



Brief communication

Sexual behavior stigma and depression among transgender women and cisgender men who have sex with men in Côte d'Ivoire



Ayden Scheim, PhD ^{a,*}, Carrie Lyons, MPH ^b, Rebecca Ezouatchi, MA ^c, Benjamin Liestman, MSPH ^b, Fatou Drame, PhD ^{c,d}, Daouda Diouf, MSc ^c, Ibrahima Ba, MSc ^c, Amara Bamba, MD, MPH ^e, Abo Kouame, MD ^f, Stefan Baral, MD, MPH, MBA ^b

^a Division of Infectious Diseases and Global Public Health, Department of Medicine, University of California San Diego, La Jolla, CA

^b Department of Epidemiology, Center for Public Health and Human Rights, Johns Hopkins School of Public Health, Baltimore, MD

^c Enda Santé, Dakar, Senegal

^d Department of Geography, Gaston Berger University, School of Social Sciences, St. Louis, Senegal

^e Enda Santé, Abidjan, Cote d'Ivoire

^f Programme National de Lutte Contre le SIDA, Ministère de la Lutte Contre Le SIDA, Abidjan, Cote d'Ivoire

ARTICLE INFO

Article history:

Received 4 October 2018

Accepted 4 March 2019

Available online 12 March 2019

Keywords:

Transgender persons

Discrimination

Depression

Sexual and gender minorities

ABSTRACT

Purpose: Transgender women (TGW) and cisgender men who have sex with men (cisMSM) across sub-Saharan Africa experience health inequalities relative to other adults. Recent research has also revealed health inequalities between these often-conflated groups. Among TGW and cisMSM in Côte d'Ivoire, we sought to determine whether transgender female identity was associated with probable depression, and whether sexual behavior stigma mediated this association.

Methods: In 2015–2016, a cross-sectional respondent-driven sampling survey of adult TGW and cisMSM was conducted across five cities. We conducted a three-way decomposition of mediation and interaction of gender identity and sexual behavior stigma. Depression was measured by the nine-item Patient Health Questionnaire (PHQ-9).

Results: Of 1301 participants, 339 (26.1%) were TGW. The prevalence of probable depression was 22.7% among TGW and 12.2% among cisMSM ($P < .001$). After confounder adjustment, the relative risk of depression attributable to transgender female gender identity was 1.68 (95% CI = 1.36, 2.00) with 69.9% (95% CI = 42.6, 97.1) of this effect mediated by sexual behavior stigma. The effect of stigma on depression did not differ significantly by gender.

Conclusions: These data suggest that stigma mitigation interventions specifically addressing the stigma affecting transgender women may also address mental health inequalities between transgender women and cisMSM in Côte d'Ivoire.

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Introduction

Transgender women (TGW) and cisgender (nontransgender) men who have sex with men (cisMSM) across sub-Saharan Africa experience a range of health inequalities relative to other reproductive aged adults. Most research has focused on HIV risks among

these populations, although growing evidence also suggests that depression has been understudied but is common. Where data are available, prevalence of depression has been estimated to range from 16% in Lesotho to 57% in South Africa [1,2]. Reflecting the “entanglement” of cisMSM and transgender women in HIV-focused research globally [3]; studies of MSM across sub-Saharan Africa have historically recruited based on birth-assigned sex rather than self-identified gender, thereby including TGW who have sex with men. Only recently disaggregated HIV prevalence data have been reported in eight countries across sub-Saharan Africa, revealing that this conflation of gender identity and natal sex had obscured the even greater burden of HIV shouldered by TGW [4]. Similarly,

* Corresponding author. Division of Infectious Diseases and Global Public Health, Department of Medicine, University of California San Diego, 9500 Gilman Drive, La Jolla, CA 92093.

E-mail address: ascheim@ucsd.edu (A. Scheim).

these data from those eight countries indicate that TGW were more likely than their cisMSM peers to report recent depressive symptoms [4]. Depression is the second leading cause of years lived with disability globally [5] and is of particular concern in the context of HIV epidemics among TGW and cisMSM, considering its association with HIV-related risk [6] and treatment nonadherence [7].

Globally, sexual and gender minority populations experience stigma related to sexual identity and behavior, as well as related to gender identity and expression. Such stigma manifests in structural forms including criminalization, in interpersonal discrimination and violence, and in felt stigma [8–10]. Minority stress theory posits that stigma potentiates depression and other negative mental health outcomes among sexual and gender minorities [11–13]. Indeed, associations between stigma and psychological distress or depression have been established among TGW and cisMSM in a number of countries [9,14–17].

Across sub-Saharan Africa, the deleterious impact of stigma on MSM mental health has been described in countries including Lesotho [1]; Nigeria [18]; and South Africa [19]. Although TGW have often been included in these samples, gender identity differences in the association between stigma and depression have rarely been studied. Research has been conducted on gender expression, stigma, and psychological distress among South African MSM. Despite experiencing greater discrimination, feminine-presenting MSM were no more likely to be distressed [20,21]. It is unclear, however, to what extent those feminine-presenting MSM had a transgender identity, nor how applicable these results are in other African contexts.

In Côte d'Ivoire, a West African country with a French colonial legacy, same-sex sexual activity and gender nonconformity are not criminalized but are heavily stigmatized [8]. Preliminary data published from the present study in Côte d'Ivoire indicate that both TGW and cisMSM encounter high levels of sexual behavior stigma, and that TGW reported greater stigma across most indicators [22]. Within this sample of Ivoirian cisMSM and TGW who have sex with men, we sought to determine whether transgender female identity was associated with greater prevalence of probable depression, and whether sexual behavior stigma mediated this association. Within a potential outcomes framework, we employed a three-way decomposition of effects [23] to examine both mediation and interaction of gender identity and sexual behavior stigma.

Methods

Study design and participants

Between March 2015 and February 2016, a cross-sectional respondent-driven sampling survey was conducted across five cities: Abidjan, Agboville, Bouaké, Gagnoa, and Yamoussoukro. The aim of the original study was to assess the burden of HIV, determinants of prevalent HIV infections, and engagement in HIV treatment programs among cisMSM and TGW. Respondent-driven sampling (RDS) is a form of modified chain-referral sampling designed for use with hidden populations for which no sampling frame is available [24,25]. As RDS analytic adjustments assume a single component (i.e., that networks are linked) [26], unadjusted data are used in this multicity study.

The study began with 16 diverse seed participants who were each given three coupons for onward recruitment. Eligible participants were 18 years of age or older, had resided in one of the study cities for at least three months, were assigned the male sex at birth, and reported anal sex with a man in the previous year. The survey was completed in French. Participants provided verbal consent for participation and HIV testing and were provided with a \$4USD honorarium and \$2USD per eligible person recruited. Participants

who tested positive for HIV were referred to treatment and care services. Ethical approval was received from the Comité National d'Ethique et de la Recherche in Côte d'Ivoire. The Johns Hopkins School of Public Health provided approval for secondary analysis of deidentified data.

Measures

Participants were asked to indicate their gender identity with response options including “man,” “woman,” “transgender,” and “other, please specify.” Those who identified as a woman or as transgender were classified as TGW. The primary outcome was probable depression, as indicated by a Patient Health Questionnaire (PHQ-9) score of 10 or above. The PHQ-9 measures depressive symptom severity over the previous two weeks, and a score greater than or equal to 10 has 88% specificity and sensitivity for major depression [27]. The PHQ-9 has also been validated in French [28] and in sub-Saharan Africa [29]. The mediator of interest was social stigma related to sexual behavior. Participants were asked whether they had ever experienced particular forms of enacted, perceived, and anticipated stigma related to having sex with men (item wording is shown in Table 2). Affirmative responses were summed to produce an overall stigma score ranging from 0 to 13, with higher scores reflecting a greater burden of stigma experiences. These items have been used in studies of cisMSM and TGW across sub-Saharan Africa [30,31]. HIV serostatus was determined by rapid blood test. The Determine® HIV-1/2 test was used for preliminary testing (Alere International Limited, Ballybrit, Ireland), and positive results were confirmed with the STATPAK HIV 1/2 test (Chembio Diagnostic Systems, Inc., Medford, NY).

A directed acyclic graph was used to identify potential confounders (Supplementary Fig. 1). Although transgender identity has no known causes, we included factors that may cause identity disclosure: age (in years), study site, educational attainment (primary school or less, some high school, and high school completion or more). HIV status was not adjusted for as it is hypothesized to partially mediate the relationship between transgender status and depression, thereby forming part of the total effect.

Statistical analyses

Analyses were conducted in SAS 9.4 (SAS Institute Inc., Cary, NC, 2017). First, descriptive statistics were stratified by the presence of a positive depression screen, and the prevalence of each stigma item was compared by gender identity (male vs. transgender female). Pearson's χ^2 test (for binary variables) and the Mann–Whitney test (for continuous variables) were used to test for statistically significant differences at the $P < .05$ level. Next, to examine direct, indirect, and interactive effects of gender identity on depression via sexual behavior stigma, we used SAS's PROC CAUSALMED [32], which implements VanderWeele's approach to decomposing mediation and interaction effects [23,33] from observational data. We modeled the binary outcome of probable depression with a binomial distribution using a log link to allow for valid estimation of relative risks for this common outcome.

We chose the following three-way decomposition:

$$\begin{aligned} \text{Total Effect} &= \text{Natural Direct Effect (NDE)} \\ &+ \text{Pure Indirect Effect (PIE)} \\ &+ \text{Mediated Interaction (IMD)} \end{aligned}$$

This decomposition is most relevant for assessing mediation of the effects of nonmodifiable social identities by stigma; it corresponds to a clearly achievable intervention target (i.e., reducing

Table 1
Participant characteristics of transgender women and cisgender men who have sex with men by probable depression

Characteristic	Total	Depression*		P-value
	n (%)	Yes n (%)	No n (%)	
Total	1301 (100.0)	194 (14.9)	1107 (85.1)	—
Gender identity				<.001
Man	962 (73.9)	117 (12.2)	845 (87.8)	—
Transgender woman	339 (26.1)	77 (22.7)	262 (77.3)	—
Age (med, IQR)	23 (21–26)	24 (22–27)	23 (21–26)	.001
Site				<.001
Abidjan	351 (27.0)	86 (24.5)	265 (75.5)	—
Agboville	200 (15.4)	19 (9.5)	181 (90.5)	—
Bouaké	350 (26.9)	38 (10.9)	312 (89.1)	—
Gagnoa	150 (11.5)	33 (22.0)	117 (78.0)	—
Yamoussoukro	250 (19.2)	18 (7.2)	232 (92.8)	—
Education				.701
Primary school or less	138 (10.6)	20 (14.5)	118 (85.5)	—
Some high school	708 (54.4)	101 (14.3)	607 (85.7)	—
Completed high school	455 (35.0)	73 (37.6)	382 (34.5)	—
HIV-positive serostatus				<.001
Yes	146 (11.6)	38 (26.0)	108 (74.0)	—
No	1115 (88.4)	150 (13.4)	965 (86.6)	—
Sexual behavior stigma score (med, IQR) [Range = 0–13]	1 (0–3)	3 (1–5)	1 (0–3)	<.001

Proportions may not sum to 100% because of rounding.

Bolded values indicate differences between depressed and non-depressed participants statistically significant at $P > 0.05$.

* Indicated by Patient Health Questionnaire score of 10 or greater.

stigma to the lowest level observed in the data) and allows for the effects of stigma to differ by identity [34]. In this case, the *NDE* represents the expected residual effect of transgender female gender identity after an intervention to fix stigma to the average level experienced by cisMSM. The *PIE* isolates the effect of transgender female gender identity on depression that is due to mediation by stigma only; put differently, it is the effect that is due to differential levels of stigma between TGW and cisMSM. Finally, the *IMD* is the effect of transgender female gender identity that is due to an interaction between gender identity and stigma, such that the effect of stigma on depression differs for TGW.

Results

Participant characteristics stratified by probable depression are shown in Table 1. Of 1301 participants, 339 (26.1%) were TGW. The median age was 23 (IQR = 21–26). Most participants had less than a high school education (65%, $n = 846$). Of 1261 participants tested for HIV, 11.6% ($n = 146$) were seropositive. Participants with probable depression were older (median of 24 vs. 23, $P = .001$) and reported a higher stigma burden (median of 3 vs. 1

stigma experiences, $P < .001$). TGW (22.7% vs. 12.2%, $P < .001$) and HIV-seropositive participants (26.0% vs. 13.4%, $P < .001$) were more likely screen positive for depression. The prevalence of probable depression was highest in Abidjan (24.5%) and Gagnoa (22%).

Table 2 displays frequencies of stigma items among TGW and cisMSM. All but one of the stigma types (having heard health care providers gossip about them) were more frequently reported by TGW (P from .01 to $<.001$). The most common types of stigma experienced were verbal harassment (59.6% of TGW and 29.0% of cisMSM) and discriminatory remarks or gossip from family (48.4% of TGW and 28.0% of cisMSM). Almost 1 in 5 TGW reported stigma-related physical or sexual violence, versus 5.9% and 3.8% of cisMSM, respectively.

As shown in Table 3, after confounder adjustment, the total excess relative risk of depression attributable to transgender female gender identity was 0.68 (95% CI = 0.36, 1.00). An estimated 69.9% (95% CI = 42.6, 97.1) of this effect was mediated by the higher level of sexual behavior stigma experienced by TGW, corresponding to a *PIE* of 0.54 on the excess relative risk scale (95% CI = 0.40, 0.68). The effect of stigma on depression did not differ

Table 2
Experiences of sexual behavior stigma among transgender women and cisgender men who have sex with men (MSM)

Type of stigma	Transgender women (%) ($n = 339$)	Cisgender MSM (%) ($n = 962$)	P-value
Felt excluded from family activities	56 (16.5)	80 (8.3)	<.001
Family members made discriminatory remarks or gossiped	164 (48.4)	269 (28.0)	<.001
Felt rejected by friends	112 (33.0)	187 (19.4)	<.001
Afraid to go to health services because you worry someone will learn you have sex with men	94 (27.7)	200 (20.8)	.009
Not treated well in a health center	18 (5.3)	24 (2.5)	.012
Heard health care providers gossiping	38 (11.2)	82 (8.5)	.142
Felt that police refused to protect you	38 (11.2)	23 (2.4)	<.001
Arrested on charges related to homosexuality	19 (5.6)	22 (2.3)	.003
Felt scared to walk around in public places	79 (23.3)	96 (10.0)	<.001
Been verbally harassed	202 (59.6)	279 (29.0)	<.001
Been blackmailed	91 (26.8)	154 (16.0)	<.001
Experienced physical violence, related to having sex with men	67 (19.8)	57 (5.9)	<.001
Experienced sexual violence, related to having sex with men	64 (18.9)	37 (3.8)	<.001
Sexual behavior stigma score (med, IQR) [Range = 0–13]	3 (1–5)	1 (0–2)	<.001

Table 3
Decomposition of effects of transgender female identity on depression, mediated by sexual behavior stigma ($n = 1301$)^{*}

Effect	Excess relative risk	(95% CI)	P-value
Total	0.68	(0.36, 1.00)	<.001
Natural direct effect (NDE) [†]	0.21	(−0.07, 0.48)	.139
Pure indirect effect (PIE) [‡]	0.54	(0.40, 0.68)	<.001
Mediated interaction (IMD) [§]	−0.06	(−0.13, 0.00)	.06
—	Proportion mediated	(95% CI)	—
Proportion of effect mediated by sexual behavior stigma	69.9	(42.6, 97.1)	<.001

^{*} Adjusted for age, study site, and education.

[†] Effect of transgender female identity if transgender women experienced the same level of sexual behavior stigma as cisgender MSM.

[‡] Effect of transgender female identity due to mediation by stigma, but not interaction.

[§] Effect of transgender female identity due to mediation by, and interaction with, stigma.

significantly by gender identity (P for mediated interaction = .06), although the point estimate and confidence interval are consistent with a potentially smaller effect of sexual behavior stigma on depression among TGW relative to cisMSM (−0.06, 95% CI = −13.0, 0.0). The expected residual inequality in depression (NDE) for TGW, were sexual behavior stigma equalized to its level among cisMSM, was not statistically significant ($NDE = 0.21$; 95% CI: −0.07, 0.48; $P = .139$).

Discussion

Among TGW and cisMSM recruited across five cities in Côte d'Ivoire, 22.7% and 12.2%, respectively, screened positive for major depression. Although results are not directly comparable due to differences in sampling and measurement, the prevalence of probable depression among TGW in this sample was lower than has been found in high-income countries [35], where upward of half of TGW have been found to be depressed [14,36,37]. Nevertheless, the prevalence of depression among both TGW and cisMSM in this sample was higher than the 6.6% estimated prevalence across Africa and the Middle East [38].

Enacted, perceived, and anticipated sexual behavior stigmas were common and greater exposure to stigma accounted for the observed inequality in depression between TGW and cisMSM. Associations between stigma and depression among TGW are well established [9,14,17,36]. However, there are few studies that include both cisgender comparison groups as well as stigma measures [39], traditionally precluding tests of the hypothesis that stigma mediates mental health inequalities [40]. Furthermore, studies examining inequalities between sexual and gender minority groups are rare, particularly in low- and middle-income countries. These results suggest that in Côte d'Ivoire, there exists a mental health inequality between transgender women and cisMSM, which is driven by greater exposure to stigma among TGW. Although intersectional attributions were not measured, the higher burden of stigma among TGW may reflect compounded stigmas related to gender identity, sexual behavior, and HIV status. Both perpetrators of stigma and survey respondents may be unable to disentangle these socially linked attributes, for example, gender non-conforming birth-assigned males are more likely to be targeted for perceived same-sex behavior [21].

Some limitations of this research should be noted. First, causality cannot be established from these cross-sectional data. The measures used provide some temporal ordering (as depression is measured over a 2-week timeframe and stigma over the lifetime); however, the relationship between stigma and depression would ideally be evaluated through longitudinal studies measuring incident depression. Second, although respondents may also report stigma related to linked attributes, the items

used to measure stigma were specific to sexual behavior stigma. To the extent that TGW do not include experiences of gender-based stigma in their reports, this measure will underestimate their stigma burden and thus its contribution to the observed disparity in depression. Finally, although this study used respondent-driven sampling, the potential for self-selection bias remains. Such bias may contribute to the lower prevalence of depression observed in this study as compared to estimates from other settings, if cisMSM and TGW who are unwilling to disclose their sexuality or gender identity have a higher prevalence of depression.

These findings have implications for health and human rights work with TGW and cisMSM in sub-Saharan Africa. For research, they underscore the critical need to examine heterogeneity of health outcomes by gender identity, as well as the intervenable mechanisms that may contribute to gendered inequalities. For programming, specific efforts to mitigate stigma affecting transgender women are warranted alongside initiatives to reduce sexual behavior stigma more broadly.

Acknowledgments

Data collection was supported by a grant from the Global Fund to Enda Santé. Additional data analyses and SB's effort was supported by the National Institutes of Mental Health and Office of AIDS Research of the National Institutes of Health, United States under award number R01MH110358. This publication was made possible with help from the Johns Hopkins University Center for AIDS Research, an NIH-funded program (P30AI094189), which is supported by the following NIH Co-Funding and Participating Institutes and Centers: NIAID, United States, NCI, United States, NICHD, NHLBI, United States, NIDA, United States, NIMH, United States, NIA, United States, FIC, NIGMS, United States, NIDDK, United States, and OAR. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH. The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the article. AS was supported by a Canadian Institutes of Health Research Fellowship.

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Appendix

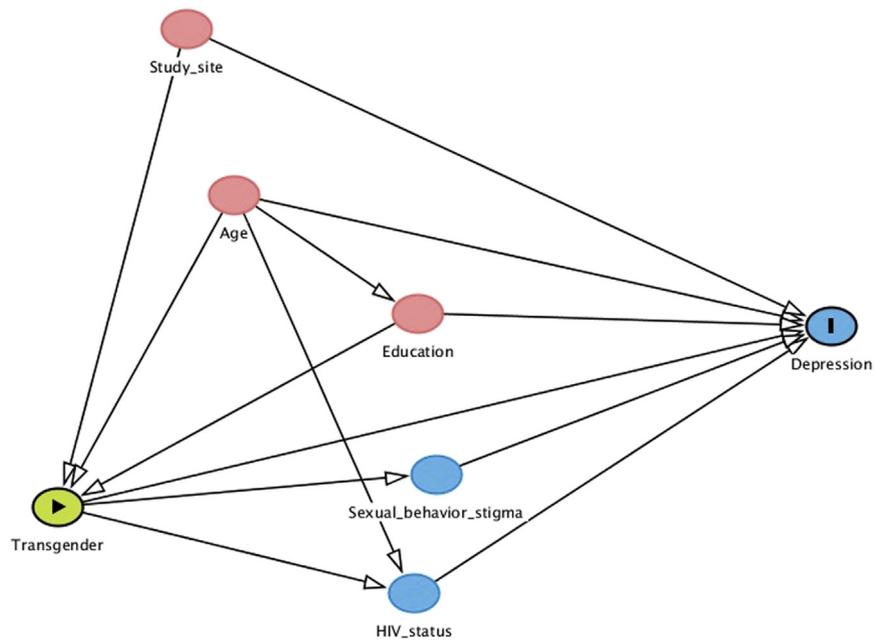


Fig. S1. Directed acyclic graph for the relationship between transgender female identity and depression. Created in DAGitty.