: There are no conflicts of interest to disclose.

CI:1.01–1.52). Those who viewed the video were also less likely to report HIV blame and HIV shame, post-video, compared to those in the non-video arm. These data provide evidence of an association between HIV stigma and lower SES groups, and between HIV stigma and HIV sexual risk. These data also provide evidence that a multi-component video aimed at normalizing HIV may assist in reducing HIV stigma in heavy, drug-active neighborhoods.

Keywords

HIV/AIDS; HIV stigma; HIV risk behaviors; interventions; New York City

Introduction

HIV stigma as a barrier to HIV prevention and treatment has been documented. Targeting norms, attitudes, and views has reduced HIV risk behavior in different subgroups (Dushay, Singer, Weeks, Rohena, & Gruber, 2001; Jones et al., 2008; Kelly et al., 1992, 1997); however, interventions specifically targeting HIV stigma are lacking domestically (Brown, Macintyre, & Trujillo, 2003; Heijnders & Van Der Meij, 2006; Mahajan et al., 2008; Stangl, Lloyd, Brady, Holland, & Baral, 2013). Furthermore, studies that measure HIV stigma in vulnerable Black and Latino groups are scant. Identifying these factors is necessary to develop community- and culturally-based interventions that promote HIV prevention, care, and treatment outcomes by decreasing HIV stigma.

To address the factors surrounding HIV stigma in disadvantaged communities, we developed a comprehensive video, entitled “Health Screenings for Life,” (HSFL) to help ease HIV stigma. The purpose of this analysis is to 1) identify socio-demographics and HIV risk behaviors associated with exhibiting HIV stigma; and 2) to compare HIV stigma among those who viewed the video to those who did not.

Methods

Study Design

This analysis utilizes data from the Pharmacists as Resources Making Links to Comprehensive Testing Services “PHARM-Link Services” study, a New York City (NYC)-based intervention among pharmacies registered with New York State’s (NYS) Expanded Syringe Access Program (ESAP), which allows pharmacies to sell non-prescription syringes to persons who inject drugs (PWID). Recruitment has been described elsewhere (Rivera, DeCuir, Crawford, Amesty, & Lewis, 2014). In brief, pharmacy staff were trained to recruit their non-prescription syringe customers who inject drugs and their under/un-insured pharmacy customers for study participation.

Informed by social cognitive theory, the HSFL video was developed to: 1) to normalize HIV and HIV testing, 2) increase education about HIV and HIV testing, and 3) promote HIV testing and HIV status awareness. The ten-minute video consisted of fictionalized scenarios of individuals receiving different preventative screening tests (i.e. blood pressure, glucose, cholesterol) and included a testimonial from a real-life advocate living with HIV to encourage relate-ability and normalization of these issues.

Three pharmacies were enrolled into the study. Participants in two *Intervention* pharmacies completed a pre-video survey that included an HIV stigma assessment, viewed the video, and then repeated the HIV stigma assessment. Participants in the *Control* pharmacy completed one survey and did not watch the video. During the study visit, research assistants obtained informed consent and then administered an Audio Computer Assisted Self-Interview that ascertained socio-demographics, sex and drug risk behaviors, and HIV stigma. In addition to pharmacy staff recruitment, non-prescription syringe customer participants who reported injecting drugs in the past six months were allowed to recruit up to three of their peers for the study spanning October 2010 through March 2012. Institutional review boards at Columbia University Medical Center and the New York Academy of Medicine approved this study.

HIV stigma

Dimensions of HIV stigma were measured using a 7-item scale validated by USAID among a community sample in Tanzania (Nyblade & Kerry, 2006); these measures are shown in Table 1. Responses ranged from “Strongly Disagree” to “Strongly Agree” on a 5-point Likert scale. Since our study was conducted in drug active neighborhoods, the original item ‘It is women prostitutes who spread HIV in the community’ was replaced with ‘People who have HIV use illegal drugs’.

Factor analyses were conducted to determine the number of dimensions underlying the items and to ensure the stability of scale properties across assessments. At both time points, exploratory factor analyses revealed that the items loaded on two factors: HIV blame (attitudes related to blaming or judging HIV-positives for their illness) and HIV shame (attitudes related to feeling ashamed to be associated with HIV-positives), consistent with the USAID report. Confirmatory factor analyses suggested that the psychometric properties of the items remained consistent. Factor analyses were conducted in *Mplus* 6.1 (Muthen & Muthen, 2010).

In accordance with USAID recommendations, HIV blame and shame were dichotomized (endorsing 1 item vs. none). Cronbach’s alphas were 0.65 (pre-video) and 0.67 (post-video) for HIV blame and 0.70 (pre-video) and 0.73 (post-video) for HIV shame.

Statistical analysis

We examined baseline HIV stigma by socio-demographics and HIV risk behaviors. To examine video impact, pre-video differences in HIV stigma were first compared by study arm. Then, post-video HIV stigma measures in the intervention arm was compared to the HIV stigma measures in the control arm, after adjusting for variables that were significantly associated with baseline HIV stigma measures. For all analyses, log-binomial regression was used with generalized estimating equations to account for the clustering of index PWID and their recruited peers. Data analyses were performed using SAS 9.3.

Results

A total of 716 participants were enrolled. The sample was mostly Hispanic/Latino (50.1%) or Black (36.0%) and older than 45 years (54.6%). A little less than half (46.7%) currently

used drugs and a fifth of the sample were PWID. Exhibiting HIV blame was associated with younger age, lower educational attainment, and unemployment. Exhibiting HIV shame was associated with lower educational attainment, unemployment, HIV-positive status, being a PWID, and having multiple sex partners (Table 2).

There were no pre-video differences in HIV stigma by arm (Table 3). When comparing the intervention arm post-video measures to the control arm measures, those in the intervention arm were significantly less likely to report both dimensions of HIV stigma, after adjustment.

Discussion

These data highlight evidence of HIV stigma operating among a high-risk population, particularly among those with lower SES. These data also support a positive association between HIV stigma and sexual risk, and protective associations between HIV stigma and drug use risk, and HIV-positive status. We identified noteworthy evidence that HIV stigma was lower among those who viewed HSFL video compared to those who did not.

Our finding that low education level and unemployment were associated with HIV stigma is consistent with the literature (Darrow, Montanea, & Gladwin, 2009; Lentine et al., 2000) and reinforces the need for targeted efforts in low socioeconomic populations. Those with lower SES are more likely to have inaccurate beliefs regarding HIV transmission (Herek, Widaman, & Capitanio, 2005) which could contribute to stigma. Although less is known about the association between age and HIV stigma, our finding that those that were younger were more likely to exhibit stigma may be due to limited knowledge about the disease. This stresses the need for interventions to relay basic HIV knowledge.

The association between sexual risk and exhibiting HIV stigma has been understudied in the US. Burkholder et al. proposed that those who stigmatize HIV-positives distance themselves from that group (Burkholder, Harlow, & Washkwich, 1999). This distancing can cause an individual to feel that he/she is at low risk of getting the disease (Burkholder et al., 1999). Consistent with the behavioral motivation hypothesis (Brewer, Weinstein, Cuite, & Herrington, 2004), those who view themselves at low risk for a disease may be less likely to take preventative measures against the disease (Brewer et al., 2004). Risk perception may mediate the relationship between HIV stigma and sexual risk and should be explored. In terms of drug use risk, PWID had reduced HIV shame which may be explained by the practice of injecting drugs being so highly stigmatized that PWID may feel less inclined to stigmatize others. Additionally, given the high prevalence and historical burden of HIV among PWID, PWID may have more HIV-positive peers, feel more closely related to the disease than non-drug users, and be more informed about HIV (Amesty, Rivera, & Fuller, 2011; Des Jarlais et al., 2004; Fuller, Ford, & Rudolph, 2009). The same association was found when comparing HIV-positives to HIV-negatives in this reported study sample. HIV-positives may be more sensitive to HIV-related issues and may have accepted HIV as a chronic disease as opposed to a death sentence of which they are ashamed, compared to HIV-negatives. There was no relationship between risk behaviors and HIV blame and there is a need to better understand this.

We have preliminary evidence of the HSFL video reducing HIV stigma in our sample. The video impact could be due to the following strategies: 1) normalization of HIV by portraying it as a chronic disease and discussing the importance of HIV testing alongside other common preventative screenings, 2) vicarious contact with an HIV-positive, and 3) de-stigmatization of injection drug use by portraying a PWID character in a non-stereotypical manner. A recent review of HIV stigma reduction interventions reported that no intervention strategy to date had targeted other stigmas beyond HIV stigma (Stangl et al., 2013). These results provide important preliminary evidence of the effectiveness of utilizing these multiple strategies for HIV stigma reduction among high risk groups.

These results are subject to some limitations. The examination of factors associated with HIV stigma is cross-sectional and causation cannot be inferred. Only an immediate post-intervention effect was determined with respect to video impact which would have been strengthened with additional measures overtime. Also the reliability of the HIV blame measure was less than 0.70 at both time points and could benefit from more in-depth study on how these measures are constructed. Finally, generalizability is limited to the NYC population. However, given these limitations, our analysis is one of the few to examine factors associated with having HIV stigma among a heavy, drug-using urban sample in the US.

We have shown that HIV stigma is prevalent among an urban high risk population and have provided early evidence of an intervention strategy that could potentially help alleviate the burden of HIV stigma. Specifically, the use of multi-component video strategy targeted to high risk groups should be scaled up and explored with more robust, prospective research methods among more heterogeneous groups.

Acknowledgements

We thank our study participants for their time and research staff for their data collection efforts.

Funding: This work was supported by the National Institutes on Drug Abuse under Grant 1RC1DA028284 and the National Institute on General Medical Sciences under Grant 5R25GM06245410.

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Table 1

Prevalence of pre- and post-video HIV-stigma items, PHARM-Services, 2010–2012 (n=716)

	Pre-video n (%)	Post-video* n (%)
<i>HIV blame</i>	373 (52.1)	203 (43.8)
HIV is a punishment from God	74 (10.3)	36 (7.8)
HIV is a punishment for bad behavior	171 (23.9)	87 (18.8)
People with HIV are promiscuous	205 (28.7)	113 (24.5)
People with HIV use illegal drugs	230 (32.2)	119 (25.8)
<i>HIV shame</i>	265 (37.0)	123 (26.9)
I would be ashamed if I were infected with HIV	238 (33.3)	110 (23.8)
I would be ashamed if someone in my family had HIV	91 (12.7)	47 (10.2)
People with HIV should be ashamed of themselves	67 (9.4)	45 (9.7)

* Among those in video arms only (n=464)

Table 2

Adjusted associations with HIV stigma (n=716); PHARM-Services, 2010–2012.

	HIV blame	HIV shame
	PR (95% CI)	
Age		
< 45 years	1.24 (1.07–1.43) **	--
45 years	1.00	--
Education level		
High school	0.66 (0.58–0.76) ***	0.75 (0.62–0.92) **
< High school	1.00	1.0
Employment		
Employed	0.76 (0.60–0.96) *	0.56 (0.39–0.92) **
Not employed	1.00	1.0
HIV status		
Positive	--	0.60 (0.39–0.92) *
Negative/unknown	--	1.0
Multiple sex partners^a		
No	--	1.24 (1.01–1.52) *
Yes	--	1.0
Type of drug use^b		
Injection	--	0.72 (0.54–0.94) *
Non-injection	--	0.87 (0.69–1.09)
None	--	1.0

^a past 2 months,^b past 3 months*
p< .05,**
p< .01,***
p<0.001

Table 3

Adjusted differences in pre- and post-HIV stigma (n=716); PHARM-Services, 2010–2012.

	HIV blame ^a	HIV shame ^b
PR (95% CI)		
Pre-video vs. control	0.97 (0.85–1.11)	0.91 (0.75–1.10)
Post-video vs. control	0.80 (0.69–0.93) **	0.66 (0.53–0.81) ***

**
p<.01,***
p<0.001^a adjusted for age, education and employment^b adjusted for education, employment, HIV status, multiple sex partners, and drug use type