

Autonomy-Supportive Healthcare Climate and HIV-Related Stigma Predict Linkage to HIV Care in Men Who Have Sex With Men in Ghana, West Africa

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Abstract

In Ghana, the HIV prevalence among MSM is more than 10 times greater than the general population of adults, and rates of engagement in HIV medical care are low among MSM diagnosed with HIV. Using structured surveys, we investigated the impact of HIV-related stigma, same-sex behavior stigma, and gender nonconformity stigma on linkage to HIV care (LTC) in MSM ($N = 225$) living with HIV in Ghana. Autonomy-supportive healthcare climate ($OR = 1.63, p < .01$), vicarious HIV stigma ($OR = 2.73, p < .01$), and age ($OR = 1.06, p < .004$) predicted LTC. Conversely, felt normative HIV stigma negatively predicted LTC ($OR = 0.65, p < .05$). Finally, we identified regional disparities, with MSM from Takoradi being 4 times and 5 times more likely to be LTC compared to Kumasi and Accra, respectively. Our findings highlight the nuanced roles of stigmas in shaping the HIV care continuum among MSM living with HIV, while revealing potential gaps in current measures of HIV-related stigma.

Keywords

self-determination theory, HIV/AIDS, MSM, Stigma, autonomy support

Introduction

In Ghana, 18.1% of men who have sex with men (MSM) live with HIV, compared to 1.6% of the general adult population.¹ The prevalence of HIV in MSM is highest in the country's capital region, Greater Accra (34.3%), followed by the Ashanti region of central Ghana (13.6%).^{2,3} The HIV care continuum outlines the steps for long-term management of HIV, beginning with diagnosis, followed by linkage to care, retention in care, treatment by antiretroviral therapy (ART), and with the end goal of sustained viral suppression.⁴ Linkage to care (LTC) is one of the first steps of the care continuum, in which newly diagnosed individuals initiate and attend medical appointments for HIV treatment in a timely manner.⁵ Early LTC is associated with increased probability of achieving viral suppression, and yet, many MSM never link to care after diagnosis.^{6,7} A recent study found that one-third of MSM in sub-Saharan Africa who were previously diagnosed with HIV had not been linked to care.⁸

There are numerous reasons why MSM who are aware of their HIV status may postpone, interrupt, or evade participation

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What Do We Already Know about This Topic?

Social stigmas surrounding HIV and MSM exist across Ghana and adversely influence MSM's linkage to health care services.

How Does Your Research Contribute to the Field?

Our research builds upon previous qualitative evidence of MSM in Ghana by providing a quantitative analysis of how specific HIV- and MSM-related stigmas perceived by MSM impact their healthcare-seeking behaviors after HIV diagnosis.

What Are Your Research's Implications toward Theory, Practice, or Policy?

Our research offers new methodological insights in our field by demonstrating how the limitations of currently available instruments for measuring stigma can result in misleading interpretations such as suggesting that vicarious stigma is a protective factor for linkage to care.

in medical care.⁹ Stigma in healthcare facilities is a common barrier to accessing healthcare for MSM living with HIV in sub-Saharan African contexts.⁹⁻¹¹ Social identities associated with same-gender sexual practices, non-conformity to perceived traditional norms of masculinity and an HIV diagnosis are stigmatized in Ghana.^{9,12} The interlocked experience of the stigmas placed on these 3 identities is termed intersectional stigma.^{13,14} For example, in Ghana same-gender sexual behavior remains criminalized.^{12,15} In this context, lesbian, gay, bisexual, transgender, and queer-identified (LGBTQ) individuals are socially marginalized and not afforded access to legal protection of their basic human rights.¹⁶ MSM whose sexual desires and behaviors are disclosed in the process of seeking HIV medical care can become victims of harassment, discrimination and violence.^{9,10,16} Additionally, MSM who do not conform to traditional gender norms of masculinity, such as displaying feminine mannerisms or behaviors that are commonly associated with "womanhood," often cannot pass as "straight" and therefore become more visible targets of stigma and discrimination.^{17,18}

Intersecting with the stigmas on same-gender sexualities and gender non-conformity is the stigma on HIV, the acquisition of which some believe is divine retribution for same-gender sexual desires and behaviors.¹⁹ HIV-related stigma consists of negative attitudes surrounding the behaviors that are assumed to have led to infection (e.g., same-sex contact, drug use, and sex work), as well as the high perceived personal risk of infection from interacting with people living with HIV (PLWHIV).²⁰ Moreover, HIV continues to be viewed by many as a death sentence instead of a manageable chronic illness, creating a perception of PLWHIV as "dead before dying,"

which contributes to a climate of social devaluation of these individuals.²¹ The influence of multiple intersecting stigmas has been demonstrated to have effects on health and healthcare behaviors across domains and populations.^{12,22,23} Intersectional stigma is conceptualized as affecting HIV care continuum outcomes through the influences it exerts on interpersonal interactions between health providers and stigmatized patients, the fear and distress this stimulates in patients and consequently physiological stress responses that may manifest in avoidance behaviors—such as avoiding re-exposure to healthcare environments that are potential sources of stigma.²⁴ This conceptualization is also supported by evidence from a randomized controlled trial demonstrating that healthcare providers exhibit higher number of stigmatizing behaviors to patients that they perceived to have multiple socially marginalized identities such as being a PLWHIV and homosexual-identified, or a PLWHIV and substance user compared to a PLWHIV who is heterosexual-identified.²⁵

Due to the intersectional stigma on people with HIV (or perceived to be living with HIV), who engage in same-gender sexual practices, and who do not necessarily conform to traditional norms of gender,²⁶ Ghanaian MSM may avoid HIV care services because they fear being mistreated in the healthcare system.²⁷ Previous qualitative studies of MSM in Ghana found that their experiences of stigma in healthcare settings were important barriers to accessing care.^{9,10,12} One study explored what healthcare climate-related factors that influenced the use of HIV services among a sample MSM ($N = 137$) recruited from across the Ghanaian cities of Accra, Kumasi and Manya Krobo.¹⁰ Among the main findings from the study were that stigma in healthcare facilities undermined service utilization, MSM did not feel they had the freedom to be themselves in healthcare encounters and MSM did not feel that the healthcare providers cared about them.¹⁰ For example, upon learning that their patient was MSM, some practitioners refused to provide care or avoided performing standard genital or anal examinations that would have diagnosed sexually transmitted infections (STI).¹⁰ Other practitioners criticized and blamed the sexual practices of MSM as the reason for their infection.¹⁰ The presence of stigma renders healthcare facilities unsafe spaces for MSM and PLWHIV to access and navigate because it undermines the support, trust, respect, and effective communication necessary for autonomy-supportive (*i.e.*, patient-centered) health care.²⁸

Autonomy support is a concept of self-determination theory (SDT)—a social psychological theory of human motivation.²⁹ SDT has a long history of use in health,³⁰ but only recently used in HIV prevention research.³¹⁻³⁴ According to SDT, healthy behavior change is optimized in social environments that support 3 basic human psychological needs: autonomy (*i.e.*, having control over one's own life), competence (*i.e.*, having the capability to succeed), and relatedness (*i.e.*, feeling connected to others).²⁹ Health practitioners who are supportive of their patients' autonomy are understanding of and responsive to patients' perspectives and concerns, providing choices and information while allowing patients to make their own

decisions.³⁵ Patients whose providers support their autonomy, competence, and relatedness build autonomous motivation to improve their health and are more likely to engage in and maintain ongoing pro-health behaviors, such as smoking cessation and medication adherence.^{30,35}

Stigmas surrounding HIV, same-sex practices, and gender non-conformity are ubiquitous in Ghana and contribute to healthcare system environments that lack autonomy-support for MSM living with HIV.^{10,31} It remains unclear how these stigmas, experienced by MSM themselves, influence their own care-seeking behaviors and progression across the HIV care continuum. Furthermore, given the complexity of HIV-related stigma, it is not well understood what specific components of these stigmas contribute to participation (or lack of) in the care continuum. In this study, we investigated how HIV-related stigmas, same-sex behavior stigma, gender nonconformity stigma, and autonomy-supportive health care climate influenced LTC among cisgender adult MSM living with HIV in Ghana.

Methods

Study Design and Setting

We conducted a cross-sectional study of MSM living with HIV in Ghana from January 2017 to August 2017, recruiting from 4 major cities: Accra, Kumasi, Takoradi, and Koforidua. Cisgender men who were at least 18 years of age, who reported consensual sexual contact with another man in their lifetime, and who were diagnosed with HIV at least 6 months prior were eligible for enrollment into the study. The fourth generation Alere™ Determine ½ Antigen ½ Antibody rapid test for HIV types 1 and 2 was used to confirm HIV infection. Men were excluded from participating in the study if they had not been residents of Ghana for at least 12 months, had past severe and persistent mental illness, or were unable to provide consent for finger-stick blood samples for the HIV-½ antibody test.

We enrolled a total of 225 MSM living with HIV into our study, using a hybrid of venue-based ($n = 148$) and peer-driven ($n = 77$) recruitment strategies.³⁶ This hybrid strategy—similar to “Starfish sampling”—has been used in previous studies as a superior method that overcomes the weaknesses of using only venue-based or only peer-driven recruitment.^{36,37} Venue-based recruitment consisted of referrals from HIV clinic providers, HIV support groups, and face-to-face recruitment by research assistants and outreach staff at Priorities on Rights & Sexual Health (PORSH)—a non-governmental organization specializing in health and human rights for LGBTQ Ghanaians. Regarding peer-driven recruitment, 1 to 2 venue-based recruits from each city (Accra, $n = 2$; Kumasi, $n = 1$; Koforidua, $n = 1$; Takoradi, $n = 1$) were selected as initial seeds and were each given 3 serially-coded coupons to recruit up to 3 of their peers into the study. Their subsequent recruits, if eligible to participate in the study, were then each given 3 coupons to refer their own peers, and this chain-referral procedure likewise proceeded for up to 4 waves. Study participants were assigned

unique identification codes which were used throughout data collection, management, and analysis. All data from the study were securely stored using Research Electronic Data Capture (REDCap) or on University of Rochester Medical Center servers (for iSurvey downloads). Research assistants administered the survey and recorded participant data in REDCap. The rapid HIV antibody/antigen tests were performed by personnel who were credentialed in interpreting the test and offering post-test counseling.

Survey measures

Demographics. Participants were given a 45-minute structured survey that was self-administered on computer tablets using iSurvey software. Demographic variables included age, monthly income, highest level of education completed, city of closest residence, marital status, sexual orientation, and adult and childhood church attendance.

Linkage to HIV care. Drawing on evidence from previous studies in the HIV research literature,³⁸⁻⁴⁰ we measured linkage to HIV care by self-reported time of initial attendance at HIV primary care visits and length of time to first follow-up visit. Participants who reported attending a HIV primary care visit within 3 months of diagnosis and 1 or more follow-up visits within 6 months of diagnosis were coded as having timely linkage to care (*i.e.*, LTC = yes). All other participants were coded as having delayed LTC/no LTC.

HIV-Related Stigmas. Using the theoretical framework developed by Steward et al. (2008), we measured 4 dimensions of HIV stigma: enacted, felt normative, vicarious, and internalized HIV stigmas.^{14,41} The enacted stigma subscale (10 questions) measured whether PLWHIV experience acts of discrimination based on their HIV status. The vicarious subscale (10 questions) measured the frequency with which PLWHIV hear stories of other PLWHIV being mistreated or discriminated against. Because half of the questions in the vicarious subscale were related to health care experiences and half to family and community experiences, we divided this scale into 2 forms of vicarious stigma for several analyses. The felt normative subscale (11 questions) measured the extent to which HIV stigma is perceived to be normative, by assessing subjects' perceptions of the prevalence of community members who possess or exercise stigmatizing beliefs or behaviors toward PLWHIV. The internalized subscale (11 questions) measured the degree to which PLWHIV believe HIV stigma to be valid and that they should be subjected to stigmatizing beliefs and discrimination. Overall, the 4 HIV stigma subscales demonstrated good to excellent internal consistency in our sample; standardized Cronbach's α were 0.79 for enacted, 0.88 for vicarious, 0.93 for felt normative, and 0.86 for internalized. HIV stigma scores for each participant were determined by summing responses from individual questions for each subscale and dividing by the number of responses, a strategy which accounted for missing responses. The enacted

subscale ranged from a minimum possible score of 0 to a maximum possible score of 1, while felt normative, internalized, and vicarious subscales ranged from 0 to 3. Higher scores indicated increased levels of HIV stigma.

Same-sex Behavior and Gender Nonconformity Stigmas. The same-sex behavior stigma scale (10 questions) measured the extent to which people experience stigmatization, discrimination, or mistreatment because of their same-gender sexualities.^{42,43} We adopted a modified version of this scale by Diaz et al. (2001), using language more compatible with sociocultural contexts of low- and middle-income countries (e.g., India, China) that we thought would be more congruent with the Ghanaian sociocultural landscape.^{14,43} The gender nonconformity stigma scale (13 questions) measured the extent to which men feel degraded or are mistreated for exhibiting gender attributes associated with women.⁴⁴ Same-sex and gender nonconformity scales demonstrated good internal reliability in our sample; Cronbach's α was 0.82 for same-sex and 0.85 for gender nonconformity stigmas. Same-sex and gender nonconformity scale scores for each participant were determined by summing responses from individual questions for each scale and dividing by the number of responses. Possible scores ranged from 0 to 3 for each stigma scale, with higher scores indicating increased levels of stigma.

Autonomy-supportive Health Care Climate. The health care climate questionnaire (HCCQ) (15 questions) measured the degree to which a patient perceives the relationship with his healthcare provider to be supportive of his autonomy. This questionnaire includes 3 subscales that measure specific constructs of self-determination theory (i.e., autonomy, competence, and relatedness), with each of the 15 statements reflecting one of these constructs.^{29,45} Respondents were asked to indicate the degree to which they agreed that the statements reflected their experiences with their providers. The HCCQ demonstrated excellent internal consistency in our sample (Cronbach's $\alpha = 0.95$). The HCCQ scale scores for each participant were determined by summing responses from individual questions and dividing by the number of responses. Scores ranged from 0 to 6, with higher scores indicating more autonomy-supportive health care climates.

Statistical Analyses

Descriptive statistics were used to summarize demographic variables, stigma scales, and the HCCQ. Nonparametric tests were used in inferential analyses due to non-normal distributions of data. Wilcoxon rank-sum tests were used to investigate potential differences in continuous predictors by LTC. Spearman's rank-order correlation tests assessed associations between continuous variables. Kruskal-Wallis tests examined differences in continuous predictors by city. Stepwise logistic regression with backward elimination was performed on the full model consisting of demographic variables, stigma scales, and health care climate as potential predictors for LTC. All

statistical analyses were conducted using SAS 9.4 (SAS Institute, Inc., Cary, North Carolina, USA) at a significance level of 0.05.

Ethical Approval and Informed Consent

The study was approved by the University of Rochester Research Subjects Review Board (approval #60120) and the Kwame Nkrumah University of Science & Technology Committee on Human Research, Publication and Ethics located in Kumasi, Ghana (approval #CHRPE/AP/523/16). All participants provided written informed consent prior to enrollment in the study. Research assistants obtained electronic (rather than paper) written informed consent which was stored in REDCap to protect subjects' privacy. Consent forms were provided in English, the primary written language in Ghana.

Results

Demographics

The sample ranged from 18 to 59 years, with a median (M) age of 25 (Tables 1 and 2). Over 91% of participants ($n = 205$) were age 35 or younger. Nearly 60% resided in or near Greater Accra ($n = 136$), 15% in Kumasi ($n = 33$), 17% in Takoradi ($n = 38$), and 8% in Koforidua ($n = 17$). Median monthly income was 300 GHS, equivalent to 62 US dollars (Table 2). Overall, our sample reported relatively low income; over 68% ($n = 153$) reported a monthly income of 500 GHS (102 US dollars) or less, while 10.2% ($n = 23$) reported 1000 GHS (205 US dollars) or more per month. Roughly 51% of respondents ($n = 115$) reported attraction to men only, 0.4% ($n = 1$) reported attraction to women only, and 48% ($n = 109$) reported attraction to both men and women (Table 1). Over 94% ($n = 212$) were currently single (10 were previously married). Approximately 27% ($n = 61$) had never attended a medical appointment for HIV after being diagnosed (Table 3). Roughly 28% ($n = 63$) had delayed diagnosis (i.e., had experienced HIV symptoms before medical diagnosis). Approximately 54% ($n = 119$) had linkage to care with no delay. Of the 164 individuals who sought medical attention for HIV at some point, 84% ($n = 137$) attended their first medical visit for HIV within 3 months of diagnosis, 66.5% ($n = 109$) attended a medical appointment for HIV in the past month, and nearly 90% ($n = 147$) attended a medical appointment within the past 3 months.

Prevalence and Distribution of Stigmas

Enacted HIV stigma was the lowest among the HIV-related stigmas, with 22% of respondents ($n = 50$) reporting any experience of discrimination related to their HIV status. Vicarious stigma was more common; 74% of respondents ($n = 167$) reported hearing any stories of discrimination against PLWHIV. Specifically, 51% of respondents ($n = 114$) reported hearing stories of HIV discrimination related to health care, while 68% of respondents ($n = 153$) reported hearing stories of family or community-related HIV discrimination. Of the 4

Table 1. Frequency Distributions of Demographic Variables.

Demographic	<i>n</i>	%
Age (years)	225	100
18-24	100	44.4
25-34	100	44.4
35-44	20	8.9
≥ 45	5	2.2
Monthly income (GHS)	198	100
≤ 200	61	30.8
201-500	92	46.5
501-999	22	11.1
≥ 1000	23	11.6
Highest education completed	225	100
Primary (fifth) or elementary (eighth)	24	10.7
High school (10th) or higher secondary (12th)	158	70.2
Diploma course or college degree	43	19.1
Closest city of residence	220	100
Greater Accra	136	61.8
Kumasi	32	14.6
Takoradi	34	15.5
Koforidua	18	8.2
Marital status	225	100
Married	13	5.8
Single	212	94.2
Sexual attraction	225	100
Men only	115	51.1
Women only	1	0.4
Both men and women	109	48.4
Church attendance	225	100
Attend church	178	79.1
Do not attend church	47	20.9
Childhood church attendance	225	100
Attended church growing up	207	92.0
Did not attend church growing up	18	8.0

Ghanaian cedi.

dimensions of HIV stigma, felt normative stigma was scored the highest; 96% of respondents ($n = 215$) reported some perception of HIV stigmatization in their community. Internalized stigma was commonly experienced; 84% of respondents ($n = 188$) reported self-stigmatization due to their HIV status. Same-sex behavior stigma was also prevalent; 96% of respondents ($n = 216$) reported experiencing stigma or discrimination because of their sexuality. Most respondents (88%; $n = 198$) reported stigmatization or discrimination because of their perceived gender nonconformity. Scores for the HCCQ were high; over 60% of respondents ($n = 135$) rated an average of 5 or above (out of 6) on the questionnaire, suggesting that their health care climates were generally autonomy supportive.

Correlations

Continuous predictors were found to have significant correlations among each other (Table 4). HIV-related stigmas were positively correlated ($p < 0.05$), with the greatest magnitude occurring between vicarious and felt normative stigmas ($r = 0.324$, $p < .0001$). Same-sex and gender nonconformity

stigmas shared the greatest magnitude of correlation seen among all variables ($r = 0.679$; $p < .0001$) and were also positively correlated to all 4 HIV-related stigmas. Health care climate was positively correlated with vicarious HIV stigma ($r = 0.154$, $p = 0.0213$), but negatively correlated with enacted HIV stigma ($r = -0.172$, $p = 0.0099$) and same-sex stigma ($r = -0.160$, $p = 0.0164$). Age was positively correlated with vicarious HIV stigma ($r = 0.247$, $p = 0.0002$), health care climate ($r = 0.224$, $p = 0.0007$), and income ($r = 0.370$, $p < .0001$). Income was also positively correlated with vicarious HIV stigma ($r = 0.145$, $p = 0.041$).

Sampling Effects and Regional Differences

Overall, demographic variables and stigmas did not differ by method of recruitment ($p > 0.05$). Vicarious HIV stigma, felt normative HIV stigma, and gender nonconformity stigma differed among the 4 cities ($p < 0.05$; Table 5). Vicarious stigma was highest in Takoradi (Median [M] = 0.45; Inter-Quartile Range [IQR] 0.10, 1.00) and lowest in Koforidua ($M = 0.10$; IQR 0.00, 0.50; $\chi^2 = 9.738$, $p = 0.021$). Felt normative HIV stigma was highest in Koforidua ($M = 2.09$; IQR 0.82, 2.36) and lowest in Kumasi ($M = 1.27$; IQR 0.55, 1.82; $\chi^2 = 14.933$, $p = 0.002$). Gender nonconformity stigma was highest in Greater Accra ($M = 0.77$; IQR 0.42, 1.19) and lowest in Kumasi ($M = 0.31$; IQR 0.08, 0.85; $\chi^2 = 10.594$, $p = 0.014$). Enacted HIV stigma, internalized HIV stigma, same-sex stigma, age, income, and health care climate did not differ by city ($p > 0.05$).

Predicting Linkage to Care

Age, health care climate, and vicarious HIV stigma were associated with LTC (Table 6) in bivariate analysis. Specifically, MSM who were linked to care were older ($M = 27$; IQR 24, 31) than those who were not linked to care ($M = 24$; IQR 21, 28; $U = 9261$, $p < .0001$). MSM who were linked to care had higher scores (*i.e.*, more perceived autonomy support) on the HCCQ ($M = 5.60$; IQR 4.80, 6.00) than those who were not linked ($M = 4.93$; IQR 3.00, 5.80; $U = 9308$, $p < .0001$). MSM who were linked to care had higher scores for (*i.e.*, increased levels of) vicarious stigma ($M = 0.60$; IQR 0.20, 1.00) than those who were not linked ($M = 0.20$; IQR 0.00, 0.60; $U = 9723$, $p = 0.0002$). MSM who were linked to care had higher scores for health care-related vicarious stigma ($M = 0.20$; IQR 0.00, 0.60) than those who were not linked ($M = 0.00$; IQR 0.00, 0.40; $U = 10461$, $p = 0.0217$). MSM who were linked to care also had higher scores for family and community-related vicarious stigma ($M = 0.80$; IQR 0.20, 1.20) than those who were not linked ($M = 0.20$; IQR 0.00, 0.80; $U = 9599$, $p < .0001$). Monthly income and enacted, felt normative, internalized, gender nonconformity, and same-sex stigmas were not significantly associated with being linked to care.

The final multivariate model for linkage to care consisted of the following predictors: vicarious HIV stigma, felt normative HIV stigma, health care climate, age, and city of closest

Table 2. Descriptive Statistics of Continuous Predictors.

Variable	n	Mean ± SD [#]	Median (Q ₁ , Q ₃)	Range
Enacted HIV Stigma	225	0.05 ± 0.12	0.00 (0.00, 0.00)	0.00, 0.90
Vicarious HIV Stigma	225	0.54 ± 0.54	0.40 (0.00, 0.90)	0.00, 2.30
Felt Normative HIV Stigma	225	1.77 ± 0.91	1.82 (1.00, 2.55)	0.00, 3.00
Internalized HIV Stigma	225	0.63 ± 0.60	0.46 (0.18, 1.00)	0.00, 2.91
Gender Nonconformity Stigma	225	0.74 ± 0.57	0.69 (0.23, 1.15)	0.00, 2.70
Same-Sex Behavior Stigma	225	0.94 ± 0.61	0.90 (0.50, 1.30)	0.00, 3.00
Healthcare Climate	224	4.82 ± 1.38	5.47 (4.05, 6.00)	0.40, 6.00
Age	225	26.76 ± 6.63	25 (23, 29)	18, 59
Income ^c	198	2561.03 ± 28403.35	300 (200, 500)	25, 400000

^cGhanaian cedi (GHS).

[#]Standard deviation.

residence (Table 7). The Hosmer-Lemeshow goodness-of-fit test indicated a good fit for the data ($\chi^2 = 9.492$, $df = 8$, $p = 0.3025$). For each unit increase in the vicarious HIV stigma subscale, the odds of being linked to care increased by nearly 3-fold ($\chi^2 = 9.284$, odds ratio (OR) = 2.73 [95% confidence interval (CI): 1.43, 5.22], $p = 0.0023$). Conversely, for each unit increase in felt normative HIV stigma subscale, the odds of being linked to care decreased by 35% ($\chi^2 = 5.163$, OR = 0.65 [CI 0.45, 0.94], $p = 0.0231$). For each unit increase in health care climate score, the odds of being linked to care increased by 63% ($\chi^2 = 14.391$, OR = 1.63 [CI 1.27, 2.10], $p = 0.0001$). For every year older, the odds of being linked to care increased by 6% ($\chi^2 = 4.170$, OR = 1.06 [CI 1.00, 1.11], $p = 0.0411$). Regarding city of closest residence, MSM from Takoradi were 5 times more likely to be linked to care compared to MSM from Greater Accra ($\chi^2 = 11.661$, OR = 5.04 [CI 1.99, 12.76], $p = 0.0006$) and 4 times more likely to be linked to care compared to MSM from Kumasi ($\chi^2 = 5.926$, OR = 4.37 [CI 1.33, 14.31], $p = 0.0149$).

Discussion

We examined the roles of HIV, same-sex, and gender nonconformity stigmas in determining linkage to care in MSM living with HIV from 4 major cities across Ghana. Regarding healthcare access for MSM, HIV-related stigmas may have a greater effect on LTC-related care-seeking behaviors than stigmas surrounding same-gender sexuality. Additionally, the associations between HIV-related stigmas and care-seeking behaviors may be more complex than previously recognized. Our findings reveal the challenges in accurately measuring stigma using surveys, which may indirectly measure other social factors and confound observed associations. Our results also highlight the importance of MSM having healthcare providers who are supportive of their autonomy while navigating the HIV care pathway. Lastly, we demonstrate regional disparities in care-seeking behaviors and social attitudes across Ghana. Our study findings can be combined with future research to provide useful information for designing MSM-specific, regional HIV interventions in Ghana.

Table 3. Frequency Distributions of HIV Care-Seeking Behaviors.

Measure	n	%
Delayed HIV diagnosis^c	224	100
Yes	63	28.1
No	161	71.9
Since your HIV diagnosis, have you ever attended a medical appointment regarding your HIV infection?	225	100
Yes	164	72.9
No, never	61	27.1
After your HIV diagnosis, how many months passed before you attended your first medical visit for HIV infection?	163	100
1-3 months	137	84.0
4-6 months	14	8.6
More than 6 months	12	7.4
Within the first 6 months of first being diagnosed with HIV, how many medical visits did you attend related to your HIV infection?	160	100
1-3 visits	79	49.4
4-6 visits	53	33.1
7-9 visits	14	8.8
≥ 10 visits	14	8.8
When was the last time you attended a medical appointment for your HIV infection?	164	100
1 month ago	109	66.5
2-3 months ago	38	23.2
4-6 months ago	11	6.7
More than 6 months ago	6	3.7
Linkage to HIV care*	222	100
Yes	119	53.6
No, or delayed	103	46.4
Retention in HIV care[#]	164	100
Yes	158	96.3
No	6	3.7

^cExperienced HIV symptoms before HIV diagnosis by a healthcare provider ("Yes"); otherwise ("No").

*Attendance at a HIV primary care visit within 3 months of diagnosis and 1 or more follow-up visits within 6 months of diagnosis ("Yes"); otherwise ("No, or delayed").

[#]Among those who have ever attended a medical appointment for HIV following diagnosis, attendance at 1 or more HIV primary care visits within the past 6 months ("Yes"); otherwise ("No").

Table 4. Spearman's Rank-order Correlations Among Predictors.

	ES	VS	FS	IS	GS	SS	HC	A	I
Enacted HIV Stigma (ES)	1.00								
Vicarious HIV Stigma (VS)	0.16*	1.00							
Felt Normative HIV Stigma (FS)	-0.02	0.32***	1.00						
Internalized HIV Stigma (IS)	0.18**	0.12	0.22***	1.00					
Gender Nonconformity Stigma (GS)	0.21**	0.29***	0.26***	0.20**	1.00				
Same-Sex Behavior Stigma (SS)	0.31***	0.27***	0.20**	0.26***	0.68***	1.00			
Healthcare Climate (HC)	-0.17**	0.15*	0.10	-0.08	-0.09	-0.16*	1.00		
Age (A)	0.05	0.25***	0.03	-0.02	-0.04	0.01	0.22***	1.00	
Income (I)	0.09	0.15*	-0.13	-0.10	0.04	0.11	0.09	0.37***	1.00

Note: Spearman's rho is accompanied by level of p -value significance (* $p < 0.05$; ** $p < 0.01$, *** $p < 0.001$). Rho of 1 indicates a perfect positive correlation. Rho of -1 indicates a perfect negative correlation.

HIV-Related Stigmas in MSM

Our sample of MSM reported relatively low to moderate levels of HIV-related stigmas. The extremely low rates of enacted stigma appear to suggest that direct acts of HIV discrimination are an uncommon occurrence in Ghana. However, it is possible that participants reported few instances of discrimination because they avoided disclosure of their HIV status and were unlikely to be known to have HIV. For instance, 40% of 78 respondents ($n = 31$) described the degree of worry or fear over the discovery or disclosure of their HIV status to be “a lot of the time” or “all of the time” (data not reported). Felt normative stigma was highest among the 4 forms of HIV stigma, suggesting that negative and prejudicial attitudes toward PLWHIV are present in Ghana. Levels of vicarious and internalized HIV stigmas were similar and higher than that of enacted stigma. Our findings mirror those from a previous study⁴⁶ of MSM in Ghana that found high levels felt normative stigma ($M = 24.1$, $SD = 7.3$)—an indication of the durability of this stigma across time as well as a need for the implementation of effective stigma-reduction interventions. We found positive correlations among HIV-related stigmas, which were also positively correlated with same-sex and gender nonconformity stigmas. Our findings are supported by several other studies from across the sub-Saharan African region that have also identified relationships between HIV stigma and multiple other forms of stigma experienced by MSM and other LGBTQ-identified individuals.^{47,48} Ultimately, the connections among these different stigmas support the idea that MSM living with HIV experience intersecting (rather than independent) stigmatizations in their identities as gay, bisexual, queer, or gender nonconforming men living with HIV.^{49,50}

HIV-Related Stigmas and Care-Seeking Behaviors

As expected, felt normative HIV stigma was a negative predictor of LTC, suggesting that MSM living with HIV who perceive HIV stigma to be ubiquitous in their community are likely to avoid or delay seeking care to protect against potential prejudice and discrimination (*i.e.*, enacted stigma). Surprisingly, vicarious HIV stigma was a strong positive predictor for LTC, which is counterintuitive to the idea that PLWHIV who

have heard stories of HIV-related discrimination are likely to avoid medical services to protect themselves from experiencing discrimination first-hand. The vicarious subscale partially consisted of health care-related stories of discrimination, and we reasoned that MSM linked to care were more likely to have heard such stories, given their stronger connections to health-care settings. However, when we split the vicarious subscale into health care and non-health care questions, we discovered that hearing stories of discrimination that were unrelated to health care (but related to family and community) strongly predicted LTC in logistic regression. In addition, although health care-related vicarious stigma was elevated in MSM with timely LTC relative to those without, which supported our initial reasoning, the statistically significant difference was small, and health care-related vicarious stigma did not predict LTC in logistic regression.

We present 2 possible hypotheses to explain why vicarious stigma positively predicted LTC. First, perhaps MSM living with HIV who are linked to care report hearing more stories of discrimination because they have social support systems or peers with whom they can confide and discuss HIV-related matters. Simply hearing stories of discrimination, especially personal experiences involving loved ones, is indicative of a welcoming atmosphere in which PLWHIV can talk about HIV and disclose their HIV status with others. MSM living with HIV who are linked to care may already benefit from more autonomy-supportive relationships with health practitioners, which also serves as a potential outlet for open communication. Second, although HIV stigma is understood to dissuade health-care participation, it is possible that some forms of stigma, while unfavorable for long-term psychological well-being, may have a short-term motivational impact. For instance, higher scores on HIV stigma were positively correlated with condom use for oral sex in Ghanaian MSM; however, that finding was in sample with a strong sense of community and strong perceptions that their basic psychological needs for autonomy, competence and relatedness were met via their peer social network.³¹ Thus, we argue that hearing stories of HIV discrimination in MSM there may be an intersectional interaction influenced by popular movement for health and human rights among LGBTQ peer social networks which harness the

Table 5. Kruskal-Wallis Tests Comparing Predictors by City.

	Median (Q ₁ , Q ₃)				χ^2 (p-value)
	Greater Accra (n = 136)	Kumasi (n = 33)	Takoradi (n = 38)	Koforidua (n = 17)	
Enacted HIV Stigma	0.00 (0.00, 0.00)	0.00 (0.00, 0.00)	0.00 (0.00, 0.00)	0.00 (0.00, 0.10)	1.757 (0.624)
Vicarious HIV Stigma	0.40 (0.00, 0.95)	0.30 (0.00, 0.50)	0.45 (0.10, 1.00)	0.10 (0.00, 0.50)	9.738 (0.021*)
Felt Normative HIV Stigma	2.00 (1.45, 2.73)	1.27 (0.55, 1.82)	1.77 (1.00, 2.73)	2.09 (0.82, 2.36)	14.933 (0.002*)
Internalized HIV Stigma	0.45 (0.18, 1.00)	0.55 (0.27, 0.91)	0.45 (0.09, 1.00)	0.55 (0.09, 0.82)	0.420 (0.936)
Gender Nonconformity Stigma	0.77 (0.42, 1.19)	0.31 (0.08, 0.85)	0.54 (0.23, 0.92)	0.69 (0.46, 0.92)	10.594 (0.014*)
Same-Sex Behavior Stigma	0.90 (0.40, 1.30)	0.90 (0.50, 1.30)	0.80 (0.40, 1.30)	0.70 (0.60, 1.00)	1.452 (0.693)
Healthcare Climate	5.53 (4.20, 6.00)	5.27 (3.00, 5.93)	5.30 (4.40, 5.87)	5.60 (3.00, 5.80)	1.474 (0.688)
Age	25 (23, 29)	25 (22, 31)	26 (23, 28)	24 (23, 27)	1.123 (0.772)
Income [†]	300 (200, 500)	300 (200, 550)	400 (255, 600)	300 (100, 450)	2.655 (0.448)

*p < 0.05.

[†]Ghanaian cedi (GHS).**Table 6.** Wilcoxon Rank-Sum Tests Comparing Predictors by Linkage to HIV Care.

Predictor	n	U	p-value [#]	Median (Q ₁ , Q ₃)	
				Linkage (n = 119)	No linkage (n = 103)
Enacted HIV Stigma	225	11042	0.2049	0.00 (0.00, 0.10)	0.00 (0.00, 0.00)
Vicarious HIV Stigma [‡]	225	9723	0.0002*	0.60 (0.20, 1.00)	0.20 (0.00, 0.60)
Healthcare Vicarious	225	10461	0.0217*	0.20 (0.00, 0.60)	0.00 (0.00, 0.40)
Family/Community Vicarious	225	9599	<.0001*	0.80 (0.20, 1.20)	0.20 (0.00, 0.80)
Felt Normative HIV Stigma	225	11978	0.3012	1.73 (0.91, 2.46)	2.00 (1.36, 2.64)
Internalized HIV Stigma	225	11447	0.9372	0.45 (0.18, 0.91)	0.55 (0.18, 1.00)
Gender Nonconformity Stigma	225	11643	0.7409	0.69 (0.23, 1.08)	0.77 (0.23, 1.15)
Same-Sex Behavior Stigma	225	11239	0.6062	0.90 (0.50, 1.30)	0.90 (0.40, 1.30)
Healthcare Climate	224	9308	<.0001*	5.60 (4.80, 6.00)	4.93 (3.00, 5.80)
Age	225	9261	<.0001*	27 (24, 31)	24 (21, 28)
Income [†]	198	8528	0.3921	325 (200, 500)	300 (200, 500)

[#]Two-sided probabilities from normal (Z) approximation.

*p < 0.05.

[‡]Scale is split into questions related to 1) healthcare or 2) family/community.[†]Ghanaian cedi (GHS).

emotional reaction of stigma and leverage it as a motivational tool for health justice to overcome stigmatization through engagement in HIV care.

Overall, our findings on how HIV-related stigmas impact care-seeking behaviors were not fully consistent with those from previous studies of MSM and PLWHIV in other low- and middle-income countries. For instance, a study of PLWHIV in India did not find felt normative and vicarious stigmas to be associated with delays in seeking health care, but instead found such associations with enacted and internalized stigmas.⁵¹ PLWHIV who experienced enacted and internalized stigmas were more likely to avoid disclosing their HIV status and/or to feel depressed, which consequently were associated with delays in seeking health care. Another study by the same group of researchers discovered that felt normative stigma was correlated with the avoidance of infection disclosure in PLWHIV.⁵² Yet another study of MSM and transgender women in Thailand found vicarious and felt normative stigmas to be negatively associated with HIV testing.⁵³ The shortage of existing studies on HIV-specific stigmas, intersecting stigmas and how they

relate to care engagement in MSM in sub-Saharan Africa, coupled with the unusual findings in this study, demand further research.

Autonomy-Supportive Health Care and Care-Seeking Behaviors

Overall, MSM in our study generally perceived their relationships with healthcare provider(s) to be autonomy-supportive, suggesting a positive health care climate in Ghana. Our discovery of the association between autonomy-supportive health care and LTC are consistent with findings from previous MSM studies in Ghana and Africa. For instance, Ghanaian MSM who reported more autonomy-supportive relationships with healthcare providers were more likely to use condoms during oral, anal, and vaginal sex, an indication of follow-through with and trust toward provider advice.³¹ In another study, Ghanaian MSM reported that not being accepted, understood, or cared for by healthcare providers were barriers toward accessing HIV prevention resources.¹⁰ Similarly, Kenyans who reported

Table 7. Logistic Regression Analysis Predicting Linkage to HIV Care.

Predictor	Estimate	SE [#]	χ^2	df	p-value	OR* (95% CI [‡])
Intercept	-2.097	0.958	4.791	1	0.0286*	
Healthcare Climate	0.489	0.129	14.391	1	0.0001*	1.63 (1.27, 2.10)
Vicarious HIV Stigma	1.005	0.330	9.284	1	0.0023*	2.73 (1.43, 5.22)
Felt Normative HIV Stigma	-0.433	0.191	5.163	1	0.0231*	0.65 (0.45, 0.94)
Age	0.053	0.026	4.170	1	0.0411*	1.06 (1.00, 1.11)
City						
Greater Accra vs. Takoradi	-1.618	0.474	11.661	1	0.0006*	0.20 (0.08, 0.50)
Kumasi vs. Takoradi	-1.474	0.606	5.926	1	0.0149*	0.23 (0.07, 0.75)
Koforidua vs. Takoradi	-1.299	0.681	3.637	1	0.0565	0.27 (0.07, 1.04)
Test			χ^2	df	p	
Overall model evaluation						
Likelihood ratio test			56.991	7	<.0001*	
Score test			50.894	7	<.0001*	
Wald test			40.082	7	<.0001*	
Goodness-of-fit test						
Hosmer & Lemeshow			9.492	8	0.3025	

*p < 0.05.

#Standard error.

Wald's χ^2 .

*Odds ratio.

‡Wald's 95% confidence interval.

‡Probability of being linked to care.

Cox and Snell R²: 0.228. Nagelkerke R² (max rescaled R²): 0.305.Kendall's Tau-a: 0.276. Goodman-Kruskal γ : 0.553. Somers's Dxy: 0.553.

Concordance statistic: 0.776. Akaike information criterion (AIC): 262.83. Schwarz criterion (SC): 289.98.

positive experiences with healthcare workers during HIV testing were more motivated to link to and follow-up with HIV services upon a positive diagnosis.⁵⁴ The study participants described respectful, honest, and encouraging (*i.e.*, autonomy-supportive) interactions with healthcare workers to be reasons for their care-seeking behaviors.⁵⁴ Research from Zambia and South Africa also found that the physical/material aspects of the healthcare setting can also be stigmatizing to PLWHIV.⁵⁵ This highlights that the development of multi-level interventions focused on reducing stigma in the healthcare environment—beyond, but including the interpersonal behaviors of healthcare workers—is a key area for future intersectional stigma reduction research with MSM in Ghana and elsewhere in the sub-Saharan African region.

Geographic Location and Age Differences

MSM living in the Sekondi-Takoradi and Cape Coast region of Ghana had increased LTC compared to MSM from Greater Accra and Kumasi. In contrast to the Greater Accra region, which has a population of 4 million, Takoradi is Ghana's fourth most populous city, and together with Sekondi and Cape Coast, is home to roughly half a million people. Currently, there is a lack of available studies on regional differences in healthcare access or services for HIV in Ghana. However, we speculated that reasons for locational disparities in rates of healthcare engagement for HIV could be due to differences in HIV support resources, stigmatizations of MSM, or basic healthcare

resources, among other cultural or socioeconomic factors. We found vicarious HIV stigma to be highest in the Takoradi region relative to the other cities, suggesting that the increased LTC in this area may stem from the same factor(s) contributing to the positive association between vicarious stigma and LTC. While felt normative HIV stigma and gender nonconformity stigma also differed by city, there were no immediate trends that could offer insight into the increased LTC in Takoradi. Ultimately, the increased rates of healthcare engagement in this region of Ghana may offer insight in designing effective HIV interventions for MSM living with HIV.

We also found important differences in linkage to care, by age. MSM not linked to care were significantly younger (≤ 24 years old) than those who were linked to care. Moreover, the likelihood of being linked to care increased 6% with each additional year of older age. These results are consistent with evidence from around the globe—including the sub-Saharan African region—indicating substantial gaps in LTC among adolescents and young adults.⁵⁶⁻⁶¹ In a retrospective cohort study of PLWHIV (N = 2,494) in Nigeria, a greater proportion of those ages 24 or younger had inconsistent HIV care (defined as >3 months between any 2 consecutive clinic visits) compared to those older than age 24.⁶¹ These adolescents were also at higher risk of inconsistent HIV care compared to those older than age 24 (relative risk; 1.15 p < .008).⁶¹ Even among those adolescents who were retained in care after 1 year, only one-quarter (26%) were virally suppressed which was significantly lower than the proportion of those older than 24 year who were

virally suppressed (40%, $p = .003$).⁶¹ Several factors have been shown to affect HIV care linkage and continuity among adolescent/young adults. These factors include interpersonal forms of stigma,^{62,63} healthcare service delivery models that are incongruent with adolescent developmental stages and social preferences,^{54,63,64} and concerns regarding the social consequences of tacit HIV-status disclosure from attending a “HIV clinic.”⁶⁵⁻⁶⁷ In addition to HIV stigma, the youth in our sample were impacted by intersecting same-sex and gender non-conformity stigmas which may be a compounding factor that acted as a LTC barrier, albeit as a means of protection against risk of tacit disclosure of one’s marginalized sexual identity and HIV status.

Future research may consider exploring the ways in which “adolescence” itself may be a stigmatized social identity in the Ghanaian sociocultural context that intersects with HIV stigma, sexual and gender identity development, same-sex stigma and gender nonconformity stigma. Future studies may focus on the development and implementation of approaches to reduce the effect of intersectional stigma on LTC and clinical outcomes specifically among adolescent MSM living with HIV. Intervention approaches may have greater acceptability and uptake potential if they are informed by preferences of adolescent MSM derived through equitable community-engagement practices.^{64,68} Approaches such as HIV-self testing have already demonstrated high acceptability among youth sub-Saharan African settings⁶⁹ and could be a pathway to virtual LTC and online care coordination—both of which were identified as service delivery preferences among young MSM in Ghana.¹⁵ Facility-based adolescent care capacity-building and stigma-reduction trainings were associated greater likelihood of HIV care engagement among Kenyan youth living with HIV ($RR = 1.56$, 95% CI: 1.13-2.16)⁷⁰ and may offer insights for reducing stigma and increasing capacity to work with adolescent MSM in Ghanaian healthcare facilities.

Limitations

Because we recruited MSM from Ghana’s major central and southern cities, our findings may not reflect the experiences of MSM living with HIV in rural or more northern areas of the country. Furthermore, we used non-probability sampling strategies to better access the population of MSM living with HIV for which no sampling frame exists. As a result, our findings may not be representative of the entire community of MSM living with HIV in Ghana. For instance, participants who were recruited from HIV clinics or support organizations may be distinct from MSM living with HIV who do not access or have access to such resources. Furthermore, the use of 2 different sampling strategies to create a cohesive study sample can lead to difficulties in interpreting study results. However, more recent literature provides evidence that combining venue-based and peer-driven sampling strategies is an innovative methodology that introduces the flexibility needed to overcome some of the challenges inherent in trying to generate a sample using each strategy alone.^{34,35} Moreover, in this study, none of

the variables of interest were found to be associated with recruitment strategy, and thus, we treated all 225 study participants as a cohesive random sample and did not include recruitment strategy as a factor in analyses.

Conclusions

It is critical to understand the dynamics surrounding care-seeking behaviors in populations with a disproportionately high burden of HIV, especially those in low-resource countries. Our study highlights the urgency of the HIV epidemic in Ghana, with almost one-third of MSM in our sample having reported that they never accessed medical care for HIV after diagnosis. Here, we demonstrate the interconnectedness of stigmas experienced by gay, bisexual, queer, and/or gender non-conforming MSM who are living with HIV, and we recommend future development of frameworks that address the complexity of intersectional stigma. Additionally, we identify the power of autonomy-supportive health care in driving LTC and recommend future studies that seek to pinpoint the factors that underlie autonomy support in MSM-provider relationships. Although we hypothesized that HIV, same-sex, and gender nonconformity stigmas would negatively affect LTC, we only found felt normative HIV stigma—a general perception of widespread HIV stigma—to negatively influence LTC. Unlike previously reported findings in other studies, we found vicarious HIV stigma, particularly hearing stories of HIV discrimination perpetuated by family and community members, to positively predict LTC. These contradictory findings point to potential gaps in current frameworks used to measure HIV-related stigmas, while also highlighting the need for fresh perspectives toward understanding the factors that drive engagement in the care continuum.

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