





BMJ Open Scoping review of HIV-related intersectional stigma among sexual and gender minorities in sub-Saharan Africa

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ABSTRACT

Objectives Sexual and gender minority (SGM) populations in sub-Saharan Africa (SSA) are disproportionately impacted by HIV and often face multiple HIV-related stigmas. Addressing these stigmas could reduce SGM HIV vulnerability but little is known about how the stigmas operate and intersect. Intersectional stigma offers a lens for understanding the experiences of stigmatised populations and refers to the synergistic negative health effects of various systems of oppression on individuals with multiple stigmatised identities, behaviours or conditions. This review aims to (1) assess how often and in what ways an intersectional lens is applied in HIV-related stigma research on SGM populations in SSA and (2) understand how intersectional stigma impacts HIV risk in these populations.

Design Scoping review following the Preferred Reporting Items for Systematic Reviews and Meta-Analysis extension for Scoping Reviews.

Data sources Public health and regional databases were searched in 2020 and 2022.

Eligibility criteria Articles in French and English on HIV-related stigma and HIV outcomes among men who have sex with men, women who have sex with women and/or transgender individuals in SSA.

Data extraction and synthesis Articles were screened and extracted twice and categorised by use of an intersectional approach. Study designs and stigma types were described quantitatively and findings on intersectional stigma were thematically analysed.

Results Of 173 articles on HIV-related stigma among SGM in SSA included in this review, 21 articles (12%) applied an intersectional lens. The most common intersectional stigmas investigated were HIV and same-sex attraction/behaviour stigma and HIV, same-sex attraction/behaviour and gender non-conformity stigma. Intersectional stigma drivers, facilitators and manifestations were identified across individual, interpersonal, institutional and societal socioecological levels. Intersectional stigma impacts HIV vulnerability by reducing HIV prevention and treatment service uptake, worsening mental health and increasing exposure to HIV risk factors.

Conclusion Intersectional approaches are gaining traction in stigma research among SGM in SSA. Future research should prioritise quantitative and mixed methods investigations, diverse populations and intervention evaluation.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ Studies published in both English and French were included in the review.
- ⇒ The review was informed by the Health Stigma and Discrimination Framework.
- ⇒ The review was focused on sub-Saharan Africa, which restricts the generalisability of its findings.
- ⇒ Searching for eligible articles at multiple time points strengthens the comprehensiveness of the review.

INTRODUCTION

Sub-Saharan Africa (SSA) is home to 65% of people living with HIV despite comprising only 12% of the world's population as of 2020.¹ Around the globe, sexual and gender minorities (SGM) bear a disproportionate burden of HIV and SSA is no exception.^{2–4} Sexual minorities include individuals who are attracted to or have sexual contact with people of the same gender and gender minorities include individuals whose gender identity or expression is different from their sex assigned at birth.⁵ In Western and Central Africa, the HIV prevalence among men who have sex with men (MSM) and transgender women (TGW) is 11 times and 8 times that of the general adult population, respectively.⁶ In Eastern and Southern Africa, the prevalence among both MSM and TGW is 2 times the general adult prevalence.⁶ These statistics highlight the importance of understanding and addressing the vulnerability to HIV-related morbidity and mortality SGM in SSA face. Robust HIV prevalence estimates among women who have sex with women (WSW) and transgender men (TGM) in SSA are severely limited^{6–9}; however, findings on the prevalence of HIV^{10 11} and HIV risk behaviours^{11 12} within these populations globally support the need for investigating the



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risks of HIV infection and barriers to HIV prevention and care services among WSW and TGM as well.

Structural, social and individual factors contribute to the elevated HIV vulnerability among SGM, and stigma plays a key role.^{13–18} Stigma is a social process involving labelling and stereotyping in the context of power imbalances that leads to status loss, discrimination and social inequity.^{19–20} Stigmas associated with HIV, same-sex sexual attraction or behaviour (SSSAB) and/or gender non-conformity exist on every inhabited continent.^{21–27} SGM in SSA in particular face heightened vulnerability to stigma and discrimination as consensual same-sex acts are criminalised in over half of SSA countries, representing nearly half of all such nations globally.^{2–28–30} Stigma has been shown to reduce SGM engagement with HIV services.^{31–32} Stigma is a key focus of many HIV risk-reduction interventions.^{33–34}

In recent years, researchers have moved to investigate how individuals experience multiple stigmas.^{35–37} Intersectionality describes how social hierarchies of oppression interconnect, creating overlapping systems of disadvantage.^{38–39} This concept has been applied to the study of stigma in public health contexts and described with evolving terms including layered stigma, double stigma and others.^{40–45} Intersectional stigma, a term coined by Dr. Michele Berger, denotes the synergistic and coconstitutive negative effect on well-being and health produced by overlapping systems of oppression at the intersection of multiple identities, behaviours or conditions that are stigmatised.^{26–37–41–46–47} Quantitative studies have found that intersectional HIV stigma, that is, interaction effects of HIV stigma and other stigmas, predicts poorer health outcomes among MSM in Asia and North America^{26–48–49} and qualitative studies have used it to understand health inequities.⁴⁶ However, there has been limited scholarly attention on SGM in SSA using an intersectional lens. It is imperative that scientific understanding of HIV-related intersectional stigma is shaped by the experiences of SGM in SSA lest externally generated knowledge be uncritically applied to them, resulting in the misinterpretation of their unique perspectives and the development of interventions poorly suited to their unique sociopolitical contexts.

Scholars have outlined a need for research on the experiences of HIV-related intersectional stigma among SGM in SSA,^{13–14–50–51} particularly of transgender persons and WSW,^{15–52–53} but to date there has been no review of the available literature. This review has two objectives. First, to assess how often and in what ways an intersectional lens is used in research on HIV-related stigma among SGM populations in SSA. Second, to understand how intersectional stigma is conceptualised and experienced as impacting HIV risk in these populations.

METHODS

A scoping review methodology was employed, of which full details are published elsewhere⁵⁴ but are described briefly here. This review was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analysis extension for Scoping Reviews.⁵⁵

Study eligibility

Records included in this review met all of the following criteria: (1) discuss or measure stigma related to HIV status or risk factors; (2) present data on HIV-related outcomes (eg. serostatus or risk factors); (3) present primary or secondary data on MSM, WSW, TGM or TGW; (4) be conducted in a United Nations-designated SSA country⁵⁶; and (5) be published in English or French after 1991. Exclusions included review papers, conference abstracts and mixed-region data. Grey literature was considered if it presented primary or secondary data analysis. Only studies applying an intersectional approach were comprehensively reviewed, extracted and analysed. Studies were designated as intersectional if they incorporated an intersectional approach to at least some elements of the analysis or presentation of their stigma findings. Studies without an intersectional approach were included for basic review so we could calculate the proportion of research on HIV-related stigma among SGM in SSA using an intersectional approach and distinguish possible trends in the intersectional studies.

Search strategy

Yale School of Public Health librarian, author KN, searched public health databases Medline (Ovid), Global Health (Ovid), and Embase (Ovid); bibliographic databases: Scopus, Web of Science Core Collection (as licensed at Yale), and regional databases; Africa-Wide Information (EBSCOhost) and Africa Index Medicus (through Global Index Medicus) in November 2020. The searches in Medline, Global Health, Embase, Scopus, Web of Science Core Collection and Africa Index Medicus were updated in July 2022. Search strategies can be found in online supplemental file 1.

Screening, data abstraction and theoretical framework

Records were deduplicated and imported into Covidence. Four reviewers screened 50 articles, achieving high inter-rater reliability (Cohen's kappa of 0.83).⁵⁷ Titles and abstracts, and then full texts were screened by two independent reviewers; a third resolved disputes. Data were extracted in duplicate by pairs of reviewers using a standardised form and then combined by consensus.⁵⁴ For intersectional studies, we abstracted basic information (eg, setting, population), conceptualisation components (eg, theoretical framework), methods and results. Only basic information and stigma type were abstracted for non-intersectional studies.

We used thematic content analysis to categorise findings on intersectional stigma. This process was informed by the Health Stigma and Discrimination (HSD) framework, which employs constructs from

socioecological models.^{58 59} Socioecological models for HIV risk purport that factors across the individual, interpersonal, institutional and societal levels shape HIV vulnerability.^{59–61} HSD provides a framework for understanding what drives and facilitates stigma, how intersecting stigmas are applied to individuals, how stigma is manifested across socioecological levels (definitions provided in results), and the impacts of stigma on health.^{58 59} Within HSD, stigma drivers are individually held negative beliefs, facilitators are cultural norms and laws, and manifestations include experiences of stigmatising behaviours as well as anticipated, perceived and internalised stigma.⁵⁹ Stigma marking is the process of applying stigma to individuals and resilience is the process of ‘overcoming and resisting stigma’.⁵⁹ In this review, extracted data on intersectional stigma were reviewed by three authors for key findings and categorised based on HSD constructs. The authors iteratively compared their categorisations and re-read the articles as needed.

Patient and public involvement

Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

RESULTS

Search results

The searches yielded a total of 6972 records, 2086 records were screened and 173 included (figure 1).⁶² Of these, 21 were intersectional stigma articles, which were comprehensively reviewed.

This review classified seven records^{14 50 63–67} as fully intersectional stigma articles, indicating that the study results or intervention focused predominantly on intersectional stigma. Fourteen articles^{13 68–80} were partially intersectional stigma studies incorporating an intersectional approach to some elements of the analysis or presentation of their findings. We also identified 10 articles^{81–90} that studied multiple stigmas in a non-intersectional manner and 142 articles^{4 13 16–18 21 51 52 91–224} that studied one stigma in one population of SGM or studied one stigma in each of multiple populations (eg, SSSAB stigma only among MSM and transgender stigma only among TGW). A summary of each intersectional stigma study (n=21) appears in online supplemental file 2 and a summary of each non-intersectional stigma study (n=152) appears in online supplemental file 3. Approximately one quarter (n=5, 24%) of intersectional studies evaluated an intervention (table 1). MSM were included in over 90%

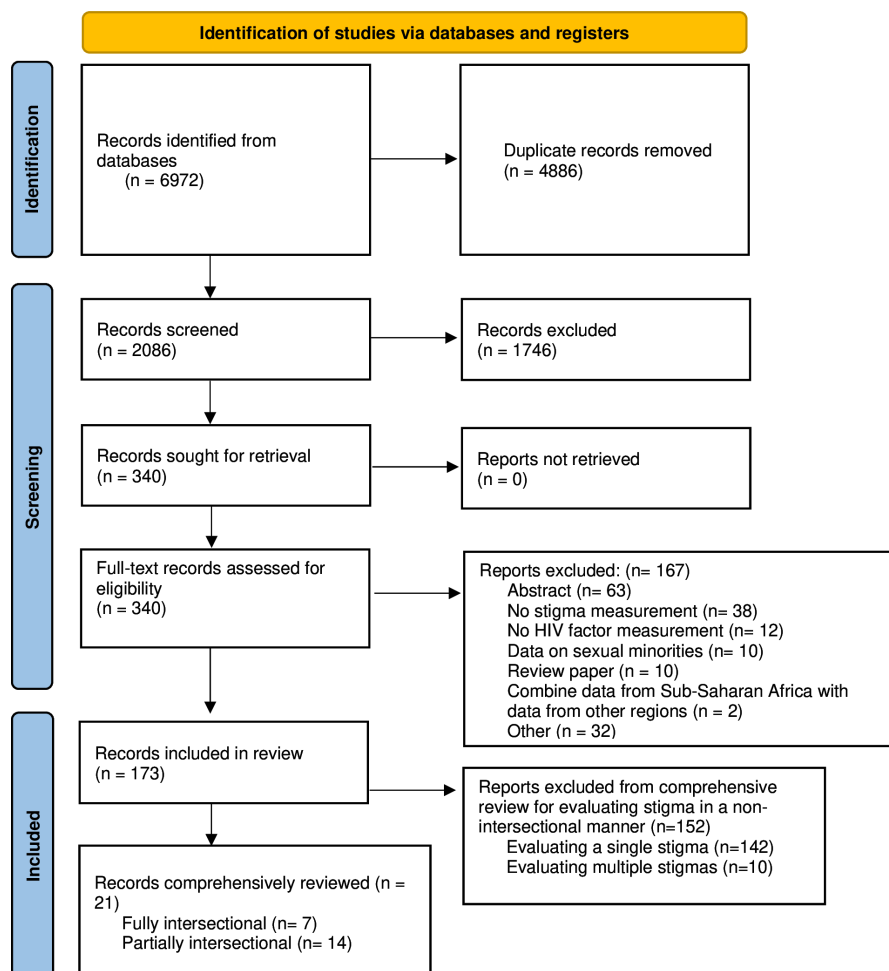


Figure 1 Flow diagram of record selection.

**Table 1** Characteristics of included studies

Study category	Intersectional stigma studies		Non-intersectional stigma studies		Study category	Intersectional stigma studies	
	n=21	%	n=152	%		n=21	%
Sexual or gender minority population*					Research method		
MSM	19	90	146	96	Qualitative	13	62
WSW	1	5	14	9	Quantitative	3	14
TGM	2	10	1	1	Mixed methods	5	24
TGW	3	14	10	7	Study design*		
Other†	4	19	6	4	Cross sectional	19	90
Year					Longitudinal		
1996–2000	0	0	1	1	Interventional study	4	19
2001–2005	0	0	5	3	Observational study	17	81
2006–2010	0	0	5	3	Sample size of sexual or gender minority		
2011–2015	6	29	40	26	0–50	9	43
2016–2020	7	33	77	51	51–150	4	19
2021–2022	8	38	24	16	150+	6	29
Region of sub-Saharan Africa					Unspecified		
Western	11	52	47	31	HIV outcomes quantitatively assessed or qualitatively described*		
Eastern	3	14	60	39	HIV Status	15	71
Southern	7	33	48	32	Access to HIV prevention or care services	18	86
Central	0	0	7	5	Viral suppression	2	10
Setting					Condom usage		
Urban	15	71	100	66	Transactional sex (provision or patronage)	4	19
Rural	0	0	9	6			
Both	3	14	21	14			
Other or unknown	3	14	22	14			

*Columns sum to greater than 100% because more than one option is possible.

†Other: unspecified or other sexual and/or gender minorities.

MSM, men who have sex with men; TGM, transgender men; TGW, transgender women; WSM, women who have sex with women.

of all studies. TGM, TGW and other SGM (eg, individuals identifying as transgender with no specific gender,¹⁴ bisexual,¹⁶¹ etc) comprised a greater proportion of the subjects of the intersectional stigma studies than non-intersectional. Intersectional studies were more likely to have been published recently with 38% published in the last 2 years alone, 2021–2022.

Most (62%, n=13) of the intersectional studies were qualitative, a quarter (24%, n=5) were mixed methods while only 14% (n=3) were quantitative. HIV outcomes investigated included HIV status,^{14 15 50 64 66–71 73–75 77 79} service access,^{14 15 50 63–65 67–76 78 80} viral suppression,^{15 66} and risk behaviour pertaining to condom usage or transactional sex.^{14 50 65 66 68 73 74 79 80} Two-thirds (n=14) did not explicitly reference a theoretical framework. Of those that did, seven unique frameworks were identified. Four

were epidemiological models of the relationship between individuals, their environments, and health risks: socio-ecological model,^{65 67} minority stress model,⁶⁶ network-individual-resource model of HIV prevention⁶⁶ and syndemics theory.¹⁴ Three informed intervention development and/or adaptation: Assessment, Decision, Adaptation, Production, Topical Experts, Training, Testing,^{63 67} Positive Health, Dignity and Prevention Framework⁵⁰ and self-determination theory.^{66 73}

There was variability in how intersectional stigmas were measured or explored in the eight quantitative or mixed methods studies. None of the studies explicitly stated they used a previously validated and published intersectional stigma measure. One study combined multiple validated scales for gender non-conformity stigma and HIV stigma.⁶⁶ Another study used a validated HIV stigma scale

Table 2 Summary of stigmas described

Study category	Intersectional stigma studies		Non-intersectional stigma studies	
	n=21	%	n=152	%
Combinations of stigmatised attributes				
HIV + same sex attraction/behaviour	7	33	8	5
HIV + same sex attraction/behaviour + gender non-conformity	7	33	2	1
Same-sex attraction/behaviour + gender non-conformity	2	10	0	0
Same-sex attraction/behaviour + transgender identity	2	10	0	0
HIV + gender non-conformity	1	5	0	0
HIV + same sex attraction/behaviour + transgender identity	1	5	0	0
HIV + same sex attraction/behaviour + transgender identity + sex work	1	5	0	0
Individual stigmatised attributes*				
Same-sex attraction/behaviour	20	95	130	86
HIV	18	86	31	20
Gender non-conformity	10	48	2	1
Transgender identity	3	14	3	2
Sex worker	1	5	0	0
Socioecological levels of stigma*†				
Individual (internalised or anticipated) ‡	20	95		
Interpersonal §	17	81		
Institutional/organizational ¶	17	81		
Societal **	16	76		

*Columns sum to greater than 100% because more than one option is possible.
 †Socioecological levels were defined based on the Health Stigma and Discrimination Framework (50).
 ‡When an individual internalises publicly held negative beliefs about an identity, behaviour or health condition, and applies these beliefs to themselves or when an individual anticipates, fears and perceives negative attitudes or discrimination will be directed at them from others in the future.
 §When members of the public direct stigma towards individuals.
 ¶When practices in institutions actively disadvantage a stigmatised group or members of an institution actively disadvantage a stigmatised group.
 **When cultural and political structures, including public policy and law, disadvantage a stigmatised group.

and investigated other stigmas qualitatively.⁷⁴ Four studies adapted or developed their own scales for measuring SSSAB and/or gender non-conformity stigma and investigated additional stigmas qualitatively.^{15 67 77 79} Two mixed methods studies only investigated stigma qualitatively (and focused quantitative analyses on HIV status, risk, and behaviour).^{68 76}

Types of stigmas described

Twelve per cent (n=21) of all 173 articles investigating HIV and stigma among SGM in SSA did so in an intersectional manner. Stigma associated with gender expression was categorised as transgender stigma among transgender populations and as gender non-conformity stigma among cisgender populations and populations of mixed or unknown gender identity. The most studied intersectional stigmas were HIV status and SSSAB and HIV status, SSSAB and gender non-conformity (table 2). Other intersectional stigmas investigated were SSSAB and gender non-conformity; SSSAB and transgender identity; HIV status and gender non-conformity; HIV

status, SSSAB and transgender identity (and sex work). Most articles (87%, n=152) did not use an intersectional lens; of these, 94% (n=142) investigated 1 stigma and 6% (n=10) investigated 2 or more stigmas. The frequency in which different stigmas were investigated together and the number of articles investigating each stigma is represented in figure 2.²²⁵

The most investigated stigma was SSSAB followed by HIV status, gender non-conformity, transgender identity and sex work (figure 2). Non-intersectional studies predominantly focus on SSSAB stigma (86%), with minimal attention to others like HIV (20%) and gender non-conformity stigma (1%). Intersectional studies exhibited a broader scope, extensively investigating HIV stigma (86%), gender non-conformity (48%) and other attributes. This suggests intersectional investigations give us greater insight into how less-studied stigmas impact HIV vulnerability among SGM in SSA.

Thematic analysis of intersectional stigma studies revealed seven themes (box 1).

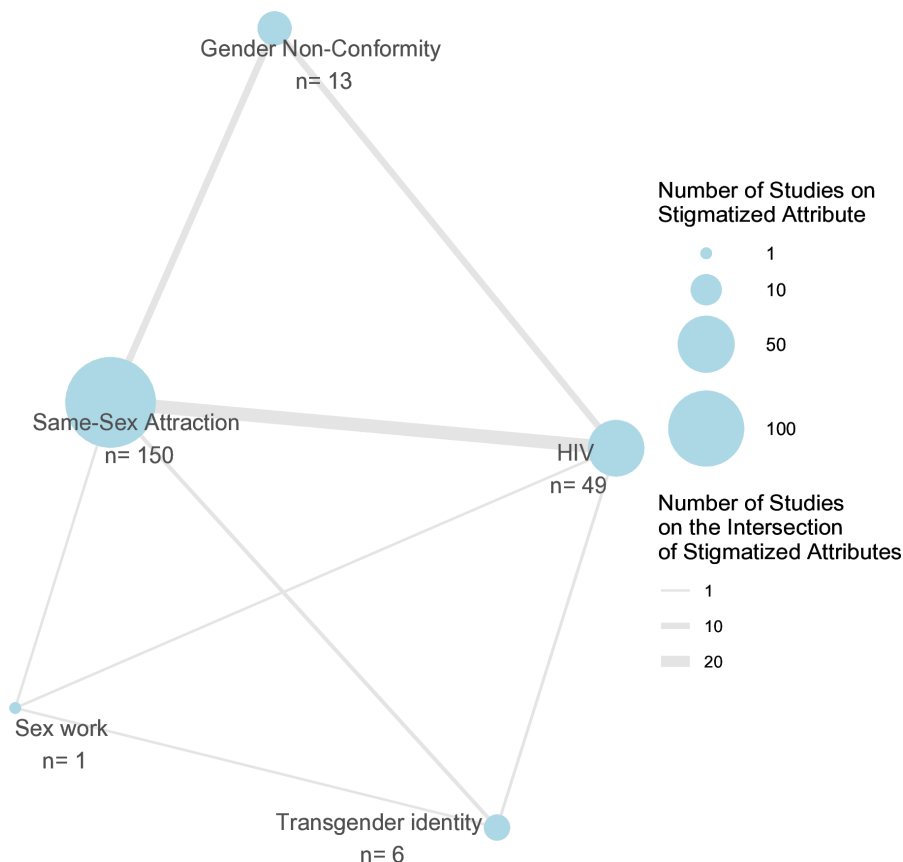


Figure 2 Network visualisation of stigmatised attributes. This illustrates the relationships between stigmas and the frequency in which their intersections are studied. The nodes in this figure represent stigmatised attributes and the size of each node represents the number of articles in the scoping review that focus on the stigmatised attribute. The width of the links represents the number of articles that analyze the intersection between the two stigmatised attributes.

Intersectional stigma drivers and facilitators

Drivers and facilitators of HIV-related intersectional stigma include cultural norms on gender and sexuality, religious beliefs, misconceptions on HIV transmission and laws, such as the criminalisation of SSSAB. Community members, including healthcare workers, and friends and family of SGM often view SGM as cultural and/or religious deviants because SSSAB, gender non-conformity and transgender identities are deemed sinful, immoral, inappropriate and/or foreign practices.^{63 67 69 70 73–75 80} Many healthcare workers and members of the public perceive SSSAB and non-conforming gender expression as a choice that SGM individuals should be counselled or coerced away from making.^{67 69 73 74 80} Some also believed SGM status to be psychopathology or a result of psychopathology.^{63 67 80} Among community members and some healthcare workers, HIV stigma is driven by inadequate HIV knowledge and misconceptions related to its transmission and clinical progression.^{50 63 67 75} A driver of combined HIV and SSSAB intersectional stigma among some health workers was the belief that SGM with HIV, particularly MSM, deserved blame for contracting and spreading HIV due to their SSSAB.^{65 71 75 76} Stigma is facilitated by laws that criminalise SSSAB and institutional norms or policies that fail to protect SGM.^{50 69 74 80} For example, SGM experienced harassment from law enforcement and felt unsafe

reporting violence to law enforcement due to their SGM status because of the criminalisation of SSSAB.^{50 69 74}

Intersectional stigma marking

Stigma marking can occur differently across intersections of stigmatised attributes. Disclosure and/or social judgement of one's gender expression are key steps in the stigma marking process for SSSAB, gender non-conformity and transgender identity stigmas. SGM reported experiencing stigma due to their SGM status either as a result of disclosing their sexual orientation or transgender identity, or as a result of their identity or orientation being assumed based on their gender expression.^{14 67 70 71 74 78 80} SGM and providers explained that MSM who are gender non-conforming in their dress and mannerisms are more likely to be subject to verbal and physical harassment and abuse from community members and poor treatment from healthcare workers than MSM who are gender conforming.^{67 70 78}

Intersectional stigma experiences

Intersectional stigma is manifested at all socioecological levels including from friends and family, and at healthcare facilities and it is conceptualised as synergistic. SGM experience stigma intrapersonally, within interpersonal relationships, from institutions and on the societal level.

Box 1 Key themes
Intersectional stigma drivers and facilitators

1. Drivers and facilitators of HIV-related intersectional stigma include:
 - a. Cultural norms and religious beliefs on gender and sexuality that deem sexual and gender minorities (SGM) immoral or sinful and/or blame SGM for HIV
 - b. Discriminatory laws and policies such as the criminalisation of same-sex sexual behaviour
 - c. Misconceptions on HIV transmission

Intersectional stigma marking

2. Stigma marking can occur differently across intersections of stigmatised attributes.
 - a. SGM experience stigma after their sexual orientation or transgender identity is disclosed, or after their SGM status is assumed based on their gender expression

Intersectional stigma experiences

3. Intersectional stigma is manifested at all socioecological levels including from friends and family, and at healthcare facilities and it is conceptualised as synergistic
 - a. Individual: SGM internalise and anticipate maltreatment based on stigmatised identities and behaviours
 - b. Interpersonal: stigma manifests interpersonally through gossip, social exclusion, family rejection, verbal harassment, sexual assault and physical violence
 - c. Institutional: within healthcare institutions, SGM experience harassment, delays in care, refusal of care and religious rebukes from providers
 - d. Structural: criminalisation of same-sex sexual behaviour facilitates harassment by law enforcement and community members
 - e. Transgender identity stigma can intensify enacted sexual attraction/behaviour stigma among TGW, sexual behaviour stigma can intensify internalised HIV stigma among MSM living with HIV, and gender non-conformity stigma can intensify anticipated and enacted sexual behaviour stigma among MSM
 - f. HIV stigma is internalised on the individual level and manifested in friend networks differently among MSM living with HIV and men who have sex with women living with HIV

Intersectional stigma outcomes on HIV and mental health

4. Anticipated stigma leads SGM to hide stigmatised identities and behaviours from healthcare workers, friends, family and the public
 - a. Non-disclosure of SGM identity in fear of discrimination, breaches of confidentiality and rejection is extremely common
 - b. SGM self-monitor their gender expression to be more culturally-conforming
 - c. SGM with HIV hide their medication from household members, family and friends
5. Intersectional stigma poses barriers to SGM accessing and seeking HIV and sexual health-related care
 - a. SGM commonly delay, avoid and/or withdraw from HIV counselling/testing services or treatment due to stigma
 - b. Disclosing same-sex sexual behaviour can result in name-calling and blame for contracting HIV from providers
 - c. Some SGM conceal relevant health information from providers to avoid inadvertent disclosure of their SGM status
6. Internalised intersectional stigma can lead to adverse mental health outcomes, including:
 - a. Feelings of isolation, guilt, shame and disappointment
 - b. Vulnerability to depression, anxiety and suicidal ideation

Continued

Box 1 Continued
Resilience in stigmatising environments

7. Social support and friendly providers help SGM cope and improve linkage with health services
 - a. SGM disclose SGM status and serostatus when they anticipate a positive response
 - b. Some SGM prefer non-profit-run and/or SGM-focused clinics to government facilities because providers tend to be less stigmatising
 - c. Social support and access to safe spaces can mediate impact of intersectional stigma

SGM with and without HIV reported internalising negative/stigmatising views about their gender and sexual identities and anticipating maltreatment based on their seropositive status and/or SGM status. On the interpersonal level, stigma manifestations range from gossip, exclusion, verbal and physical harassment to violence and abuse.^{14 50 63 66–69 71 73 74 76–80} SGM are rejected by family members and evicted from their homes.^{50 63 68 73 74 77} They can experience ostracisation from friends when their SGM or seropositive status is made known.^{50 63 63 65 73–75 77} SGM report experiencing physical abuse, victimisation and threats of violence from family, friends, community members and police officers due to their SGM status and are aware of other SGM experiencing physical violence up to and including murder.^{50 66 69} TGM, WSW and other SGM reported being targeted for ‘corrective rape’ motivated by stigma, sometimes resulting in HIV infection.^{14 74 77 79}

In healthcare settings, especially public and government-owned clinics, SGM face harassment, delays and refusal of care from providers.^{14 66 67 70} Healthcare workers engage in medically unnecessary intrusive questioning and attempt to pressure SGM away from SSSAB using Christian or Islamic religious teachings.^{67–70 73 75 80} Police have been reported to harass SGM due to SGM status as well as engagement in sex work.^{14 69} SGM also described how societal-level stigmatisation including criminalisation, and discrimination (eg, in employment and housing) increased their vulnerability to economic insecurity.^{50 65 74} Some SGM experiencing economic marginalisation engaged in transactional sex to meet their basic needs, which puts them at elevated risk of HIV.^{14 74}

Investigations into how SGM conceptualise and report the comparative experiences of stigma between groups with a single versus multiple stigmatised attributes reveal the synergistic and co-constitutive nature of intersectional stigmas. In Southern Africa, MSM living with HIV described a HIV diagnosis as a ‘double whammy’, resulting in ‘greater feelings of internalised AIDS stigma’ as ‘compared with heterosexual experiences’ of the disease.^{64 65 78} SSSAB stigma modified and exacerbated their experience of HIV stigma. MSM living with HIV also experienced intragroup stigmatisation within MSM peer networks.^{64 65 78} They experience reduced social support



and avoid picking up antiretroviral therapy out of fear of gossip and social exclusion specifically from other MSM.^{64 65 78} A study using an intercategory approach to investigate the intersectionality of sexual behaviour stigma across trans and cisgender identities found that TGW were more likely to report exclusion, harassment, and poor treatment due to their having sex with men than cisgender MSM.⁷⁹ The presence of an additional stigmatised identity can transform the conceptualisation and experience of other stigmas such that the intensity and nature of the resultant stigma is more than the simple addition of multiple stigmas.

Intersectional stigma outcomes on HIV and mental health

Anticipated stigma leads SGM to hide stigmatised identities and behaviors from healthcare workers and community members. A prominent theme across studies was the concealment of SGM identity, HIV status and sex worker status to reduce the likelihood of encountering stigma. Many SGM prefer to conceal their SGM status and HIV status from healthcare providers due to fears of discrimination, delay/denial of care, being reported to the police and breaches of confidentiality.^{50 63 65 67 69–71 74 76–78 80} SGM commonly hide their HIV status and SGM status from household members, family and friends due to fear of exclusion and maltreatment.^{71 80} SGM, especially men, feel pressured to behave in ways considered consistent with cultural gender norms to be treated fairly and to protect their safety, and describe vigilant self-monitoring to adjust their gender expression based on the social context.^{63 67 77 78 80} For example, MSM described feeling ‘forced’ to engage in concurrent sexual relationships with or marriage to women to keep their sexual orientation clandestine and/or to fulfil cultural gender expectations, which can increase their vulnerability to HIV.^{14 50}

Intersectional stigma poses barriers to SGM accessing and seeking HIV and sexual health-related care. SGM commonly reported stigma as a motivation for avoiding or delaying HIV testing^{14 50 65 71 73–75 78 80} and partner testing.⁵⁰ At healthcare facilities, SGM reported sometimes concealing relevant health information pertaining to stigmatised identities from healthcare workers due to fear of their SGM status being discovered.^{50 65 69 74 78 80} For example, MSM did not disclose symptoms of sexually transmitted infections affecting the anus or experiences of rape to healthcare providers, hence self-medicate or avoid healthcare. SGM living with HIV hide medication or withdraw from care due to stigma.^{50 65 69 71 73} They also travel long distances to seek care in areas they are not known to avoid being discovered by friends or family.^{50 69 73}

Internalised intersectional stigma can lead to adverse mental health outcomes. SGM in SSA may internalise publicly held negative beliefs about their gender and/or sexual identity and develop feelings of guilt, shame, isolation and disappointment in themselves and the people around them.^{14 50 63 65 70 72–74 76} This is especially true for SGM living with HIV. As a result of stigmatisation, devaluation and discrimination, many SGM in

SSA experience stress, depression, anxiety and poor mental health.^{50 65 77} Internalising intersectional stigma can also increase vulnerability to suicidal ideation and suicide.^{14 50 73} SGM sometimes turn to behaviours that increase their vulnerability to HIV to cope with the negative impacts on mental well-being stemming from stigma such as substance abuse and transactional sex.^{14 50}

Resilience in stigmatising environments

Social support and friendly providers help SGM cope with unsupportive environments and are associated with increased willingness to seek sexual health services. Despite the reported intersectional stigma, researchers also found instances where SGM have been able to confide in healthcare workers, friends and relatives concerning their gender identity, SSSAB and/or HIV status.^{50 63 71 73 78 80} Disclosure is conditioned on anticipation of positive reception, support and confidentiality. Some have been able to disclose to their healthcare providers and relatives and have received affirmation and support.^{50 63 66 70 71 73 78 80} A difference in comfort disclosing across facility types was also noted, with some avoiding disclosure at public facilities fearing confidentiality breaches. Instead, they prefer to disclose at non-profit facilities, particularly facilities focused on meeting the needs of SGM, because of the friendliness and non-stigmatising approach of providers, knowledgeability of SGM needs, and confidentiality.^{63 69 70 73 78 80} Healthy social support and access to safe spaces were found to mediate some of the negative impacts of intersectional stigma on well-being and healthcare seeking.^{66 68 70 77}

DISCUSSION

This review explored the use of an intersectional approach in HIV-related stigma research and the impact of intersectional stigma on MSM, WSW, TGM and TGW in SSA. Of all studies reviewed, relatively few employed an intersectional lens or included non-MSM SGM populations. The intersectional studies were primarily observational and qualitative and they explored stigmas less commonly studied in the non-intersectional studies, such as gender non-conformity and transgender stigma. Intersectional stigmas associated with HIV, SSSAB, gender non-conformity, transgender identity and sex work operate at individual, interpersonal, institutional and societal socioecological levels. This review provided insight into the diverse ways that HIV-related stigmas intersect in the lives of SGM in SSA. The intersectional stigmas most frequently studied were HIV and SSSAB stigma and HIV, SSSAB and gender non-conformity stigma. Stigma drivers include religious beliefs, cultural gender norms and blame for SGM living with HIV, while laws criminalising SSSAB facilitate stigma. Judgement of gender expression and disclosure of SGM status enable stigma marking. Gender non-conformity stigma increases the intensity and likelihood of experiencing SSSAB stigma, especially for MSM and in healthcare settings. Transgender identity

stigma can intensify enacted SSSAB stigma among TGW and SSSAB stigma can intensify internalised HIV stigma among MSM living with HIV. The layering of additional stigmas can decrease access to social support, which is important for coping, especially among SGM living with HIV. Anticipated stigma leads SGM to delay and avoid HIV testing and to conceal their SGM status from healthcare workers and community members. Internalised stigma worsens mental health and increases vulnerability to HIV risk factors. However, social support and friendly healthcare providers help SGM cope and improve their health-seeking behaviour. Thus, intersectional stigma among SGM in SSA forms an important area for further research and an impactful domain for intervention development.

This review highlights associations between experiencing intersectional stigma and poorer HIV-related health outcomes and behaviours (eg, HIV testing). This is consistent with the HSD framework which asserts that the process of stigma marking enables the drivers and facilitators of stigma to produce negative health outcomes among stigmatised populations. This is also in accord with findings on intersectional stigma's negative impact among MSM and women in North America, Asia and Europe.^{32 226–228} This review highlighted differences in the experience of stigma and its connection to HIV outcomes across intersections of stigmatised identities and across socioecological levels, highlighting potential key areas of intervention. For example, health-seeking behaviour is poorer at clinics where SGM experience or anticipate stigma so there is a need for institutional-level interventions that address drivers and facilitators of HIV and SGM-related stigmas within health facilities. Thus, this review demonstrated the value of intersectional approaches for advancing understanding of stigma and areas in which it can be intervened upon.^{35 37} We recommend that more public health stigma research among SGM in SSA use an intersectional lens because of its advantages in comprehensively illuminating their multifaceted experiences.

Most intersectional articles in this review documented intersectional stigma above just the individual socioecological level, in fact, even the least commonly studied level of societal stigma was discussed in three-quarters (n=16) of the articles. Bowleg argues that there has been a tendency in intersectional stigma public health research in the USA to privilege overly individualistic conceptualizations of intersectional stigma that focus only on individual-level stigma within populations with multiple stigmatised attributes and this obscures the role of social-structural systems in perpetuating stigma and generating health inequalities.⁴⁷ The HSD framework and the concept of intersectional stigma as put forward by Berger both emphasise how stigmatisation is a process that emerges from and is rooted in interlocking systems of oppression and therefore cannot be reduced to individual-level stigmatising experiences and behaviours.^{36 47 58} In such a view, to reduce health inequalities the focus of stigma-reduction efforts must be multilevel interventions that address the social-structural

forces in which stigmas are rooted.^{36 47 58} By using HSD and the socioecological model, this review highlights how intersectional stigma among SGM in SSA is not conceptualised as only operating on the individual level therefore underscoring the importance of stigma reduction interventions in this context to move beyond exclusively addressing individual-level stigma.

Intersectional articles demonstrated somewhat limited variety in study populations and research methods; over half included only MSM (n=16) and were qualitative (n=13). Nonetheless, they were more likely to include WSW and transgender individuals than non-intersectional studies. Turan *et al* argue that mixed method studies are ideal for examining health-related intersectional stigma because they allow quantitative, testable measures to be well-grounded in lived experience.^{35 37 229} However, there are limited quantitative measurement tools available for HIV-related intersectional stigma as reflected in their relative absence from studies included in this review.²³⁰ Quantitative tools typically measure stigma intracategorically (experience within one multiply stigmatised group) or intercategory (experience across multiple stigmatised groups).^{226–228 231} There is a need for more tools to quantitatively measure intersectional stigma intercategory and intracategorically that are validated in low-to-middle income countries in SSA among diverse SGM populations.²³⁰

This review is not without limitations. As scoping reviews typically do not assess study quality, a limitation is the inclusion of data from weak and strong studies. Our review illustrated the complex relationship between gender-expression-related and SSSAB stigmas in different SGM populations. However, there are limits to precision in categorising SGM populations across settings due to differences in language and local interpretation of commonly used terms like transgender. In some settings, sexual orientation, gender identity and sexual positioning are often conceptualised as distinct,^{66 232} while in others, the boundaries are blurred or non-existent.^{13 75 77} Further, our focus on SSA restricts the generalisability of findings beyond this region. Despite these limitations, the review has several strengths. We included articles in English and French, decreasing selection bias. Our search strategy was comprehensive and conducted in conjunction with an experienced public health librarian. Finally, all screening and extractions were completed by two independent reviewers.

To decrease intersectional stigma and improve HIV outcomes among SGM in SSA, there is need for well-tailored interventions, which requires accurate and comprehensive insight on how stigma is conceptualised and experienced. While intersectional perspectives in HIV stigma research have advanced, more research is needed with diverse designs and SGM populations. Applying these suggestions to future work can improve outcomes for SGM in SSA.

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REFERENCES

- UNAIDS. Global HIV & AIDS statistics — 2020 fact sheet. 2020. Available: <https://www.unaids.org/en/resources/fact-sheet> [Accessed 14 Mar 2021].
- Beyrer C, Baral SD, van Griensven F, et al. Global epidemiology of HIV infection in men who have sex with men. *Lancet* 2012;380:367–77.
- Poteat T, Scheim A, Xavier J, et al. Global epidemiology of HIV infection and related syndemics affecting transgender people. *J Acquir Immune Defic Syndr* 2016;72:S210–9.
- Poteat T, Ackerman B, Diouf D, et al. HIV prevalence and behavioral and psychosocial factors among transgender women and cisgender men who have sex with men in 8 African countries: a cross-sectional analysis. *PLoS Med* 2017;14:e1002422.
- Centers for Disease Control and Prevention. Terminology | division of adolescent and school health (DASH). 2022. Available: <https://www.cdc.gov/healthyyouth/terminology/sexual-and-gender-identity-terms.htm> [Accessed 23 Dec 2023].
- Kloek M, Bulstra CA, van Noord L, et al. HIV prevalence among men who have sex with men, transgender women and cisgender male sex workers in sub-Saharan Africa: a systematic review and meta-analysis. *J Int AIDS Soc* 2022;25:e26022.
- Matebeni Z, Reddy V, Sandfort T, et al. "I thought we are safe": Southern African lesbians' experiences of living with HIV. *Cult Health Sex* 2013;15 Suppl:34–47.
- Poteat T, Logie C, Adams D, et al. Sexual practices, identities and health among women who have sex with women in lesotho - a mixed-methods study. *Cult Health Sex* 2014;16:120–35.
- Sandfort TGM, Baumann LRM, Matebeni Z, et al. Forced sexual experiences as risk factor for self-reported HIV infection among Southern African lesbian and bisexual women. *PLoS One* 2013;8:e53552.
- Bezerra ALL, Sorensen W, Rodrigues TB, et al. HIV epidemic among Brazilian women who have sex with women: an ecological study. *Front Public Health* 2022;10:926560.
- Tat SA, Marrazzo JM, Graham SM. Women who have sex with women living in Low- and middle-income countries: a systematic review of sexual health and risk behaviors. *LGBT Health* 2015;2:91–104.
- Siamisang K, Nkomo B, Kusi K, et al. High-risk behaviors and factors for HIV and sexually transmitted infections among transgender people in gaborone, botswana: results from a national survey. *Pan Afr Med J* 2022;41:128.
- Emmanuel G, Folan M, Undelikwe G, et al. Community perspectives on barriers and challenges to HIV pre-exposure prophylaxis access by men who have sex with men and female sex workers access in Nigeria. *BMC Public Health* 2020;20:69.
- Logie CH, Perez-Brumer A, Mothopeng T, et al. Conceptualizing LGBT stigma and associated HIV vulnerabilities among LGBT persons in lesotho. *AIDS Behav* 2020;24:3462–72.
- Lyons CE, Olawore O, Turpin G, et al. Intersectional stigmas and HIV-related outcomes among a cohort of key populations enrolled in stigma mitigation interventions in Senegal. *AIDS* 2020;34:S63–71.
- Poteat TC, Logie CH, Adams D, et al. Stigma, sexual health, and human rights among women who have sex with women in Lesotho. *Reprod Health Matters* 2015;23:107–16.
- Rodriguez-Hart C, Bradley C, German D, et al. The synergistic impact of sexual stigma and psychosocial well-being on HIV testing: a mixed-methods study among Nigerian men who have sex with men. *AIDS Behav* 2018;22:3905–15.
- Schwartz SR, Nowak RG, Orzulike I, et al. The immediate Eff Ect of the same-sex marriage prohibition act on stigma, discrimination, and engagement on HIV prevention and treatment services in men who have sex with men in Nigeria: analysis of prospective data from the TRUST cohort. *Lancet HIV* 2015;2:e299–306.
- National AIDS Trust. Tackling HIV stigma: what works? 2016. Available: <https://www.nat.org.uk/publication/tackling-hiv-stigma-what-works> [Accessed 14 Mar 2021].
- Pachankis JE, Hatzenbuehler ML, Bränström R, et al. Structural stigma and sexual minority men's depression and suicidality: a multilevel examination of mechanisms and mobility across 48 countries. *J Abnorm Psychol* 2021;130:713–26.
- Guimarães MDC, Kendall C, Magno L, et al. Comparing HIV risk-related behaviors between 2 RDS national samples of MSM in Brazil, 2009 and 2016. *Medicine* 2018;97:S62–8.
- Ogunbajo A, Kershaw T, Kushwaha S, et al. Barriers, motivators, and facilitators to engagement in HIV care among HIV-infected Ghanaian men who have sex with men (MSM). *AIDS Behav* 2018;22:829–39.
- Parker CM, Garcia J, Philbin MM, et al. Social risk, stigma and space: key concepts for understanding HIV vulnerability among black men who have sex with men in New York city. *Cult Health Sex* 2017;19:323–37.
- Philbin MM, Hirsch JS, Wilson PA, et al. Structural barriers to HIV prevention among men who have sex with men (MSM) in Vietnam: diversity, stigma, and healthcare access. *PLOS ONE* 2018;13:e0195000.

- 25 Sun S, Pachankis JE, Li X, *et al.* Addressing minority stress and mental health among men who have sex with men (MSM) in China. *Curr HIV/AIDS Rep* 2020;17:35–62.
- 26 Yang X, Li X, Qiao S, *et al.* Intersectional stigma and psychosocial well-being among MSM living with HIV in Guangxi. *AIDS Care* 2020;32:5–13.
- 27 Ziersch A, Walsh M, Baak M, *et al.* "It is not an acceptable disease": a qualitative study of HIV-related stigma and discrimination and impacts on health and wellbeing for people from ethnically diverse backgrounds in Australia. *BMC Public Health* 2021;21.
- 28 Stannah J, Soni N, Lam JKS, *et al.* Trends in HIV testing, the treatment cascade, and HIV incidence among men who have sex with men in Africa: a systematic review and meta-analysis. *Lancet HIV* 2023;10:e528–42.
- 29 Stannah J, Dale E, Elmes J, *et al.* HIV testing and engagement with the HIV treatment cascade among men who have sex with men in Africa: a systematic review and meta-analysis. *Lancet HIV* 2019;6:e769–87.
- 30 International Lesbian, Gay, Bisexual, Trans and Intersex Association. Criminalisation of Consensual same-sex sexual acts | ILGA world database. Available: <https://database.ilga.org/criminalisation-consensual-same-sex-sexual-acts> [Accessed 28 Jan 2023].
- 31 Ogunbajo A, Oke T, Jin H, *et al.* A Syndemic of psychosocial health problems is associated with increased HIV sexual risk among Nigerian gay, Bisexual, and other men who have sex with men (GBMSM). *AIDS Care* 2020;32:337–42.
- 32 Babel RA, Wang P, Alessi EJ, *et al.* HIV risk, and access to HIV prevention and treatment services among men who have sex with men (MSM) in the United States: a scoping review. *AIDS Behav* 2021;25:3574–604.
- 33 Kemp CG, Jarrett BA, Kwon C-S, *et al.* Implementation science and stigma reduction interventions in Low- and middle-income countries: a systematic review. *BMC Med* 2019;17:6.
- 34 Dunbar W, Labat A, Raccourt C, *et al.* A realist systematic review of stigma reduction interventions for HIV prevention and care continuum outcomes among men who have sex with men. *Int J STD AIDS* 2020;31:712–23.
- 35 Jackson-Best F, Edwards N. Stigma and intersectionality: a systematic review of systematic reviews across HIV/AIDS, mental illness, and physical disability. *BMC Public Health* 2018;18:919.
- 36 Sievwright KM, Stangl AL, Nyblade L, *et al.* An expanded definition of Intersectional stigma for public health research and Praxis. *Am J Public Health* 2022;112:S356–61.
- 37 Turan JM, Elafros MA, Logie CH, *et al.* Challenges and opportunities in examining and addressing Intersectional stigma and health. *BMC Med* 2019;17:7.
- 38 Crenshaw K. Demarginalizing the intersection of race and sex: a black feminist critique of Antidiscrimination doctrine, feminist theory and Antiracist politics. *Univ Chic Leg Forum* 1989;140:139–67.
- 39 Collins PH. Intersectionality's definitional dilemmas. *Annu Rev Sociol* 2015;41:1–20.
- 40 Hsieh E, Polo R, Qian HZ, *et al.* Intersectionality of stigmas and health-related quality of life in people ageing with HIV in China. *Lancet Healthy Longev* 2022;3:e206–15.
- 41 Logie CH, James L, Tharao W, *et al.* HIV, gender, race, sexual orientation, and sex work: a qualitative study of Intersectional stigma experienced by HIV-positive women in Ontario, Canada. *PLoS Med* 2011;8:e1001124.
- 42 Rai SS, Peters RMH, Syurina EV, *et al.* Intersectionality and health-related stigma: insights from experiences of people living with stigmatized health conditions in Indonesia. *Int J Equity Health* 2020;19:206.
- 43 Rice WS, Logie CH, Napoles TM, *et al.* Perceptions of intersectional stigma among diverse women living with HIV in the United States. *Soc Sci Med* 2018;208:9–17.
- 44 Dale SK, Ayala G, Logie CH, *et al.* Addressing HIV-related intersectional stigma and discrimination to improve public health outcomes: an AJP supplement. *Am J Public Health* 2022;112:S335–7.
- 45 Bauer GR. Incorporating intersectionality theory into population health research methodology: challenges and the potential to advance health equity. *Soc Sci Med* 2014;110:10–7.
- 46 Berger MT. Workable sisterhood: the political journey of stigmatized women with HIV/AIDS. In: *Workable sisterhood*. Princeton University Press, 2010. Available: <https://www.degruyter.com/document/doi/10.1515/9781400826384/html>
- 47 Bowleg L. The problem with Intersectional stigma and HIV equity research. *Am J Public Health* 2022;112:S344–6.
- 48 Bogart LM, Wagner GJ, Galvan FH, *et al.* Perceived discrimination and mental health symptoms among black men with HIV. *Cult Divers Ethnic Minor Psychol* 2011;17:295–302.
- 49 English D, Rendina HJ, Parsons JT. The effects of intersecting stigma: a longitudinal examination of minority stress, mental health, and substance use among black. *Psychol Violence* 2018;8:669–79.
- 50 Kennedy CE, Baral SD, Fielding-Miller R, *et al.* "They are human beings, they are Swazi": intersecting stigmas and the positive health, dignity and prevention needs of HIV-positive men who have sex with men in Swaziland. *J Int AIDS Soc* 2013;16 Suppl 3:18749.
- 51 Midoun M, Shangani S, Mbete B, *et al.* How Intersectional constructions of sexuality, culture, and masculinity shape identities and sexual decision-making among men who have sex with men in Coastal Kenya. *Cult Health Sex* 2016;18:625–38.
- 52 Alessi EJ, Kahn S, Giwa S, *et al.* "Those tablets, they are finding an empty stomach": a qualitative investigation of HIV risk among sexual and gender minority migrants in Cape town, South Africa. *Ethn Health* 2022;27:800–16.
- 53 Moran A, Scheim A, Lyons C, *et al.* Characterizing social cohesion and gender identity as risk determinants of HIV among cisgender men who have sex with men and transgender women in cote D'Ivoire. *Ann Epidemiol* 2020;42:25–32.
- 54 Abubakari GM, Dada D, Nur J, *et al.* Intersectional stigma and its impact on HIV prevention and care among MSM and WSW in sub-Saharan African countries: a protocol for a scoping review. *BMJ Open* 2021;11:e047280.
- 55 Tricco AC, Lillie E, Zarin W, *et al.* PRISMA extension for scoping reviews (PRISMA-SCR): checklist and explanation. *Ann Intern Med* 2018;169:467–73.
- 56 WHO. Global health observatory metadata | metadata | UN region - Codelist. Available: <https://apps.who.int/gho/data/node.metadata.UNREGION?lang=en> [Accessed 09 Aug 2022].
- 57 Belur J, Tompson L, Thornton A, *et al.* Interrater reliability in systematic review methodology: exploring variation in coder decision-making. *Sociol Methods Res* 2021;50:837–65.
- 58 Stangl AL, Earnshaw VA, Logie CH, *et al.* The health stigma and discrimination framework: a global, crosscutting framework to inform research, intervention development. *BMC Med* 2019;17.
- 59 Stangl A, Brady L, Fritz K. *STRIVE technical brief: measuring HIV stigma and discrimination*. Washington, USA: International Center for Research on Women, 2017. Available: <http://strive.lshtm.ac.uk/system/files/attachments/STRIVE%20Stigma%20Measurement%20Brief.pdf>
- 60 Baral S, Logie CH, Grosso A, *et al.* Modified social ecological model: a tool to guide the assessment of the risks and risk contexts of HIV epidemics. *BMC Public Health* 2013;13:482.
- 61 Mitchell E, Hakim A, Nosi S, *et al.* A socio-ecological analysis of factors influencing HIV treatment initiation and adherence among key populations in Papua New Guinea. *BMC Public Health* 2021;21:2003.
- 62 Page MJ, McKenzie JE, Bossuyt PM, *et al.* The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71.
- 63 Abubakari GM, Owusu-Dampare F, Ogunbajo A, *et al.* HIV education, empathy, and empowerment (HIVE3): a peer support intervention for reducing Intersectional stigma as a barrier to HIV testing among men who have sex with men in Ghana. *Int J Environ Res Public Health* 2021;18:24.
- 64 Cloete A, Kalichman SC, Simbayi LC. Layered stigma and HIV/AIDS: experiences of men who have sex with men (MSM) in South Africa. In: *Stigma, discrimination and living with HIV/AIDS: a cross-cultural perspective*. 2013: 259–69. Available: https://www.scopus.com/inward/record.uri?eid=2-s2.0-84917701103&doi=10.1007%2F978-94-007-6324-1_15&partnerID=40&md5=12a6ad23a313c56c ef1a4db471282979
- 65 Jobson G, de Swardt G, Rebe K, *et al.* HIV risk and prevention among men who have sex with men (MSM) in peri-urban townships in Cape town, South Africa. *AIDS Behav* 2013;17 Suppl 1:S12–22.
- 66 Nelson LE, Wilton L, Agyarko-Poku T, *et al.* Predictors of condom use among peer social networks of men who have sex with men in Ghana, West Africa. *PLoS One* 2015;10:e0115504.
- 67 Nyblade L, Stockton MA, Saalik K, *et al.* Using a mixed-methods approach to adapt an HIV stigma reduction to address intersectional stigma faced by men who have sex with men in Ghana. *J Int AIDS Soc* 2022;25 Suppl 1:e25908.
- 68 Abubakari GM, Nelson LE, Ogunbajo A, *et al.* Implementation and evaluation of a culturally grounded group-based HIV prevention programme for men who have sex with men in Ghana. *Glob Public Health* 2021;16:1028–45.
- 69 Balogun A, Bissell P, Saddiq M. Negotiating access to the Nigerian healthcare system: the experiences of HIV-positive men who have sex with men. *Cult Health Sex* 2020;22:233–46.



- 70 Bourne A, Carman M, Kabuti R, *et al.* Experiences and challenges in sexual health service access among men who have sex with men in Kenya. *Global Public Health* 2022;17:1626–37.
- 71 de Villiers L, Thomas A, Jivan D, *et al.* Stigma and HIV service access among transfeminine and gender diverse women in South Africa – a narrative analysis of longitudinal qualitative data from the HPTN 071 (PopART) trial. *BMC Public Health* 2020;20:1898.
- 72 Gu LY, Zhang N, Mayer KH, *et al.* Autonomy-supportive healthcare climate and HIV-related stigma predict linkage to HIV care in men who have sex with men in Ghana, West Africa. *J Int Assoc Provid AIDS Care* 2021;20:232595822097811.
- 73 Kushwaha S, Lalani Y, Maina G, *et al.* "But the moment they find out that you are MSM...": a qualitative investigation of HIV prevention experiences among men who have sex with men (MSM) in Ghana's health care system. *BMC Public Health* 2017;17:770.
- 74 Mujugira A, Kasiita V, Bagaya M, *et al.* "You are not a man": a multi-method study of trans stigma and risk of HIV and sexually transmitted infections among trans men in Uganda. *J Int AIDS Soc* 2021;24:e25860.
- 75 Ndione AG, Procureur F, Senne J-N, *et al.* Sexuality-based stigma and access to care: intersecting perspectives between healthcare providers and men who have sex with men in HIV care centres in Senegal. *Health Policy Plan* 2022;37:587–96.
- 76 Rispel LC, Metcalf CA, Cloete A, *et al.* You become afraid to tell them that you are gay: health service utilization by men who have sex with men in South African cities. *J Public Health Pol* 2011;32:S137–51.
- 77 Rodríguez-Hart C, Bradley C, German D, *et al.* "Building that strong energy": an exploration of stigma coping strategies among sexual and gender minorities in Nigeria. *Stigma Health* 2023;8:223–31.
- 78 Stahlman S, Bechtold K, Sweitzer S, *et al.* Sexual identity stigma and social support among men who have sex with men in Lesotho: a qualitative analysis. *Reprod Health Matters* 2015;23:127–35.
- 79 Stahlman S, Liestman B, Ketende S, *et al.* Characterizing the HIV risks and potential pathways to HIV infection among transgender women in Cote D'Ivoire, togo and Burkina Faso. *J Int AIDS Soc* 2016;19:3.
- 80 Wanyenze RK, Musinguzi G, Matovu JKB, *et al.* "If you tell people that you had sex with a fellow man, it is hard to be helped and treated": barriers and opportunities for increasing access to HIV services among men who have sex with men in Uganda. *PLoS One* 2016;11:e0147714.
- 81 Alio AP, Khoudia A, Thiam MH, *et al.* They call us Goor-Jigeen: a qualitative exploration of the experiences of senegalese muslim men who have sex with men living with HIV. *Cult Health Sex* 2022;24:1289–301.
- 82 Duncan C, Harrison MG, Toldson IA, *et al.* Social stigma, HIV/AIDS knowledge, and sexual risk: a cross-cultural analysis. *J Appl Biobehav Res* 2005;10:1–26.
- 83 Gamariel F, Isaakidis P, Tarquino IAP, *et al.* Access to health services for men who have sex with men and transgender women in Beira, Mozambique: a qualitative study. *PLoS ONE* 2020;15:e0228307.
- 84 Kendall C, Kerr LRFS, Mota RMS, *et al.* Population size, HIV, and behavior among MSM in Luanda, Angola: challenges and findings in the first ever HIV and syphilis biological and behavioral survey. *J Acquir Immune Defic Syndr* 2014;66:544–51.
- 85 Kimani M, Van Der Elst EM, Chirro O, *et al.* Prep interest and HIV-1 incidence among MSM and transgender women in Coastal Kenya. *Top Antivir Med* 2019;26:476s.
- 86 Maleke K, Daniels J, Lane T, *et al.* How social stigma sustains the HIV treatment gap for MSM in Mpumalanga, South Africa. *Glob Health Promot* 2019;26:6–13.
- 87 Mange T, Henderson N, Lukelelo N. After 25 years of democracy we are still Stigmatised and discriminated against' healthcare experiences of HIV-positive older black gay men in a Township in South Africa. *JPTS* 2022;19:87–100.
- 88 Müller A, Daskilewicz K, Kabwe ML, *et al.* Experience of and factors associated with violence against sexual and gender minorities in nine African countries: a cross-sectional study. *BMC Public Health* 2021;21:357.
- 89 Nakiganda LJ, Bavinton BR, Grulich AE, *et al.* Social influences on engagement with HIV testing, treatment and care services among men who have sex with men living in rural Uganda. *Qual Health Res* 2022;32:635–45.
- 90 Secor AM, Wahome E, Micheni M, *et al.* Depression, substance abuse and stigma among men who have sex with men in coastal Kenya. *AIDS* 2015;29:S251–9.
- 91 Niang CI, Tapsoba P, Weiss E, *et al.* "It's raining stones": stigma, violence and HIV vulnerability among men who have sex with men in Dakar, Senegal. *Cult Health Sex* 2003;5:499–512.
- 92 Karuga RN, Njenga SN, Mulwa R, *et al.* "How I wish this thing was initiated 100 years ago!" willingness to take daily oral pre-exposure prophylaxis among men who have sex with men in Kenya. *PLoS One* 2016;11:e0151716.
- 93 Duby Z, Nkosi B, Scheibe A, *et al.* "Scared of going to the clinic": contextualising Healthcare access for men who have sex with men, female sex workers and people who use drugs in two South African cities. *South Afr J HIV Med* 2018;19:701.
- 94 Hassan NR, Swartz L, Kagee A, *et al.* "There is not a safe space where they can find themselves to be free": (Un)Safe spaces and the promotion of queer visibilities among township males who have sex with males (MSM) in Cape town, South Africa. *Health Place* 2018;49:93–100.
- 95 Sabin LL, Beard J, Agyarko-Poku T, *et al.* "Too much sex and alcohol": beliefs, attitudes, and behaviors of male adolescents and young men who have sex with men in Ghana. *Open AIDS J* 2018;12:69–80.
- 96 Muzyamba C, Broadus E, Campbell C. "You cannot eat rights": a qualitative study of views by Zambian HIV-vulnerable women, youth and MSM on human rights as public health tools. *BMC Int Health Hum Rights* 2015;15:26.
- 97 Baral S, Adams D, Lebona J, *et al.* A cross-sectional assessment of population demographics, HIV risks and human rights contexts among men who have sex with men in Lesotho. *J Int AIDS Soc* 2011;14:36.
- 98 Wirtz AL, Kamba D, Jumbe V, *et al.* A qualitative assessment of health seeking practices among and provision practices for men who have sex with men in Malawi. *BMC Int Health Hum Rights* 2014;14:20.
- 99 Tun W, Pulerwitz J, Shoyemi E, *et al.* A qualitative study of how stigma influences HIV services for transgender men and women in Nigeria. *J Int AIDS Soc* 2022;25 Suppl 1:e25933.
- 100 Zhao Y, Rao A, Wirtz AL, *et al.* A structural equation model of factors associated with HIV risk behaviors and mental health among men who have sex with men in Malawi. *BMC Infect Dis* 2020;20:591.
- 101 Larsson M, Mohamed Shio J, Ross MW, *et al.* Acting within an increasingly confined space: a qualitative study of sexual behaviours and healthcare needs among men who have sex with men in a provincial Tanzanian city. *PLoS One* 2017;12:e0183265.
- 102 Coulaud P-J, Mujimbere G, Nitunga A, *et al.* An assessment of health interventions required to prevent the transmission of HIV infection among men having sex with men in Bujumbura. *J Community Health* 2016;41:1033–43.
- 103 Strömdahl S, Onigbanjo Williams A, Eziefule B, *et al.* An assessment of stigma and human right violations among men who have sex with men in Abuja, Nigeria. *BMC Int Health Hum Rights* 2019;19:7.
- 104 LeeVan E, Hu F, Mitchell A, *et al.* Gender identity, stigma, and sexually transmitted infections in Nigeria. *Top Antivir Med* 2022;30:318.
- 105 Magesa DJ, Mtui LJ, Abdul M, *et al.* Barriers to men who have sex with men attending HIV related health services in Dar es Salaam, Tanzania. *Tanzan J Health Res* 2014;16:118–26.
- 106 Mavhandu-Mudzusi AH, Ganga-Limando M. Being Lesbian, gay, Bisexual, Transgender and Intersex (LGBTI) students at a South African rural University: implications for HIV prevention. *AJNM* 2014;16:125–38.
- 107 Taegtmeier M, Davies A, Mwangome M, *et al.* Challenges in providing counselling to MSM in highly stigmatized contexts: results of a qualitative study from Kenya. *PLoS One* 2013;8:e64527.
- 108 The CohMSM Study Group, Coulaud P, Sagaon-Teyssier L, *et al.* Combined sexual behavioral profiles in HIV-seronegative men who have sex with men in West Africa (Cohmsm ANRS 12324-expertise France). *Arch Sex Behav* 2020;49:331–45.
- 109 Brown CA, Grosso AL, Adams D, *et al.* Characterizing the individual, social, and structural determinants of condom use among men who have sex with men in Swaziland. *AIDS Res Hum Retroviruses* 2016;32:539–46.
- 110 Maina G, Strudwick G, Lalani Y, *et al.* Characterizing the structure and functions of social networks of men who have sex with men in Ghana, West Africa: implications for peer-based HIV prevention. *J Assoc Nurses AIDS Care* 2018;29:70–82.
- 111 Coulaud P-J, Sagaon-Teyssier L, Mimi M, *et al.* Changes in risky sexual Behaviours among West African MSM enrolled in a quarterly HIV testing and counselling prevention programme (Cohmsm ANRS 12324 - expertise France). *Sex Transm Infect* 2020;96:115–20.
- 112 Ahaneku H, Ross MW, Nyoni JE, *et al.* Depression and HIV risk among men who have sex with men in Tanzania. *AIDS Care* 2016;28:140–7.

- 113 Stahlman S, Grosso A, Ketende S, *et al.* Depression and social stigma among MSM in Lesotho: implications for HIV and sexually transmitted infection prevention. *AIDS Behav* 2015;19:1460–9.
- 114 Wendi D, Stahlman S, Grosso A, *et al.* Depressive symptoms and substance use as mediators of stigma affecting men who have sex with men in Lesotho: a structural equation modeling approach. *Ann Epidemiol* 2016;26:551–6.
- 115 Grosso AL, Ketende SC, Stahlman S, *et al.* Development and reliability of metrics to characterize types and sources of stigma among men who have sex with men and female sex workers in Togo and Burkina Faso. *BMC Infect Dis* 2019;19:208.
- 116 Wiginton JM, Murray SM, Poku O, *et al.* Disclosure of same-sex practices and experiences of Healthcare stigma among cisgender men who have sex with men in five sub-Saharan African countries. *BMC Public Health* 2021;21:2206.
- 117 Kokogho A, Amusu S, Baral SD, *et al.* Disclosure of same-sex sexual practices to family and healthcare providers by men who have sex with men and transgender women in Nigeria. *Arch Sex Behav* 2021;50:1665–76.
- 118 Gichuru E, Kombo B, Mumba N, *et al.* Engaging religious leaders to support HIV prevention and care for Gays, bisexual men, and other men who have sex with men in Coastal Kenya. *Crit Public Health* 2018;28:294–305.
- 119 Ky-Zerbo O, Desclaux A, Kouadio AB, *et al.* Enthusiasm for introducing and integrating HIV self-testing but doubts about users: a baseline qualitative analysis of key stakeholders. *Front Public Health* 2021;9:653481.
- 120 van der Elst EM, Gichuru E, Omar A, *et al.* Experiences of Kenyan healthcare workers providing services to men who have sex with men: qualitative findings from a sensitivity training programme. *J Int AIDS Soc* 2013;16 Suppl 3:18741.
- 121 Sekoni AO, Ayoola OO, Somefun EO. Experiences of social oppression among men who have sex with men in a cosmopolitan city in Nigeria. *HIV* 2014;7:21.
- 122 Aho J, Hakim A, Vuylsteke B, *et al.* Exploring risk behaviors and vulnerability for HIV among men who have sex with men in abidjan, cote d'ivoire: poor knowledge, homophobia and sexual violence. *PLoS ONE* 2014;9:e99591.
- 123 Shangani S, Naanyu V, Mwangi A, *et al.* Factors associated with HIV testing among men who have sex with men in Western Kenya: a cross-sectional study. *Int J STD AIDS* 2017;28:179–87.
- 124 Kunzweiler CP, Bailey RC, Okall DO, *et al.* Factors associated with prevalent HIV infection among Kenyan MSM: the ANZA Mapema study. *J Acquir Immune Defic Syndr* 2017;76:241–9.
- 125 Kunzweiler CP, Bailey RC, Mehta SD, *et al.* Factors associated with viral suppression among HIV-positive Kenyan gay and Bisexual men who have sex with men. *AIDS Care* 2018;30:S76–88.
- 126 Gumindega GC, Maharaj P. Factors influencing HIV-risk perception among MSM students at a University in Durban, South Africa. *Afr J AIDS Res* 2021;20:244–53.
- 127 Pillay D, Stankevitz K, Lanham M, *et al.* Factors influencing uptake, continuation, and discontinuation of oral prep among clients at sex worker and MSM facilities in South Africa. *PLoS ONE* 2020;15:e0228620.
- 128 Wirtz AL, Trapence G, Jumbe V, *et al.* Feasibility of a combination HIV prevention program for men who have sex with men in Blantyre. *J Acquir Immune Defic Syndr* 2015;70:155–62.
- 129 Tadele G, Amde WK. Health needs, health care seeking behaviour, and utilization of health services among lesbians, Gays and Bisexuals in Addis Ababa, Ethiopia. *Int J Equity Health* 2019;18.
- 130 Micheni M, Kombo BK, Secor A, *et al.* Health provider views on improving antiretroviral therapy adherence among men who have sex with men in Coastal Kenya. *AIDS Patient Care STDS* 2017;31:113–21.
- 131 Matovu JKB, Musinguzi G, Kiguli J, *et al.* Health providers' experiences, perceptions and readiness to provide HIV services to men who have sex with men and female sex workers in Uganda - a qualitative study. *BMC Infect Dis* 2019;19:214.
- 132 Ishungisa AM, Mizinduko M, Likindikoki S, *et al.* Health services we can trust: how same-sex attracted men in Dar es Salaam, Tanzania would like their HIV healthcare to be organised. *Cult Health Sex* 2021;23:1329–43.
- 133 Mbede C, Ogendero A, Lando R, *et al.* Healthcare-related stigma among men who have sex with men and transgender women in sub-Saharan Africa participating in HIV prevention trials network (HPTN) 075 study. *AIDS Care* 2020;32:1052–60.
- 134 Van der Elst EM, Mbogua J, Operario D, *et al.* High acceptability of HIV pre-exposure prophylaxis but challenges in adherence and use: qualitative insights from a phase I trial of intermittent and daily prep in at-risk populations in Kenya. *AIDS Behav* 2013;17:2162–72.
- 135 Chapman J, Koleros A, Delmont Y, *et al.* High HIV risk behavior among men who have sex with men in Kigali, Rwanda: making the case for supportive prevention policy. *AIDS Care* 2011;23:449–55.
- 136 Anderson AM, Ross MW, Nyoni JE, *et al.* High prevalence of stigma-related abuse among a sample of men who have sex with men in Tanzania: implications for HIV prevention. *AIDS Care* 2015;27:63–70.
- 137 Wirtz AL, Jumbe V, Trapence G, *et al.* HIV among men who have sex with men in Malawi: elucidating HIV prevalence and correlates of infection to inform HIV prevention. *J Int AIDS Soc* 2013;16 Suppl 3:18742.
- 138 Graham SM, Micheni M, Secor A, *et al.* HIV care engagement and ART adherence among Kenyan gay, Bisexual, and other men who have sex with men: a multi-level model informed by qualitative research. *AIDS Care* 2018;30:S97–105.
- 139 Hladik W, Barker J, Ssenkusu JM, *et al.* HIV infection among men who have sex with men in Kampala, Uganda--a respondent driven sampling survey. *PLoS One* 2012;7:e38143.
- 140 Twahirwa Rwema JO, Lyons CE, Herbst S, *et al.* HIV infection and engagement in HIV care cascade among men who have sex with men and transgender women in Kigali, Rwanda: a cross-sectional study. *J Int AIDS Soc* 2020;23 Suppl 6:e25604.
- 141 Sithole B. HIV prevention needs for men who have sex with men in Swaziland. *Afr J AIDS Res* 2017;16:315–20.
- 142 Poteat T, Diouf D, Drame FM, *et al.* HIV risk among MSM in Senegal: a qualitative rapid assessment of the impact of enforcing laws that criminalize same sex practices. *PLoS ONE* 2011;6:e28760.
- 143 Maleke K, Makhakhe N, Peters RP, *et al.* HIV risk and prevention among men who have sex with men in rural South Africa. *Afr J AIDS Res* 2017;16:31–8.
- 144 Tiamiyu AB, Lawlor J, Hu F, *et al.* HIV status disclosure by Nigerian men who have sex with men and transgender women living with HIV: a cross-sectional analysis at enrollment into an observational cohort. *BMC Public Health* 2020;20:1282.
- 145 Stephenson R, Darbes LA, Chavanduka T, *et al.* HIV testing, knowledge and willingness to use prep among partnered men who have sex with men in South Africa and Namibia. *AIDS Behav* 2021;25:1993–2004.
- 146 Kalamar M, Maharaj P, Gresh A. HIV-prevention interventions targeting men having sex with men in Africa: field experiences from Cameroon. *Cult Health Sex* 2011;13:1135–49.
- 147 Nel JA, Yi H, Sandfort TGM, *et al.* HIV-untested men who have sex with men in South Africa: the perception of not being at risk and fear of being tested. *AIDS Behav* 2013;17 Suppl 1:S51–9.
- 148 Grundlingh L. HIV/AIDS in South Africa: a case of failed responses because of Stigmatization, discrimination and morality, 1983–1994. *New Contree* 1999;5:55–81.
- 149 Fiorentino M, Eubanks A, Coulaud P-J, *et al.* Homonegativity, sexual violence and condom use with women in men who have sex with men and women in West Africa. *AIDS* 2021;35:681–7.
- 150 Tucker A, Liht J, de Swardt G, *et al.* Homophobic stigma, depression, self-efficacy and unprotected anal intercourse for peri-urban Township men who have sex with men in Cape town, South Africa: a cross-sectional association model. *AIDS Care* 2014;26:882–9.
- 151 Nyanzi S. Homosexuality, sex work, and HIV/AIDS in displacement and post-conflict settings: the case of refugees in Uganda. *Int Peacekeep* 2013;20:450–68.
- 152 King R, Sebyala Z, Ogwal M, *et al.* How men who have sex with men experience HIV health services in Kampala, Uganda. *BMJ Glob Health* 2020;5:e001901.
- 153 Zahn R, Grosso A, Scheibe A, *et al.* Human rights violations among men who have sex with men in Southern Africa: comparisons between legal contexts. *PLoS One* 2016;11:e0147156.
- 154 Dirisu O, Sekoni A, Vu L, *et al.* 'I will welcome this one 101%, I will so embrace it': a qualitative exploration of the feasibility and acceptability of HIV self-testing among men who have sex with men (MSM) in Lagos, Nigeria. *Health Educ Res* 2020;35:524–37.
- 155 Mavhandu-Mudzusi AH. Impact of stigma and discrimination on sexual wellbeing of Lgbt students in a South African rural University. *SAJHE* 2017;31:208–18.
- 156 Mushoriwa TD. Incidence of and experiences in homosexuality among university students: implications for HIV/AIDS prevention. *J Hum Ecol* 2017;57:53–9.
- 157 Chen Y-H, Gilmore HJ, Maleke K, *et al.* Increases in HIV status disclosure and sexual communication between South African men who have sex with men and their partners following use of HIV self-testing kits. *AIDS Care* 2021;33:1262–9.
- 158 Cange CW, LeBreton M, Billong S, *et al.* Influence of stigma and homophobia on mental health and on the uptake of HIV/sexually

- transmissible infection services for Cameroonian men who have sex with men. *Sex Health* 2015;12:315–21.
- 159 Ross MW, Kajubi P, Mandel JS, *et al*. Internalized homonegativity/homophobia is associated with HIV-risk behaviours among Ugandan gay and bisexual men. *Int J STD AIDS* 2013;24:409–13.
- 160 Muwonge TR, Nsubuga R, Brown C, *et al*. Knowledge and barriers of prep delivery among diverse groups of potential prep users in central Uganda. *PLoS One* 2020;15:e0241399.
- 161 H Logie C, Perez-Brumer A, Jenkinson J, *et al*. Marginalization and social change processes among Lesbian, gay, bisexual and transgender persons in Swaziland: implications for HIV prevention. *AIDS Care* 2018;30:33–40.
- 162 Sholeye OO, Animasahun VJ, Oyelekan AA. Medical students' perception of sexual orientation in sagamu, Southwestern Nigeria: implications for access to HIV care. *IJHRH* 2018;11:347–55.
- 163 King R, Barker J, Nakayiwa S, *et al*. Men at risk; a qualitative study on HIV risk, gender identity and violence among men who have sex with men who report high risk behavior in Kampala, Uganda. *PLoS One* 2013;8:e82937.
- 164 Dah TTE, Orne-Gliemann J, Guiard-Schmid JB, *et al*. Men who have sex with men (MSM) and HIV infection in Ouagadougou, Burkina Faso: knowledge, attitudes, practices and seroprevalence survey. *Rev Epidemiol Sante Publique* 2016;64:295–300.
- 165 Hladik W, Sande E, Berry M, *et al*. Men who have sex with men in Kampala, Uganda: results from a bio-behavioral respondent driven sampling survey. *AIDS Behav* 2017;21:1478–90.
- 166 Okall DO, Ondenge K, Nyambura M, *et al*. Men who have sex with men in Kisumu, Kenya: comfort in accessing health services and willingness to participate in HIV prevention studies. *J Homosex* 2014;61:1712–26.
- 167 Batist E, Brown B, Scheibe A, *et al*. Outcomes of a community-based HIV-prevention pilot programme for township men who have sex with men in cape town, South Africa. *J Int AIDS Soc* 2013;16 Suppl 3:18754.
- 168 Rodriguez-Hart C, Nowak RG, Musci R, *et al*. Pathways from sexual stigma to incident HIV and sexually transmitted infections among Nigerian MSM. *AIDS* 2017;31:2415–20.
- 169 Magea DJ, Leshabari M. Perceived barriers to access available health services among men who have sex with men in Dar es Salaam, Tanzania [unpaginated]. *Tanzan J Health Res* 2017;19.
- 170 Kigumi HO, Msuya SE, Damian DJ. Perceived barriers to access available HIV and sexually transmitted infection services among men who have sex with men (MSM) in Tanga region, northern Tanzania. *HIV AIDS Rev* 2019;18:115–9.
- 171 Lyons CE, Ketende S, Diouf D, *et al*. Potential impact of integrated stigma mitigation interventions in improving HIV/AIDS service delivery and uptake for key populations in Senegal. *J Acquir Immune Defic Syndr* 2017;74:S52–9.
- 172 Essack Z, Lynch I, Kaunda CJ, *et al*. Power relations in sexual agreements among male couples in Southern Africa. *Cult Health Sex* 2020;22:904–19.
- 173 Peltzer K, Pengpid S. Prevalence and associated factors of enacted, internalized and anticipated stigma among people living with HIV in South Africa: results of the first national survey. *HIV AIDS (Auckl)* 2019;11:275–85.
- 174 Ruiseñor-Escudero H, Lyons C, Ketende S, *et al*. Prevalence and factors associated to disclosure of same-sex practices to family members and health care workers among men who have sex with men in Togo. *AIDS Care* 2019;31:1019–25.
- 175 Adebajo SB, Eluwa GI, Allman D, *et al*. Prevalence of internalized homophobia and HIV associated risks among men who have sex with men in Nigeria. *Afr J Reprod Health* 2012;16:21–8.
- 176 Lorente N, Henry E, Fugon L, *et al*. Proximity to HIV is associated with a high rate of HIV testing among men who have sex with men living in douala, Cameroon. *AIDS Care* 2012;24:1020–7.
- 177 Ogunbajo A, Iwuagwu S, Williams R, *et al*. Psychological problems mediate the relationship between minority stress and HIV sexual risk among Nigerian men who have sex with men: testing the minority stress model. *Arch Sex Behav* 2021;50:3163–74.
- 178 Pilgrim N, Musheke M, Raymond HF, *et al*. Quality of care and HIV service utilization among key populations in Zambia: a qualitative comparative analysis among female sex workers, men who have sex with men and people who use drugs. *AIDS Care* 2019;31:460–4.
- 179 Parry C, Petersen P, Dewing S, *et al*. Rapid assessment of drug-related HIV risk among men who have sex with men in three South African cities. *Drug Alcohol Depend* 2008;95:45–53.
- 180 Mpunga E, Persaud N, Akolo C, *et al*. Readiness for use of HIV preexposure prophylaxis among men who have sex with men in Malawi: qualitative focus group and interview study. *JMIR Public Health Surveill* 2021;7:e26177.
- 181 Balogun-Katung A, Bissell P, Saddiq M. Reflections on the use of antiretroviral treatment among HIV+ men who have sex with men (MSM) in Nigeria. In: *Living pharmaceutical lives*. 2021: 139–53. Available: <https://www.scopus.com/inward/record.uri?eid=s2-2.0-85109606153&doi=10.4324%2f9780429342868-10&partnerID=40&md5=180ccadf4206ccd63a46ed75293b23db>
- 182 Kayode BO, Mitchell A, Ndembu N, *et al*. Retention of a cohort of men who have sex with men and transgender women at risk for and living with HIV in Abuja and Lagos, Nigeria: a longitudinal analysis. *J Int AIDS Soc* 2020;23 Suppl 6:e25592.
- 183 Rao A, Stahlman S, Hargreaves J, *et al*. Sampling key populations for HIV surveillance: results from eight cross-sectional studies using respondent-driven sampling and venue-based snowball sampling. *JMIR Public Health Surveill* 2017;3:e72.
- 184 Ochoyeh B, Folayan MO, Fatusi AO, *et al*. Satisfaction with use of public health and peer-led facilities for HIV prevention services by key populations in Nigeria. *BMC Health Serv Res* 2019;19:856.
- 185 Niang CI, Seck K, Tapsoba P, *et al*. Satisfaire LES Besoins de Sante des hommes qui ont des rapports sexuels avec D'Autres hommes au senegal; 19.
- 186 Shangani S, Genberg B, Harrison A, *et al*. Sexual prejudice and comfort to provide services to men who have sex with men among HIV healthcare workers in western Kenya: role of interpersonal contact. *AIDS Behav* 2022;26:805–13.
- 187 Risher K, Adams D, Sithole B, *et al*. Sexual stigma and discrimination as barriers to seeking appropriate healthcare among men who have sex with men in Swaziland. *J Int AIDS Soc* 2013;16:18715.
- 188 Rodriguez-Hart C, Musci R, Nowak RG, *et al*. Sexual stigma patterns among Nigerian men who have sex with men and their link to HIV and sexually transmitted infection prevalence. *AIDS Behav* 2018;22:1662–70.
- 189 Grover E, Grosso A, Ketende S, *et al*. Social cohesion, social participation and HIV testing among men who have sex with men in Swaziland. *AIDS Care* 2016;28:795–804.
- 190 Okal J, Luchters S, Geibel S, *et al*. Social context, sexual risk perceptions and stigma: HIV vulnerability among male sex workers in Mombasa, Kenya. *Cult Health Sex* 2009;11:811–26.
- 191 Adedimeji A, Sinayobye J d' A, Asiimwe-Kateera B, *et al*. Social contexts as mediator of risk behaviors in Rwandan men who have sex with men (MSM): implications for HIV and STI transmission. *PLoS ONE* 2019;14:e0211099.
- 192 Knox J, Sandfort T, Yi H, *et al*. Social vulnerability and HIV testing among South African men who have sex with men. *Int J STD AIDS* 2011;22:709–13.
- 193 Ntata PRT, Muula AS, Siziya S. Socio-demographic characteristics and sexual health related attitudes and practices of men having sex with men in central and Southern Malawi. *Tanzan J Health Res* 2008;10:124–30.
- 194 Dibble KE, Baral SD, Beymer MR, *et al*. Stigma and healthcare access among men who have sex with men and transgender women who have sex with men in Senegal. *SAGE Open Med* 2022;10:20503121211069276.
- 195 Krishnaratne S, Bond V, Stangl A, *et al*. Stigma and judgment toward people living with HIV and key population groups among three cadres of health workers in South Africa and Zambia: analysis of data from the HPTN 071 (Popart) trial. *AIDS Patient Care STDS* 2020;34:38–50.
- 196 Lyons C, Stahlman S, Holland C, *et al*. Stigma and outness about sexual behaviors among Cisgender men who have sex with men and transgender women in Eswatini: a latent class analysis. *BMC Infect Dis* 2019;19:211.
- 197 Kim H-Y, Grosso A, Ky-Zerbo O, *et al*. Stigma as a barrier to health care utilization among female sex workers and men who have sex with men in Burkina Faso. *Ann Epidemiol* 2018;28:13–9.
- 198 Crowell TA, Keshinro B, Baral S, *et al*. Stigma, access to care, and HIV among men who sell sex in Nigeria. *Top Antivir Med* 2016;24:392–3.
- 199 Gyamerah AO, Taylor KD, Atuahene K, *et al*. Stigma, discrimination, violence, and HIV testing among men who have sex with men in four major cities in Ghana. *AIDS Care* 2020;32:1036–44.
- 200 Fay H, Baral SD, Trapence G, *et al*. Stigma, health care access, and HIV knowledge among men who have sex with men in Malawi, Namibia, and Botswana. *AIDS Behav* 2011;15:1088–97.
- 201 Mason K, Ketende S, Peitzmeier S, *et al*. Stigma, human rights violations, health care access, and disclosure among men who have sex with men in the Gambia. *J Hum Rights Pract* 2015;7:139–52.
- 202 Miller SS, Mantell JE, Parmley LE, *et al*. Stigma, social cohesion, and HIV risk among sexual and gender minorities in two cities in Zimbabwe. *AIDS Behav* 2022;26:2994–3007.

- 203 Nelson LE, Wilton L, Agyarko-Poku T, *et al.* The association of HIV stigma and HIV/STD knowledge with sexual risk behaviors among adolescent and adult men who have sex with men in Ghana, West Africa. *Res Nurs Health* 2015;38:194–206.
- 204 Icard LD, Zhang J, Jemmott JB, *et al.* The effects of three types of sexual orientation victimization on HIV sexual risk behavior among black South African men who have sex with men (MSM). *J Homosex* 2020;67:513–27.
- 205 Sandfort TG, L Hamilton E, Marais A, *et al.* The feasibility of recruiting and retaining men who have sex with men and transgender women in a multinational prospective HIV prevention research cohort study in sub-Saharan Africa (HPTN 075). *J Int AIDS Soc* 2020;23 Suppl 6:e25600.
- 206 van der Elst EM, Kombo B, Gichuru E, *et al.* The green shoots of a novel training programme: progress and identified key actions to providing services to MSM at Kenyan health facilities. *J Int AIDS Soc* 2015;18:20226.
- 207 Mampane JN. The impact of an HIV community engagement programme among men who have sex with men in a rural community in South Africa. *Afr J Nurs Midwifery* 2017;19. Available: <https://www.scopus.com/inward/record.uri?eid=2-s2.0-85044146373&doi=10.25159%2f2520-5293%2f1759&partnerID=40&md5=1b43db1f64f32d57360605cc00767515>
- 208 Kenya Human Rights C. The outlawed amongst us: a study of the LGBTI community's search for equality and non-discrimination in Kenya. In: *Kenya human rights commission*. 2011: vi. Available: <http://search.ebscohost.com/login.aspx?direct=true&db=awn&AN=SANB-085452-1&site=ehost-live&scope=site>
- 209 Friedland BA, Gottert A, Hows J, *et al.* The people living with HIV stigma index 2.0: generating critical evidence for change worldwide. *AIDS* 2020;34:S5–18.
- 210 Stahlman S, Sanchez TH, Sullivan PS, *et al.* The prevalence of sexual behavior stigma affecting gay men and other men who have sex with men across sub-Saharan Africa and in the United States. *JMIR Public Health Surveill* 2016;2:e35.
- 211 Mutanga O, Moen K. The push of stigma: a qualitative study on the experiences and consequences of sexuality stigma among same-sex attracted men in Harare, Zimbabwe. *Cult Health Sex* 2020;22:1269–81.
- 212 Ulanja MB, Lyons C, Ketende S, *et al.* The relationship between depression and sexual health service utilization among men who have sex with men (MSM) in Cote D'Ivoire, West Africa. *BMC Int Health Hum Rights* 2019;19:11.
- 213 Okonkwo N, Rwema JOT, Lyons C, *et al.* The relationship between sexual behavior stigma and depression among men who have sex with men and transgender women in Kigali, Rwanda: a cross-sectional study. *Int J Ment Health Addict* 2022;20:3228–43.
- 214 Ehlers VJ, Zuyderduin A, Oosthuizen MJ. The well-being of gays, lesbians and Bisexuals in Botswana. *J Adv Nurs* 2001;35:848–56.
- 215 Kounta CH, Sagaon-Teyssier L, Coulaud P-J, *et al.* Transactional sex among men who have sex with men participating in the cohmsm prospective cohort study in West Africa. *PLoS ONE* 2019;14:e0217115.
- 216 Ruiseñor-Escudero H, Grosso A, Ketende S, *et al.* Using a social ecological framework to characterize the correlates of HIV among men who have sex with men in Lome, Togo. *AIDS Care* 2017;29:1169–77.
- 217 Abaver DT, Ciske EN. Violence, abuse and discrimination: key factors militating against control of HIV/AIDS among the LGBTI sector. *SAHARA J* 2018;15:60–70.
- 218 Tsang EY, Qiao S, Wilkinson JS, *et al.* Multilayered stigma and Vulnerabilities for HIV infection and transmission: a qualitative study on male sex workers in Zimbabwe. *Am J Mens Health* 2019;13:155798831882388.
- 219 Cloete A, Simbayi LC, Kalichman SC, *et al.* Stigma and discrimination experiences of HIV-positive men who have sex with men in Cape town, South Africa. *AIDS Care* 2008;20:1105–10.
- 220 Ogunbajo A, Iwuagwu S, Williams R, *et al.* Experiences of minority stress among gay, bisexual, and other men who have sex with men (GBMSM) in Nigeria, Africa: the intersection of mental health, substance use, and HIV sexual risk behavior. *Global Public Health* 2021;16:1696–710.
- 221 Shangani S, Genberg B, Harrison A, *et al.* Cultural adaptation and validation of a measure of prejudice against men who have sex with men among healthcare providers in Western Kenya. *Glob Public Health* 2022;17:150–64.
- 222 Moyo I, Macherera M, Mavhandu-Mudzusi AH. The lived experiences of men who have sex with men when accessing HIV care services in Zimbabwe. *Health SA* 2021;26:1462.
- 223 Wells H, Polders L. Gay and Lesbian people's experience of the health care sector in Gauteng. *OUT LGBT Well-being*; 2003. Available: https://out.org.za/wp-content/uploads/2020/10/healthcare_in_gauteng_research_findings.pdf [Accessed 17 Dec 2021].
- 224 Kimani M, van der Elst EM, Chirro O, *et al.* "I wish to remain HIV negative": pre-exposure prophylaxis adherence and persistence in Transgender women and men who have sex with men in coastal Kenya. *PLoS One* 2021;16:e0244226.
- 225 Ognyanova K. Static and dynamic network visualization with R. Katya Ognyanova; 2023. Available: <https://kateto.net/network-visualization/> [Accessed 02 May 2023].
- 226 Scheim AI, Bauer GR. The intersectional discrimination index: development and validation of measures of self-reported enacted and anticipated discrimination for intercategory analysis. *Soc Sci Med* 2019;226:225–35.
- 227 Balsam KF, Molina Y, Beadnell B, *et al.* Measuring multiple minority stress: the LGBT people of color microaggressions scale. *Cultur Divers Ethnic Minor Psychol* 2011;17:163–74.
- 228 Lewis JA, Neville HA. Construction and initial validation of the gendered racial microaggressions scale for black women. *J Couns Psychol* 2015;62:289–302.
- 229 Jackson SD, Mohr JJ, Kindahl AM. Intersectional experiences: a mixed methods experience sampling approach to studying an elusive phenomenon. *J Couns Psychol* 2021;68:299–315.
- 230 Karver TS, Atkins K, Fonner VA, *et al.* HIV-related Intersectional stigma and discrimination measurement: state of the science. *Am J Public Health* 2022;112:S420–32.
- 231 Sandelowski M, Barroso J, Voils CI. Race/Ethnicity, and social class in research reports on stigma in HIV-positive women. *Health Care Women Int* 2009;30:273–88.
- 232 Nelson LE, Nyblade L, Torpey K, *et al.* Multi-level intersectional stigma reduction intervention to increase HIV testing among men who have sex with men in Ghana: protocol for a cluster randomized controlled trial. *PLoS ONE* 2021;16:e0259324.