

HHS Public Access

Author manuscript *AIDS Behav.* Author manuscript; available in PMC 2021 July 01.

Published in final edited form as:

AIDS Behav. 2020 July ; 24(7): 2119–2129. doi:10.1007/s10461-020-02778-5.

An exploratory study of resilience, HIV-related stigma, and HIV care outcomes among men who have sex with men (MSM) living with HIV in Louisiana

Russell Brewer, DrPH^{1,2}, Kristina B Hood, PhD³, Mary Moore, MS⁴, Andrew Spieldenner, PhD⁵, Chris Daunis⁶, Snigdha Mukherjee, PhD⁷, Meta Smith-Davis⁸, Gina Brown⁹, Brandi Bowen¹⁰, John A. Schneider^{1,2}

¹University of Chicago, Chicago, IL, USA

²Chicago Center for HIV Elimination, Chicago, IL, USA

³Virginia Commonwealth University, Richmond, VA, USA

⁴Dillard University, New Orleans, LA, USA

⁵California State University-San Marcos, San Marcos, CA, USA

⁶CrescentCare, New Orleans, LA, USA

⁷Educational Commission for Foreign Medical Graduates, Philadelphia, PA, USA

⁸HIV/AIDS Alliance for Region Two, Baton Rouge, LA, USA

⁹Southern AIDS Coalition, New Orleans, LA, USA

¹⁰New Orleans Regional AIDS Planning Council, New Orleans, LA, USA

Keywords

Stigma; HIV; South; Resilience; MSM

INTRODUCTION

The achievement and sustainment of viral suppression among persons living with HIV (PLWH) is critical to improving the overall health of PLWH and preventing new HIV infections in the United States (US) (1–3). However, the various dimensions of HIV-related

Corresponding author: Russell Brewer, DrPH, MPH, University of Chicago, Department of Medicine, 5837 S. Maryland Avenue, MC 5065, Chicago, IL 60637, rbrewer@medicine.bsd.uchicago.edu. Contributors:

R. Brewer created the initial concept and served as principal investigator for the study. K. Hood and M. Moore conducted data analysis and contributed to the methods and results section. All other authors contributed to the introduction, methods, results, and discussion sections.

Conflict(s) of interest: Dr. Brewer currently serves as advisory to Gilead's Implementation Science Group and ViiV Healthcare's Accelerate Initiative.

Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Institutional Review Board approval was obtained for the study.

Informed consent: Informed consent was obtained from all interviewed participants in the study.

stigma continue to serve as major barriers to HIV care and treatment among PLWH (4, 5). HIV-related stigma has been described as a multidimensional phenomenon consisting of internalized (i.e., PLWH's endorsement and acceptance of the negative assumptions about their character because of their HIV status), anticipated (i.e., PLWH's expected negative treatment by others because of their HIV status), perceived (i.e., an individual's perception of the existence and degree of stigmatizing attitudes within a community), and enacted or experienced stigma (i.e., PLWH's actual experiences of discrimination, devaluation, and prejudice by others because of their HIV status) (5). Previous studies have shown that PLWH with higher levels of HIV-related stigma have poorer HIV medication adherence as well as reduced access and utilization of health and social services (6, 7).

Researchers have presented a useful conceptual framework (i.e., Framework for HIV-related stigma, engagement in care, and health outcomes) highlighting the mechanisms by which HIV-related stigma lead to poorer HIV care outcomes among PLWH (5). More specifically, they posit that the various forms of HIV-related stigma (i.e., internalized, anticipated, perceived, and enacted) operate through four main pathways to include interpersonal factors (e.g., disclosure, social support, isolation), psychological resources (e.g., tools, skills, and personal identities used by PLWH to cope with stressful situations), mental health (e.g., depression, anxiety), and stress/biological processes (e.g., stressful experiences such as HIV-related stigma, poverty, and trauma that produce stress responses within the body) to negatively affect HIV care outcomes among PLWH (5). Thus, understanding and responding to the various forms of HIV-related stigma and resulting mechanisms of action or consequences is critical to improving HIV care outcomes among PLWH (8). In the current study we focus on three dimensions of HIV-related stigma among a highly HIV impacted population (i.e., men who have sex with men).

Among men who have sex with men (MSM) who experience a disproportionate burden of HIV in the US (9), previous studies have documented high levels of HIV-related stigma as well as negative associations between HIV-related stigma and HIV care outcomes including avoidance of HIV care services, poor medication adherence, and reduced likelihood of viral suppression (10–19). The effects of HIV-related stigma may be even more pronounced for Black MSM in the US who may not only experience the various forms of HIV-related stigma based on their actual or assumed HIV status but stigmatization associated with other marginalized identities including race and sexual orientation (i.e., intersectional stigma) (5, 10, 17–21). For example, Bogart et al. showed a significant longitudinal association between racial discrimination and lower adherence among 152 Black MSM living with HIV (19). Previous studies have also documented racial discrimination among Black MSM from White MSM (20, 21), law enforcement (17), and homo-negativity from peers, family members, and Black churches (17).

Strengths-based approaches such as the study of resilience among MSM have emerged as important constructs in HIV research (22, 23). Resilience has been defined as a dynamic process where individuals are capable of positive adaptations and/or success within the context of adversity (24, 25). It has been utilized to develop a better understanding of the context, relationships, and processes that lead to a variety of positive health and

psychosocial outcomes (26, 27) such as improvements in HIV care outcomes despite negative experiences of adversity (e.g., HIV-related stigma). This process of positive adaptation in response to adversity may occur through the presence of: a) positive internal assets; and b) external resilience resources and responses in order to facilitate positive outcomes (27). Specific resilience resources and responses have been identified among MSM of color in the US in response to different forms of stigmatization (e.g., racism, homophobia, and HIV-related stigma) to include: 1) dismissing the stigmatization, 2) seeking social support from external resources (e.g., role models, friends, family members), and/or 3) direct or indirect confrontation, challenge, and/or self-advocacy (28–31). Furthermore, among Black MSM specifically, social-support seeking behavior is a common strategy utilized in response to racial discrimination (28, 30, 31).

In the current study, we focus on the resilience resources and responses of MSM living with HIV within the context of HIV-related stigma to include the utilization of available resources and their likelihood of challenging, educating, and/or confronting HIV-related stigma. Our study is exploratory in nature with no pre-defined hypotheses. However, our goal is to develop a greater understanding of resilience with the context of HIV-related stigma among MSM living with HIV in Louisiana with a specific interest in how these constructs may be more relevant for Black MSM.

Louisiana represents a high priority jurisdiction with more than 20,000 individuals living with HIV in the state and one of the highest HIV/AIDS case rates in the nation (32). Currently, Baton Rouge and New Orleans rank high in HIV/AIDS case rates compared with other large metropolitan jurisdictions (32). Our study of resilience within the context of HIVrelated stigma in Louisiana is particularly timely and important given that Southern states such as Louisiana are characterized by high racial bias, high levels of HIV-related stigma, and a disproportionate burden of HIV (33, 34). In addition to these social and epidemiological characteristics, Louisiana has structural conditions which may impact the resilience resources and responses of MSM. Poverty in Louisiana is high at 19.7%, the second highest in the country (32). High poverty rates are also linked to employment, education, access to services, and overall quality of life (32). Information gleaned from resilience-based studies such as ours could be used to inform the development of future interventions to improve HIV care outcomes among this population. Previous studies have utilized resilience-based constructs to inform HIV interventions (35). For example, Black MSM living with HIV in Chicago with a support confidant were significantly more likely to have three or more provider visits than Black MSM who did not have a support confidant (35).

In 2015, The Louisiana Public Health Institute served as the lead research institution for the Louisiana HIV Stigma Index Project (LA HSIP). However, this project was led by PLWH who were integral to planning, implementing, and developing future interventions to address HIV-related stigma. The LA HSIP was a 2-year community-based participatory research study aimed to: 1) document the impact of HIV-related stigma among PLWH in New Orleans and Baton Rouge via peer-led face-to-face interviews with a purposeful sample of three hundred (300) PLWH; 2) refer PLWH to medical care and supportive services during

participant interviews based on identified need; and 3) develop city-specific stigma reduction action plans based on the study findings.

METHODS

The overall methods of the Stigma Index Project, a global stigma initiative, have been described elsewhere (36). In brief, the LA HSIP was conducted from March 2015 to July 2017 in the New Orleans and Baton Rouge metropolitan statistical area (MSA). To be included in the study, participants had to: 1) self-report HIV positive status; 2) self-report that they were currently living in the New Orleans or Baton Rouge MSA; 3) self-report that they were at least 18 years of age; 4) be able to conduct the study in English; and 5) provide verbal consent. Potential participants were excluded if: 1) they had any condition that in the judgment of the research team made participation in the study unsafe, complicated interpretation of study findings, and/or otherwise interfered with achieving the parent study goals; and/or 2) were institutionalized (i.e., hospitalized or imprisoned).

Most participants were recruited from HIV service providers such as a community health center or AIDS Service Organization. Study participants completed a peer-assisted questionnaire with both closed and open-ended questions. Peers, also living with HIV, were recruited and selected by community-based organizations involved in either providing HIV services or serving as a planning body to provide culturally responsive health and supportive services for PLWH in the two study jurisdictions. Peers completed a three-day training that consisted of a project overview, questionnaire review, role play, how to secure informed consent, and ways to maintain subject confidentiality. Informed consent was obtained from eligible individuals prior to participation and the project was approved by an external institutional review board. Our study is limited to LA HSIP cross-sectional data with MSM participants living with HIV (N=110).

Study Measures

Demographic characteristics—Participants provided information about their race, city of residence, age, sexual orientation (i.e., gay, homosexual, or bisexual) or whether they had sex with other men, relationship status, education level, monthly income, insurance status, and employment history.

HIV-related stigma characteristics—Three dimensions of HIV-related stigma (i.e., anticipated, internalized, and enacted) and resulting consequences of enacted stigma were assessed in the study. These variables were adapted from existing measures (37). We created cut-off points within the different measures to differentiate levels of HIV-related stigma. We report reliability information in the results section.

Anticipated HIV stigma—Participants responded to an adapted six-item anticipated HIV stigma scale (37) that assessed their fears of experiencing a negative and/or discriminatory event in the last 12 months related to their HIV status to include being gossiped about, denied health care, physical threats, verbal threats, and social media threats. Response options were "yes" or "no". Items were summed to create a total anticipated HIV stigma score ranging from 0 to 6 with higher scores indicating greater anticipated stigma. Cut-off

points were determined using percentiles (i.e., 33rd and 66th percentiles). Scores less than 1 were categorized as low levels of anticipated stigma. Scores greater than 1 but less than 3 were categorized as moderate levels of anticipated stigma. Scores greater than 3 were categorized as high levels of anticipated stigma.

Internalized HIV stigma—Participants responded to an adapted eight-item internalized HIV stigma scale (37) that assessed their own negative thoughts and feelings associated with their HIV status in the last 12 months to include guilt, shame, blame, anger, low self-esteem, self-punishment, and suicidal ideation. Responses were categorized as "yes" or "no". Items were summed to create a total internalized HIV stigma score from 0 to 8 with higher scores indicating greater internalized stigma. Cut-off points were determined using percentiles (i.e., 33rd and 66th percentiles). Scores less than 2 were categorized as low levels of internalized stigma. Scores greater than 2 but less than 4 were categorized as moderate levels of internalized stigma.

Enacted HIV stigma—Participants reported whether they experienced any of the ten forms of discrimination and/or violations of rights in accessing work, housing, health and education services within the last 12 months as a result of their HIV status based on a modified enacted HIV stigma measure (37). Examples included denial of health care, denial of insurance, and denial of a job change or promotion. Response categories included 1-never to 4-often. Response options were recoded to 1-yes experienced discrimination or 0-no did not experience discrimination for each of the ten items. Items were summed to create a total enacted HIV stigma score ranging from 0 to 6 with higher scores indicating greater levels of enacted HIV stigma. Cut-off points were determined using percentiles (i.e., 33rd and 66th percentiles). Participants with overall scores of zero were categorized as experiencing low levels of enacted stigma. Participants with scores between 1 and 3 were considered experiencing moderate levels of enacted stigma. Participants with overall scores above 3 were categorized as having high levels of enacted stigma.

Consequences of enacted HIV stigma—Participants were asked to indicate whether they experienced any of eleven potential negative consequences within the last 12 months as a result of enacted HIV stigma to include depression, anxiety, income loss, withdrawal from friends and family members, skipped medications, increase drug and alcohol intake, and avoided health care (37). Participants were asked to select all of the experiences (if any) that had occurred. Items were summed to create a total score from 0 to 11 with higher scores indicating greater consequences of enacted HIV stigma. Cut-off points were determined using percentiles (i.e., 33rd and 66th percentiles). Scores less than 2 were categorized as low consequences of enacted HIV stigma. Scores greater than 2 but less than 5 were categorized as moderate consequences of enacted HIV stigma. Scores above 5 were categorized as high consequences of enacted HIV stigma.

Resilience—Participants responded to eight questions adapted from an existing resilience measure that assessed how they individually responded to HIV-related stigma within the last 12 months by challenging or educating someone who was stigmatizing or discriminatory against themselves as a result of their HIV status or another PLWH. They also responded to

whether or not they channeled community resources to help increase awareness and support for PLWH (37). Items were summed by the authors to create a total resilience score from 0 to 8 with higher scores indicating greater resilience in response to HIV-related stigma. We created cut-off points within the different measures to determine levels of resilience and report reliability information in the results section. Cut-off points were determined using percentiles (i.e., 33rd and 66th percentiles). Scores less than 3 were defined as low levels of resilience. Scores greater than 3 but less than 5 were considered moderate levels of resilience whereas scores above 5 were considered high levels of resilience.

Health and HIV care outcomes—Several health and HIV-related outcomes were assessed in the study. Self-rated health - Participants ranked their overall health on a fiveitem scale from excellent to poor with lower scores indicating greater perceived health (38). Disability status - Participants self-reported whether or not they had a physical or mental disability of any kind. Length of time living with HIV - Participants were asked to report how long they had been living with HIV. Response options ranged from less than 1 year to 15 years or more. Three HIV care outcomes were assessed in the study: length of time since last doctor's visit for HIV care, time since last HIV lab results, and most recent viral load result. Length of time since last HIV care visit - Participants were asked to report when they had their last HIV care visit. Response options ranged from "within the last 3 months" to "I have never received HIV care." Time since last HIV lab results - Participants were asked to report how long it had been since their last lab test or bloodwork was completed to measure their HIV viral load and/or CD4 counts. Response options ranged from "within the last 3 months" to "I have never had labs done." Results of last HIV viral load test - Participants were asked to self-report the results of the most recent viral load test. Response options were "undetectable, detectable, and I don't know."

Data Analysis

For all analyses we used Statistical Package for the Social Science (IBM SPSS) 24 (39). Descriptive statistics were completed with frequencies and percentages to describe the sample of MSM. Data was modeled based on MSM participants using Pearson's correlations and layered chi square non-parametric tests, due to the small and unequal MSM sample. This procedure used 5,000 bootstrapped samples, drawn with replacement, from our sample. A layered chi square test for independence bootstrapped with 5,000 samples was also conducted to examine racial differences between the various dimensions of HIV-related stigma, resilience, and HIV care outcomes. The bootstrapped chi-square test adjusts the right amount of randomness to the test statistic and performs well with small sample sizes in simulation studies (40, 41). We did not perform multivariable analyses given the small sample of MSM and unequal sample of Black MSM versus White MSM.

RESULTS

Overall description of MSM participants

Participant demographic characteristics are described in Table 1. One-hundred and ten (N=110) participants were MSM (i.e., identified as gay, bisexual, or reported sex with other men). Among MSM participants, the majority were Black (75%), most lived in New Orleans

(52%), and a third were over the age of 50 at the time of the interview (33%). Forty-five percent (45%) of all MSM were single (45%) and 48% were employed. The majority (52%) had a high school education or less and reported an average monthly income of \$2,000 or less (76%). The mean level of anticipated HIV stigma was 2.22 (standard deviation, σ =1.67); internalized HIV stigma was 3.04 (σ = 2.35); enacted HIV stigma was 0.75 (σ =1.21); and consequences of enacted HIV stigma was 3.52 (σ =2.87). Internal reliability calculated as a Cronbach's alpha (α) for the HIV-related stigma measures were 0.77, 0.82, 0.85, and 0.74 respectively which suggest good internal validity. The mean level of resilience was 3.91 (σ =2.28, α = 0.74).

Health and HIV care outcomes

These results are described in Table 2. More than two-thirds of participants described their overall health as either excellent or very good (n = 68, 62%). Nearly a third (n = 34, 31%) of enrolled MSM reported a physical disability not related to their HIV status and 40% (n = 44) reported a mental disability. Over half of enrolled MSM had been living with HIV for 10 years or more (n = 58, 53%). More than two-thirds of MSM participants had seen a doctor for HIV care in the last 3 months (n = 80, 73%), had received laboratory tests for their HIV in the last 3 months (n = 78, 71%), and reported that their last viral load result was undetectable (n = 80, 73%). Eighteen percent (18%) of MSM participants did not know if their viral load was undetectable or not.

Observed relationships between HIV-related stigma, resilience, and HIV care outcomes

These results are described in Table 3. Participants with a greater number of consequences of enacted HIV stigma also reported poorer HIV care outcomes (r(109) = .192, p < .05 for last doctor visit, r(109) = .215, p < .05 for last lab test). In addition, participants with higher levels of internalized HIV stigma also reported more time since last HIV care visit (r(109) = .227, p < .05), more time since last HIV lab result (r(109) = .218, p < .05), and lower likelihood of an undetectable viral load (r(109) = .275, p < 0.01). Anticipated HIV stigma and enacted HIV stigma were not significantly associated with any of the three HIV care outcome variables. Participants who reported higher levels of resilience were more likely to report positive HIV care outcomes (i.e., more frequent HIV care visits r(109) = -.28, p < .01, shorter time since last HIV lab results r(109) = -.27, p < .01, greater likelihood of an undetectable viral load r(109) = -.28, p < .01, shorter time since last HIV lab results r(109) = -.27, p < .01, greater likelihood of an undetectable viral load r(109) = -.38, p < .001).

Observed racial differences in HIV-related stigma, resilience, and HIV care outcomes

These results are not reported in tables. There were significant racial differences between internalized HIV stigma and HIV care outcomes. Internalized HIV stigma was significantly negatively associated with Black MSM participants' perceptions of their overall health χ^2 (24, n=109) = 48.74, p < .01 eta²= .49, 95% CI [.34, .66]. An observed negative relationship between internalized HIV stigma and viral load results approached significance for Black MSM χ^2 (3, n=110) = 34.62, p = .07. Internalized HIV stigma did not significantly affect perceptions of overall health, length of time since last HIV care visit, time since receiving last HIV lab results, or viral load result, for White MSM (p = .56, .61, .28, .32, respectively). Greater consequences of enacted HIV stigma was significantly associated with time since receiving last HIV lab test and viral load results for Black MSM such that those who

experienced more consequences of enacted HIV stigma were less likely to have received HIV lab results within the last year χ^2 (55, n=109) = 126.24, p < .001, eta²= .55, 95% CI [.35, .81], and were more likely to report a detectable viral load χ^2 (33, n=110) = 58.07, p < .01, eta²= .45, 95% CI [.33, .73]. Higher reported consequences of enacted HIV stigma was not significantly associated with perceptions of overall health, length of time since last HIV care visit, time since receiving last HIV lab results, or viral load result for White MSM (p = .25, .66, .45, .18, respectively). Furthermore, anticipated HIV stigma was negatively associated with perceptions of overall health for Black MSM χ^2 (15, n=109) = 26.80, p < .05, eta²= .41, 95% CI [.30, .62] but not for White MSM (p = .36). Black MSM who experienced higher levels of enacted HIV stigma were significantly less likely to report an HIV care visit in the last 12 months χ^2 (20, n=110) = 36.37, p < .01, eta²= .31, 95% CI [.14, .58], and were less likely to have an undetectable viral load χ^2 (15, n=110) = 27.79, p <.05, eta²= .20, 95% CI [.13, .52]. Among Black MSM, enacted HIV-stigma was marginally related to being less likely to receive HIV lab results in the last 12 months χ^2 $(25, n=109) = 36.67, p = .06, eta^2 = .21, 95\%$ CI [.12, .60] albeit not significant. Enacted HIV-stigma was not significantly associated with perceptions of overall health, length of time since last HIV care visit, time since receiving last HIV lab results, or most recent viral load result for White MSM (p = .67, .55, .98, .53, respectively).

Resilience was associated with positive HIV care outcomes for both Black and White MSM. White MSM reporting higher levels of resilience were significantly more likely to report better perceptions of overall health χ^2 (21, n=109) = 36.33, p < .05, eta²= .57. 95% CI [.36, .93], and had a higher likelihood of receiving an HIV lab result within the last year χ^2 (28, n=109) = 43.27, p < .05, eta² = .56, 95% CI [.44, .98]. Whereas Black MSM reporting higher levels of resilience were significantly more likely to report a shorter time since last their HIV care visit χ^2 (32, n=110) = 47.57, p < .05, eta² = .33 95% CI [.19, .53]. Finally, both Black and White MSM reporting higher levels of resilience were significantly more likely to report an undetectable viral load χ^2 (14, n=110) = 24.28, p < .05, eta² = .37, 95% CI [.17, .54] and χ^2 (24, n=110) = 43.82, p < .01, eta² = .54 95% CI [.30, .75] respectively. However, having higher levels of resilience may have been more protective for Black MSM than White MSM such that higher levels of resilience were associated with improved HIV care outcomes as measured by time since last HIV care visit, for Black MSM than for White MSM (χ^2 (1)=135.55).

DISCUSSION

Given the exploratory nature of our study and skewed enrollment distribution between Black and White MSM participants, our findings should be interpreted with caution. From our preliminary analysis, there appears to be a positive association between resilience and HIV care outcomes, especially for Black MSM compared with White MSM enrolled in the LA HSIP. However, this association needs to be explored among a larger representative sample of MSM in Louisiana.

Previous qualitative studies have identified a variety of resilience responses (e.g., dismissing stigma, confronting/challenging stigma, and utilizing resources) to stigmatization among MSM (28–31). Our study focused on two of those resilience responses as a single resilience

utilizing external resources to

measure: confronting or challenging HIV-related stigma and utilizing external resources to respond to HIV-related stigma. There, however, remains a gap in the literature as to the specific mechanisms in which these resilience profiles allow MSM, particularly Black MSM to positively adapt and/or respond to HIV-related stigma in order to improve HIV care outcomes. Additional information related to resilience may also be gleaned from the psychological resources (e.g., tools, skills, and personal identities used by PLWH to cope with stressful situations) described in the Framework for HIV-related stigma, engagement in care, and health outcomes (5).

We identified two resilience studies focused specifically among MSM in the Deep South. Both studies were focused on resilience and social discrimination within the context of HIV risk behaviors (42, 43). We believe that our study is one of the first quantitative studies to examine resilience specifically within the context of HIV-related stigma among MSM living with HIV in a Southern US state. Our study is aligned with a growing field of resilience research which suggests that movement from deficit-based models to more strengths-based approaches may be promising in order to inform the development of future HIV interventions for MSM (22, 23, 44).

Whereas, HIV-related stigma was experienced by every MSM participant, in the current study, the effects of HIV-related stigma differed by race in the non-parametric analyses. While White MSM living with HIV in this study reported experiences of HIV-related stigma, these experiences did not appear to preclude them from getting HIV care and being undetectable. Whereas, Black MSM living with HIV in this study reported a range of healthcare interruptions associated with HIV-related stigma. These racial differences may point to differential HIV care implications associated with HIV-related stigma among Black MSM compared with their White counterparts. However, a larger representative sample is required to confirm such findings.

Studies comparing the various dimensions and effects of HIV-related stigma on HIV care outcomes between White and Black MSM are limited (45). Thus our examination of the various dimensions of HIV-related stigma and resulting consequences of enacted HIV stigma among MSM living with HIV is a contribution to the field. Researchers hypothesize that the consequences of HIV-related stigma may be more pronounced for Black MSM who are more likely to live in communities where HIV stigma is more prevalent (46). In addition, the impact of HIV-related stigma among Black MSM may also be compounded by intersectional stigma (17–19).

Study Limitations

The interpretation of our exploratory study findings should be considered in the context of several limitations. Our analyses were conducted with 110 MSM who participated in a broader HIV stigma study, thus, our results are limited to the experiences of MSM living with HIV enrolled in the LA HSIP. The small sample size precludes population or community generalizations. Our study was not powered to conduct mediation or multivariable regression analyses. We recognize that there are potential mediators and unmeasured confounders that may be important to our exploration of resilience within the context of HIV-related stigma. Most participants were recruited from HIV service providers

and are thus not reflective of MSM who are not in HIV care. HIV status and viral load levels were self-reported and not verified with lab or other supporting data which may have resulted in social desirability bias. Lastly, measures of intersectional stigma were not included in the analyses and represent an important area for future examination (10, 17–21).

CONCLUSIONS

HIV services in Louisiana are under-resourced, with high HIV rates particularly among MSM, who account for at least fifty percent (50%) of persons newly diagnosed with HIV and PLWH in the state (32). MSM in this study revealed high levels of physical and mental disabilities, high poverty, limited education, and high reliance on public insurance programs. The current study is preliminary in nature and establishes a foundation for future resilience research within the context of HIV-related stigma among MSM in Louisiana. Our study leads to several avenues for future research among a more representative sample of MSM in the South including: 1) how resilience can be used to respond to or counter the negative effects of HIV-related stigma in order to improve HIV care outcomes among MSM, particularly Black MSM; 2) the inclusion of intersectional stigma measures within future studies; and 3) a more detailed understanding of the internal and external resilience characteristics among Black MSM that can be used to inform the development of future resilience-based interventions to improve HIV care outcomes among this population.

Acknowledgments

We would like to thank all study participants; Louisiana People Living with HIV Stigma Index interviewers, core group, and allies; Laurel Sprague PhD; the Global Network of People Living with HIV; and the US People Living with HIV Caucus.

Compliance with ethical standards:

Funding: This project was supported with funds from AIDS United; the City of New Orleans Health Department, Office of Health Policy and AIDS Funding; and the Office of Minority Health Grant # 6 CPIMP141066-03-01. R. Brewer's time was supported by a grant from NIMH (R25MH067127) for the Visiting Professor Program at the University of California, San Francisco; the Centers for Disease Control and Prevention, NCHHSTP 5U01PS005122; and NIDA P30DA027828-08S1.

REFERENCES

- Cohen MS, Chen YQ, McCauley M, et al. Prevention of HIV-1 infection with early antiretroviral therapy. N Engl J Med 2011;365:493–505. [PubMed: 21767103]
- Crepaz N, Tang T, Marks G, Mugavero MJ, Espinoza L, Hall HI. Durable viral suppression and transmission risk potential among persons with diagnosed HIV infection: United States, 2012–2013. Clinical Infectious Diseases. 2016;63:976–83. [PubMed: 27358354]
- Crawford TN, Thornton A. Retention in continuous care and sustained viral suppression: examining the association among individuals living with HIV. Journal of the International Association of Providers of AIDS Care. 2017;16(1):42–47. [PubMed: 27852944]
- 4. Valdiserri RO. HIV/AIDS stigma: an impediment to public health. Am Public Health. 2002;92:341–342.
- 5. Turan B, Hatcher AM, Weiser SD, et al. Framing mechanisms linking HIV-related stigma, adherence to treatment, and health outcomes. AJPH. 2017;107:863–869.
- Rueda S, Mitra S, Chen S, et al. Examining the associations between HIV-related stigma and health outcomes in people living with HIV/AIDS: a series of meta-analyses. BMJ Open. 2016; 6(7):e011453. doi: 10.1136/bmjopen-2016-011453.

- 7. Katz IT, Ryu AE, Onuegbu AG, et al. Impact of HIV-related stigma on treatment adherence: systematic review and meta-analysis. JIAS. 2013;16(3 Suppl 2): 18640. doi: 10.7448/ IAS.16.3.18640.
- White House Office of National AIDS Policy. National HIV/AIDs Strategy for the United States: Updated to 2020. Available at https://www.hiv.gov/federal-response/national-hiv-aids-strategy/nhasupdate. Accessed March 6, 2019.
- Centers for Disease Control and Prevention. HIV among gay and bisexual men. Available at https:// www.cdc.gov/nchhstp/newsroom/docs/factsheets/cdc-msm-508.pdf. Accessed March 6, 2019.
- Quinn K, Voisin DR, Bouris A, et al. Multiple dimensions of stigma and health related factors among young Black men who have sex with men. AIDS and Behavior. 2017;21(1):207–216. [PubMed: 27233249]
- 11. Dowshen N, Binns HJ, Garafalo R. Experiences of HIV-related stigma among young men who have sex with men. AIDS Patient care and STDs. 2009;23(5);371–376. [PubMed: 19320600]
- Jefferies WL, Townsend ES, Gelaude DJ, Torrone EA, Gasiorowicz M, Bertolli J. HIV stigma experienced by young men who have sex with men (YMSM) living with HIV. AIDS education and prevention. 2015;27(1):58–71. [PubMed: 25646730]
- Eaton LA, Driffin DD, Kegler C et al. The role of stigma and medical mistrust in the routine health care engagement of Black men who have sex with men. American Journal of Public Health. 2015;105:e75–82. doi: 10.2105/AJPH.2014.302322.
- 14. Levy ME, Wilton L, Phillips G, et al. Understanding structural barriers to accessing HIV testing and prevention services among black men who have sex with men in the United States. AIDS Behavior. 2014;18:972–996. doi: 10. [PubMed: 24531769]
- 15. Brooks RA, Etzel MA, Hinojos E, Henry CL, Perez M. Preventing HIV among Latino and African American gay and bisexual men in a context of HIV-related stigma, discrimination, and homophobia: Perspectives of providers. AIDS Patient Care STDS. 2005;19:737–44. doi: 10.1089/ apc.2005.19.737. [PubMed: 16283834]
- Wilson PA, Valera P, Martos AJ, Wittlin NM, Muñoz-Laboy MA, Parker RG. Contributions of qualitative research in informing HIV/AIDS interventions targeting Black MSM in the United States. The Journal of Sex Research. 2016;53:642–54. doi: 10.1080/00224499.2015.1016139. Epub 2015 Aug 4. [PubMed: 26241373]
- Arnold EA, Rebchook GM, Kegeles SM. 'Triply cursed': racism, homophobia, and HIV-related stigma are barriers to regular HIV testing, treatment adherence and disclosure among young Black gay men. Cult Health Sex. 2014;16(6):710–22. [PubMed: 24784224]
- Bogart LM, Landrine H, Galvan FH, Wagner GJ, Klein DJ. Perceived discrimination and physical health among HIV-positive Black and Latino men who have sex with men. AIDS Behavior. 2013;17:1431–1441. doi:10.1007/s10461-012-0397-5. [PubMed: 23297084]
- 19. Bogart LM, Wagner GJ, Galvan FH, Klein DJ. Longitudinal relationships between antiretroviral treatment adherence and discrimination due to HIV-serostatus, race, and sexual orientation among African-American men with HIV. Ann Beh Med 2010;40:184–90.
- Garofalo R, Mustanski B, Johnson A, Emerson E. Exploring factors that underlie racial/ethnic disparities in HIV risk among young men who have sex with men. J Urban Health. 2010;87(2):318–323. [PubMed: 20155329]
- 21. LeGrand S, Muessig KE, Pike EC, Baltierra N, Hightow-Weidman LB. If you build it will they come? Addressing social isolation within a technology-based HIV intervention for young lack men who have sex with men. AIDS Care. 2014;26(9):1194–1200. [PubMed: 24617609]
- 22. Herrick AL, Lim SH, Wei C, et al. Resilience as an untapped resource in behavioral intervention design for gay men. AIDS and Behavior. 2011;15:25–29.
- Herrick AL, Stall R, Goldhammer H, Egan JE, Mayer KH. Resilience as a research framework and as a cornerstone of prevention research for gay and bisexual men: theory and evidence. AIDS Behav 2013; 18:1–9.
- 24. Luthar SS, Cicchetti D, Becker B. The construct of resilience: A critical evaluation and guidelines for future work. Child Develop 2000;71:543–561. [PubMed: 10953923]
- 25. Fergus S, Zimmerman MA. Adolescent resilience: A framework for understanding healthy development in the face of risk. Annual Review of Public Health. 2005;26:399–419.

- 26. Ungar M The Social Ecology of Resilience: Addressing Contextual and Cultural Ambiguity of a Nascent Construct. American Journal of Orthopsychiatry. 2011; 81(1):1–14. [PubMed: 21219271]
- Buttram ME. The social environmental elements of resilience among vulnerable African American/Black men who have sex with men. J Human Behav Soc Environ 2015;25(8):923–933. [PubMed: 26839495]
- Choi KH, Han CS, Paul J, Ayala G. Strategies of managing racism and homophobia among U.S. ethnic and racial minority men who have sex with men. AIDS Educ Prev 2011;23(2):145–158. [PubMed: 21517663]
- 29. Han CS, Ayala G, Paul JP, Boylan R, Gregorich SE, Choi KH. Stress and coping with racism and their role on sexual risk for HIV among African American, Asian/Pacific Islander, and Latino men who have sex with men. Arch Sex Behav 2015;44(2):411–420. [PubMed: 25060122]
- 30. Bogart LM, Dale SK, Christian J, et al. Coping with discrimination among HIV-positive Black men who have sex with men. Cult Health Sex. 2017;19(7):723–737. [PubMed: 27885963]
- Harper GW, Bruce D, Hosek SG, Fernandez MI, Rood BA. Resilience processes demonstrated by young gay and bisexual men living with HIV: implications for intervention. AIDS Patient Care and STDs. 2014;28:666–676. [PubMed: 25329778]
- 32. State of Louisiana Department of Health and Hospitals, Office of Public Health, STD/HIV Program. 2016 STD/HIV Surveillance Report. Available at http://www.ldh.la.gov/assets/oph/ HIVSTD/std/STDAnnualReports/2016_STDHIV_SurveillanceReport_Final.pdf Accessed July 5, 2018.
- Sprague C, Simon SE. Understanding HIV care delays in the US South and the role of the sociallevel in HIV care engagement/retention: a qualitative study. Int J Equity Health. 2014;13:28. doi: 10.1186/1475-9276-13-28. [PubMed: 24708752]
- Acharya A, Blackwell M, Sen M. Legacy of slavery still fuels anti-black attitudes in the Deep South. 2013 Available at http://www.rochester.edu/news/show.php?id=7202. Accessed August 7, 2018.
- 35. Bouris A, Jaffe K, Eavou R, et al. Project nGage: Results of a randomized controlled trial of a dyadic network support intervention to retain young Black men who have sex with men in HIV care. AIDS Behav 2017;21(12):3618–29. [PubMed: 29079949]
- 36. The International Planned Parenthood Federation, the Global Network of People Living with HIV, International Community of Women Living with HIV, and Joint United Nations Programme on AIDS. 2008 The people living with HIV stigma index. Available at http://www.stigmaindex.org/ sites/default/files/pageattachments/UserGuide_FINAL_complete0055.pdf. Accessed April 24, 2018.
- Stangl AL, Brady L, Fritz K. Measuring HIV stigma and discrimination. 2012 Available at http:// strive.lshtm.ac.uk/system/files/attachments/STRIVE%20Stigma%20Measurement%20Brief.pdf. Accessed June 19, 2018.
- Centers for Disease Control and Prevention (CDC). Behavioral risk factor surveillance system survey questionnaire. Atlanta, Georgia: U.S Department of Health and Human Services, Centers for Disease Control and Prevention; 2008.
- IBM Corp. Released 2016 IBM SPSS Statistics for Windows, Version 24.0. Armonk, NY: IBM Corp.
- 40. Lin JJ, Chang CH, Pal N. A revisit to contingency table and tests of independence: bootstrap is preferred to Chi-Square approximations as well as Fisher's exact test. Journal of biopharmaceutical statistics. 2015;25(3): 438–458. [PubMed: 24905809]
- 41. Yin G, Ma Y. Pearson-type goodness-of-fit test with bootstrap maximum likelihood estimation. Electronic journal of statistics. 2013;7:412–427. [PubMed: 23720703]
- 42. Peterson JL, Bakeman R, Sullivan P, et al. Social discrimination and resiliency are not associated with differences in prevalent HIV infection in black and white men who have sex with men. J Acquir Immune Defic Syndr 2014;66(5):538–43. [PubMed: 24820109]
- 43. McNair OS, Gipson JA, Denson D, Thompson DV, Sutton MY, Hickson DA. The associations of resilience and HIV risk behaviors among Black gay, bisexual, other men who have sex with men (MSM) in the Deep South: The MARI Study. AIDS Behav 2018 5;22(5):1679–1687. [PubMed: 28856456]

- 44. Earnshaw VA, Bogart LM, Dovidio JF, Williams DR. Stigma and racial/ethnic HIV disparities. Moving toward Resilience. American Psychologist. 2013;68(4):225–236. [PubMed: 23688090]
- 45. Smit PJ, Brady M, Carter M, et al. HIV-related stigma within communities of gay men: A literature review. AIDS Care. 2012;24:405–412. [PubMed: 22117138]
- 46. Rao D, Pryor JB, Gaddist BW, Mayer R. Stigma, secrecy, and discrimination: ethnic/racial differences in the concerns of people living with HIV/AIDS. AIDS Behav 2008;12(2):265–271. [PubMed: 17588146]

Table 1 –

Demographic characteristics of men who have sex with men (MSM) living with HIV enrolled in the Louisiana HIV Stigma Index Project (LA HSIP), 2015–2017

Participant Characteristics, N=110	MSM Total N (%)	White MSM N (%)	Black MSM N (%)	
Age				
18–24 years	6 (5%)	0 (0%)	6 (7%)	
25–29 years	13 (12%)	7 (23%)	6 (7%)	
30–39 years	27 (25%)	5 (16%)	25 (30%)	
40–49 years	27 (25%)	9 (29%)	18 (22%)	
50 or more	37 (33%)	10 (32%)	28 (34%)	
Race				
Black	83 (75%)			
White	27 (25%)			
City of Residence				
New Orleans	57 (52%)	18 (58%)	43 (52%)	
Baton Rouge	53 (48%)	13 (42%)	40 (48%)	
Relationship Status				
Married or living together	30 (27%)	11 (36%)	21 (24%)	
In a relationship but not living together	13 (12%)	5 (16%)	8 (10%)	
Single	50 (45%)	11 (36%)	41 (49%)	
Divorced or separated	2 (2%)	1 (3%)	1 (1%)	
Unknown	15 (14%)	3 (10%)	12 (15%)	
Education				
Less than high school	11 (10%)	2 (7%)	9 (11%)	
Some high school or high school education	46 (42%)	7 (23%)	41 (49%)	
Some college/university	34 (31%)	14 (45%)	22 (27%)	
College graduate or post graduate degree	18 (17%)	8 (26%)	10 (12%)	
Unknown	1 (1%)	0 (0%)	1 (1%)	
Average Income (per month)				
\$0 - \$1000	50 (45%)	16 (52%)	37 (45%)	
\$1001 - \$2000	34 (31%)	7 (23%)	27 (33%)	
\$2001 - \$3000	14 (13%)	4 (13%)	11 (13%)	
\$3000+	9 (8%)	4 (13%)	5 (6%)	
Unknown	3 (3%)	0 (0%)	3 (3%)	
Insurance Status				
Uninsured	16 (15%)	3 (10%)	13 (16%)	
Medicaid	44 (40%)	15 (48%)	31 (37%)	
Medicare	31 (28%)	10 (32%)	23 (28%)	
Ryan White/AIDS Drug Assistance Program	33 (30%)	11 (36%)	23 (28%)	

Participant Characteristics, N=110	MSM Total N (%)	White MSM N (%)	Black MSM N (%)	
Private insurance (includes those with premiums covered by Ryan White)	28 (25%)	10 (32%)	15 (18%)	
Employment Status				
Employed	53 (48%)	16 (52%)	39 (47%)	
Unemployed	48 (44%)	12 (39%)	35 (42%)	
Looking for work/employment	13 (12%)	3 (10%)	10 (12%)	

Table 2 –

Self-rated health and HIV-related characteristics of MSM living with HIV enrolled in the LA HSIP, 2015–2017

Health-related Characteristics at enrollment, N=110	Total MSM N (%)	White MSM N (%)	Black MSM N (%)		
Self-rated health					
Excellent	23 (21%)	5 (16%)	19 (23%)		
Very Good	45 (41%)	9 (29%)	38 (46%)		
Good	27 (25%)	12 (39%)	16 (19%)		
Fair	14 (13%)	4 (13%)	10 (12%)		
Poor	0 (0%)	0 (0%)	0 (0%)		
Self-reported disability					
Mental health disability	44 (40%)	15 (48%)	29 (35%)		
Physical disability	34 (31%)	13 (42%)	24 (29%)		
Years living with HIV					
Less than 1 year	5 (5%)	2 (7%)	3 (4%)		
1 – 4 years	23 (21%)	7 (23%)	16 (19%)		
5 – 9 years	24 (22%)	8 (26%)	17 (21%)		
10 – 14 years	21 (19%)	4 (13%)	18 (22%)		
15+ years	37 (34%)	10 (32%)	29 (35%)		
Time since last HIV care visit					
Within last 3 Months	80 (73%)	23 (74%)	60 (72%)		
Within last 6 Months	12 (11%)	3 (10%)	10 (12%)		
Within the last year	5 (5%)	3 (10%)	2 (2%)		
More than a year	6 (6%)	2 (7%)	4 (5%)		
Never received care	7 (6%)	0 (0%)	7 (8%)		
Time since last HIV lab test					
Within last 3 Months	78 (71%)	24 (77%)	57 (69%)		
Within last 6 Months	14 (13%)	3 (10%)	12 (15%)		
Within the last year	7 (6%)	2 (7%)	5 (6%)		
More than a year	6 (6%)	1 (3%)	5 (6%)		
Never had labs done	2 (2%)	0 (0%)	2 (2%)		
Most recent viral load result					
Undetectable	80 (73%)	23 (74%)	61 (74%)		
Detectable	9 (8%)	5 (16%)	4 (5%)		
Don't know	20 (18%)	3 (10%)	17 (21%)		

Table 3 –

Correlations between resilience, HIV-related stigma, and HIV care outcomes among MSM living with HIV enrolled in the LA HSIP, 2015–2017

	Resilience	Enacted Stigma	Consequences of Enacted Stigma	Anticipated Stigma	Internalized Stigma	Years living with HIV	Self- rated Health	Time since last HIV care visit	Time since last HIV lab test	Viral Load Result
Resilience	1									
Enacted Stigma	.058	1								
Consequences of Enacted Stigma	068	.336***	1							
Anticipated Stigma	.008	.284 **	.619 **	1						
Internalized Stigma	044	.308 **	.615***	.502**	1					
Years Living with HIV	.094	082	056	.015	231*	1				
Self-rated Health	116	.046	.179	.226*	.323 **	078	1			
Time since last HIV care Visit	278 **	.145	.192*	.176	.227*	357 **	.294 **	1		
Time since last HIV lab test	267 **	.133	.215*	.077	.218*	278 **	.246*	.818 **	1	
Viral Load Result	378 **	.131	.177	.058	.275 ***	304 **	.190*	.593 **	.558 **	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).