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## The Provider Perception Inventory: Psychometrics of a Scale Designed to Measure Provider Stigma about HIV, Substance Abuse, and MSM Behavior

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### Abstract

Non-gay identified men who have sex with men and women (NGI MSMW) and who use alcohol and other drugs are a vulnerable, understudied, and undertreated population. Little is known about the stigma faced by this population or about the way that health service providers view and serve these stigmatized clients. The Provider Perception Inventory (PPI) is a 39-item scale that measures health services providers' stigma about HIV/AIDS, substance use, and MSM behavior. The PPI is unique in that it was developed to include service provider stigma targeted at NGI MSMW individuals. PPI was developed through a mixed methods approach. Items were developed based on existing measures and findings from focus groups with 18 HIV and substance abuse treatment providers. Exploratory factor analysis using data from 212 health service providers yielded a two dimensional scale: 1) Individual Attitudes (19 items), and 2) Agency Environment (11 items). Structural equation model analysis supported the scale's predictive validity (N=190 sufficiently complete cases). Overall findings indicate initial support for the psychometrics of the PPI as a measure of service provider stigma pertaining to the intersection of HIV/AIDS, substance use, and MSM behavior. Limitations and implications to future research are discussed.

### Introduction

Non-gay identified men who have sex with men and women (NGI MSMW) and who abuse substances are an understudied and underserved population. Research has identified significant racial disparities in HIV prevalence between Black MSM and their White counterparts (Millett, Flores, Peterson, & Bakeman, 2007). Contextual factors like incarceration and poverty contribute to this disparity (Blankenship, Smoyer, Bray, & Mattocks, 2005; Friedman, Cooper, & Osborne, 2009; Gaiter & OLeary, 2010; Khan et al., 2008). It is critical that substance abuse and HIV prevention services reach this population. However, NGI MSMW may not feel safe disclosing same-sex behavior to health service providers. Expectations of a homophobic reaction can form a barrier to prevention and treatment-seeking behavior among MSM, even as internalized homophobia is associated with substance use and risky sexual behavior (Peterson & Jones, 2009; Shoptaw et al., 2009). Stigma among substance abuse and HIV prevention providers can aggravate these fears in NGI MSMW and reduce the likelihood these men will seek and receive services

(Murray, 2001; Valdiserri, 2002; Washington & Brocato, 2011). Little is known about the way providers perceive NGI MSMW and how different types of stigma may interact in shaping providers' perceptions of their clients.

Recently, scholars have turned attention to service provider stigma (Abell, Rutledge, McCann, & Padmore, 2007; Rutledge, Whyte, Abell, Brown, & Cesnales, 2011; Stein, 2008; Varas-Diaz & Neilands, 2009). Most of this research has focused on measuring HIV stigma among service providers. Varas-Diaz (2009) has the only measure that includes stigma related to substance abuse and same sex behaviors, yet this scale has not been used with English speaking providers. These measures also do not include service providers' stigma toward NGI MSMW. Because this population is both stigmatized and at high risk for HIV/AIDS (Cloete, Simbayi, Kalichman, Strebel, & Henda, 2008), it is important to increase knowledge about how stigma among service providers may hinder this population's willingness to disclose their same sex behavior to receive the prevention and treatment services they need.

This short report presents the psychometric properties of a novel measure of service providers' awareness of and attitudes toward NGI MSMW and the various dimensions of oppression they face. The scale development was informed by stigma, oppression, and labeling theories (Goffman, 1963; Goffman, 1959; Pescosolido, Martin, Lang, & Olafsdottir, 2008; Young, 1990) as well as Scambler's (2009) hidden distress model.

## Methods

### ITEM DEVELOPMENT

**Participants**—After Institutional Review Board approval, a purposive sample of 18 HIV and substance abuse service providers was recruited through the New Jersey HIV Planning Group and the Training Institute at the National Development and Research Institutes, Inc., in New York City. Participants were ethnically diverse, more than half were men, and they worked in both residential and outpatient drug treatment as well as harm reduction and HIV outreach and testing.

**Procedures**—Two focus groups were conducted by doctoral level researchers, one in New York City and one in New Brunswick, NJ. Group discussions lasted one hour and were digitally recorded and transcribed. Participants responded to open-ended questions regarding their experiences serving NGI MSMW and their beliefs about NGI MSMW needs. To develop an instrument operationalizing service provider stigma about NGI MSMW, four master and doctoral level researchers conducted thematic analysis of the focus group transcripts (Braun & Clarke, 2006). Three researchers independently developed statements under each theme. The fourth researcher combined the 3 lists, deleting repeated items and adding items from existing scales about HIV stigma and homonegativity (Siebert, Chonody, Rutledge, & Killian, 2009; Varas-Diaz & Neilands, 2009). Four researchers, working independently, deleted confusing, repeated, or irrelevant statements. In a final meeting, the researchers compared their work and achieved 100% consensus on approving a questionnaire with a total of 198 close-ended questions distributed across 5 themes: 1) Cultural Notions of Masculinity; 2) Stigma; 3) Culturally Relevant Service provision; 4) Community Outreach; and 5) Disclosure. This questionnaire was pilot tested by 3 service providers in Newark, NJ who were knowledgeable about NGI MSMW and further reduced the number of items to 133.

## INTERNAL CONSISTENCY

**Participants**—Participants were recruited via an e-mail message sent to substance abuse and HIV services agencies throughout New Jersey and New York City (N=212). No incentive was provided for participation. See demographics in Table 1.

**Procedure**—All data was collected anonymously online between July and October of 2011 via SNAP software. Participants completed an eight-item demographic questionnaire and responded to all attitude items on a 6-point Likert scale with responses ranging from 1 = completely disagree to 6 = completely agree.

**Measures**—The survey included 141 items, including 8 demographic questions, and took approximately 40 minutes to complete. Most of the items were derived from focus group data (81 items). The remaining 52 items were selected from the Spanish HIV/AIDS Stigma Scale (Varas-Diaz & Neilands, 2009) and the Index of Attitudes toward Homosexuals (Siebert et al., 2009).

**Analysis**—Before conducting our Exploratory Factor Analysis (EFA), we examined missing data patterns and mean-imputed variables with 20% of values missing at random or less. Because later analyses discovered significant findings for religiousness and Hispanic ethnicity, values for religiousness and race were not imputed. After we left out variables with more than 20% missing values and non-random missing patterns, 112 of the original items were included in the initial EFA. Items with communalities below .3 were dropped and the EFA rerun. For the final EFA, we used principal axis factoring because responses to most items were not normally distributed, and Oblimin (oblique) rotation because factors were expected to be correlated. (Costello & Osborne, 2005).

After settling on subscale components, we conducted a single structural equations model (SEM) in Mplus 6.0 with latent indicators for the subscales as dependent variables and provider characteristics as independent variables. The purpose of this was to simultaneously confirm the PPI's factor structure and test the hypothesis that the scale is sensitive to differences among providers.

## Results

### EFA AND RELIABILITY RESULTS

The final EFA solution included a total of 39 items across two dimensions: 1) Individual Attitudes (29 items,  $\alpha=.87$ ) and 2) Agency Environment (10 items,  $\alpha=.80$ ). The overall alpha for the PPI is .87 (see Table 2).

### NORMATIVE DATA AND PREDICTIVE VALIDITY

Descriptive statistics were conducted with the consistency testing sample. In the PPI, higher scores indicate higher levels of stigma. The overall scale may range from 1 to 234 (mean=77.9, SD=22.3). The Individual Attitudes dimension may range from 1 to 174 (mean=50.5, SD=17.5). Agency Environment may range from 1 to 60 (mean=26.4, SD=9.9).

The SEM final sample included 190 participants who had provided sufficiently complete data. Model fit was just within the boundaries of acceptable according to absolute measures of fit (RMSEA and SRMR) and unacceptable according to incremental measures (TLI & CFI); the latter ought to be mathematically forgivable because of the high Cronbach's  $\alpha$  for these scales, high number of scale components, and general exigencies of preliminary

studies, i.e., low sample size and random missing responses that come with uncompensated surveys.

Catholicism (vs. “other Christian”) religious identification and general religiousness were associated with less-tolerant individual attitudes, but not agency environment. Female gender, Hispanic ethnicity, and clinician (vs. case manager) provider type were not associated with individual attitudes but were associated with greater perception of stigma in the agency environment. The one provider characteristic associated with both higher individual-level stigmatizing attitudes and greater perception of stigma in the agency environment was identification as a substance abuse service provider.

## Discussion

Our analyses found two cohesive dimensions of provider perceptions, confirmed the two-factor structure of the provider perceptions inventory (PPI) and reliability of both subscales, and found the subscales to be both uncorrelated with each other after controls and uniquely related to different sets of provider characteristics. The PPI was designed to measure stigma among service providers toward NGI MSMW. Goffman (1963) describes stigma as a social process that discredits individuals with characteristics that do not conform to what society considers normal. Through socially constructed lenses, a stigmatized individual’s humanity and societal membership are called into question and he or she may be dehumanized and segregated socially (Crocker, Major, & Steele, 1998; Dovidio, Major, & Crocker, 2000). In the field of HIV prevention, provider stigma against NGI MSMW has been suggested as a potential barrier to HIV testing and treatment services, which in turn, contributes to the spread of HIV (National Research Council, 2010). Thus the PPI may be a powerful tool not only in identifying stigma but also informing the development of targeted sensitivity training for service providers.

## Limitations

Participants in this pilot study were skewed toward low levels of stigma; administering the same measure to a more diverse sample of providers might produce different results. Also, these data have the same limitations as any data set based on an uncompensated mail or internet survey, including response bias (i.e., toward those who were interested in the topic), random missing responses, response sets, and other symptoms of lack of participant engagement. Predictive validity testing results can only be used to support the scale’s sensitivity in detecting significant differences. Because this is not a representative sample, these results cannot be interpreted as population parameters, i.e., they do not support a claim that Catholics and those reporting higher religiosity are more likely to stigmatize HIV positive, substance using, and/or MSM/MSMW individuals. Further research is needed to continue to develop support for the scale and to further elucidate stigma among substance abuse and HIV service providers.

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Table 1: Demographics for internal consistency testing (N=212)

Variable	Mean or %
Age(mean(SD))	42(13)
Gender (%)	
Male	24
Female	75
Transgendered (Female to male)	1
Ethnicity: (% Hispanic)	22
Race: (%)	
White	59
Black	32
Asian	3
Native	1
Multiracial	5
Previous participation in diversity training: (%)	83
Religion: (%)	
No religion	25
Buddhist	1
Muslim	4
Protestant	3
Baptist	7
Jewish	6
Catholic	26
Christian	26
Other	2
Religiosity: (%)	
Not religious at all	22
Not very religious	38
Religious	30
Very religious	8
Extremely religious	2
Type of service provision: (%)	
Clinician	24
Case management	27
Prevention	15
Referral	1
Substance abuse	12
Nurse/ medical services	11
Research/ technical assistance/legal	10



**Table 2**

## Exploratory Factor Analysis Solution

Items	Provider Perceptions Inventory ( $\alpha = .87$ )	
	Individual Attitudes ( $\alpha = .80$ )	Agency Environment ( $\alpha = .87$ )
NGI MSMW deserve confidentiality in treatment. (R)	.323	
I would be upset if I learned that my brother or sister was homosexual.	.394	
Gay men are either feminine or on the "Down Low."	.438	
An HIV/AIDS positive individual is less productive than an HIV/AIDS negative individual.	.396	
There are a lot of people with HIV/AIDS that seek to infect others.	.367	
V_/lllvi o* People with HIV/AIDS should be penalized if they have unprotected sexual relations without revealing their health status.	.421	
Condoms should be provided in prisons. (R)	.300	
All people with HIV/AIDS should have equal access to health services, whether they can pay for them or not. (R)	.441	
I believe that communities can do more to normalize talking about sex. (R)	.473	
All people with HIV/AIDS should carry an HIV positive ID card in case they are taken to an emergency room.	.454	
Those who identify as bisexual are either confused or are in denial about their true sexuality.	.488	
The Health Department should have an updated registry with the first and last names of all the people with HIV/AIDS.	.460	
Real men don't show their emotions.	.380	
NGI MSMW have opposite-sex relations to "keep up appearances".	.381	
The image of people who ask for money at street lights makes me think that they have HIV/AIDS.	.537	
Due to the training that health professionals have it is easier for them to identify who has HIV/AIDS by looking at their bodies	.505	
There should be legislation to sterilize women with HIV/AIDS.	.578	
There should be legislation so that people with HIV/ AIDS cannot get married.	.594	
A person with HIV/AIDS gets tired faster than one that does not have it.	.437	
I would feel uncomfortable being seen in a gay bar.	.420	
Female partners of NGI MSMW are victims.	.351	
Having religious beliefs reduces the risks of getting HIV/AIDS.	.582	
Homosexuals are predominantly responsible for the HIV/AIDS epidemic.	.484	
The rights of people with HIV/AIDS should be limited so that they are <u>not</u> allowed to work in health scenarios.	.616	
There should be a law that forces people with HIV/AIDS to reveal their status to their sexual partners.	.478	



Items	Provider Perceptions Inventory ( $\alpha = .87$ )	
	Individual Attitudes ( $\alpha = .80$ )	Agency Environment ( $\alpha = .87$ )
I believe that safer sex practice should always be encouraged. (R)	.354	
A mother who has HIV/AIDS is a risk to her daughters/sons already born.	.388	
I would feel that I had failed as a parent if I learned that my child was gay.	.452	
Gay men are weak.	.533	
At my agency, NGI MSMW clients have access to information on safer sex and to barrier protection (like condoms. (R)		.437
In my agency we had training to help us be comfortable asking people about sex. (R)		.500
In my agency there is no safe space for NGI MSMW because homophobic peer pressure is very strong.		.636
Clients who have been incarcerated are probably having sex with other men.		.300
In my agency we encourage men to take incremental steps toward safer sex (e.g., try reducing number of partners or number of times they had unprotected sex; try oral sex instead of anal). (R)		.404
At my agency, there are adequate trainings offered to prepare providers for working with the NGI MSMW population. (R)		.662
At my agency, NGI MSMW clients feel comfortable participating in services. (R)		.666
At my agency, there are plenty of providers who are competent in serving the specific needs of NGI MSMW. (R)		.737
In my agency NGI MSMW groups did <u>not</u> work because NGI MSMW feared their confidentiality would be lost.		.522
At my agency, providers sometimes joke or talk disrespectfully about NGI MSMW clients behind their backs.		.319

Note: Loadings below .3 were not included. R means the item must be reverse scored.

**Table 3**

Standardized coefficients from structural equations model predicting PPI subscales from provider characteristics.

	<u>Agency environment</u>	<u>Individual attitudes</u>
Age (regression imputed)	−0.01	−0.01
Diversity training received	0.12	−0.09
Gender: Male	−0.40 *	0.07
Gender: Missing	0.23	0.11
Hispanic ethnicity	0.45 *	0.24
Race: Black	−0.17	0.04
Race: Other	−0.43 +	−0.23
Religion: None	0.03	0.42 +
Religion: Catholic	−0.26	0.39 *
Religion: Jewish	−0.24	0.07
Religion: Other	0.04	0.17
Religiosity	0.003	0.45 ***
Provider type: Clinician	0.71 **	0.14
Provider type: Prevention	−0.01	−0.33
Provider type: Substance	0.75 **	0.59 *
Provider type: Nurse/med	0.10	0.08
Provider type: Tech/research	0.19	0.20
Provider type: Other	0.62+	0.80 **
R-square	0.22 **	0.32 ***

Correlation between PPI subscales = −0.12,  $p > .05$

Model fit: CFI = .560, TLI = .535, RMSEA = .060, SRMR = .080

Higher scores on both subscales reflect greater intolerance. Reference categories: Gender: Female, Race: White, Religion: Other Christian, Provider type: Case manager. Valid n = 190.

$p < .10$

\*  
 $p < .05$

\*\*  
 $p < .01$

\*\*\*  
 $p < .001$ .