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A realist systematic review of stigma reduction interventions for HIV prevention and care continuum outcomes among men who have sex with men

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Abstract

While stigma associated with human immunodeficiency virus (HIV) infection among men who have sex with men (MSM) is well recognized, there remains relatively limited intervention data on effective stigma reduction strategies. This systematic review was conducted to highlight the mechanisms through which sexual and HIV stigma is reduced in relation to HIV prevention and care engagement. Search of PubMed and Scopus resulted in 11 tested interventions to include in our preliminary model constructed from programme frameworks and recommendations. We refined the preliminary programme theory to identify whether, why, or how mitigation strategies produce observed outcomes. Our review showed that the interventions produced stigma reduction through three groups of mechanisms: (1) Self-acceptance, leadership, and motivational activation for behaviour change from intrapersonal strategies, such as education and mobile health strategies, which intervene on internalized and anticipated stigma; (2) socialization, knowledge sharing, and social empowerment from interpersonal strategies, such as peer support and training for care providers; and (3) community introspection, self-reflection, and humanistic activation from structural strategies such as community leaders' sensitization, which intervene on both anticipated and enacted stigma. Interventions mechanisms act complementarily and can be activated in different contexts in which MSM exposed to and infected with HIV are living.

Keywords

HIV, stigma, men who have sex with men, systematic review, interventions

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Introduction

Since the beginning of the epidemic, human immunodeficiency virus (HIV) has been linked with social stigma.[1] Stigma against people living with HIV (PLHIV), especially sexual minorities, reinforces marginalization and makes access to prevention and care strategies difficult.[2] This has been a significant barrier to effective global response to the epidemic.[3] Despite advances in scientific understanding of HIV, stigmatization continues to be widespread and affect many aspects of life for PLHIV.[4,5]

Goffman distinguished three types of stigma: the first one, physical deformity is a deficit between the

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perfect and the actual physical condition; the second type of stigma is that of character blemishes that may occur in individual with HIV or homosexuality; and the third one, which is prejudice, originates when some features from a group are considered deficient based on another group's socially constructed norm. The second type, character blemishes, is related to this review. PLHIV face considerable stigma because many believe that the infected person could have controlled the behaviours that resulted in the infection.[6,7] In addition, some groups, identities, and behaviours are consistently stigmatized across much of the world. Examples include stigma based on sexual practices and identities of gay men and other men who have sex with men (MSM).[8] From the Joint United Nations Program on HIV/AIDS stigma is also described as a process of devaluation of people either living with or associated with human immunodeficiency virus and acquired immune deficiency syndrome (HIV/AIDS).[9]

MSM, throughout the world, have been one of the constituencies most affected by the HIV pandemic, and continue to be vulnerable to high rates of HIV-related morbidity and mortality relative to other groups.[10–12] The global response to the HIV pandemic has progressed over the decades both in scale and in efforts to reach diverse and vulnerable groups, but stigma and discrimination still follow MSM in many settings.[13] Wanyenze described nine major barriers to HIV treatment and adherence among MSM which can be classified into three groups. The first group is from MSM: fear of being segregated or exposed as MSM, high mobility of the MSM population, and general fears related to HIV-associated stigma and HIV testing. The second group is from the health system: negative attitudes and unwelcoming behaviours of health workers, healthcare workers' lack of sufficient skills and knowledge to manage MSM-specific healthcare needs, limited access to MSM-specific services, and lack of national-level guidelines on how to deal with MSM. The third group is from the community: negative community perceptions towards MSM and harsh legal environment.[14] MSM infected with HIV are subjected to a plethora of unpleasant treatment that includes stigma, discrimination, social ostracism, and violence and continue to be underrepresented in HIV prevention and care programmes.[15]

Despite documented impact of stigma on HIV risks among MSM, there remains relatively limited intervention data on effective stigma reduction interventions for this specific group. While much of the literature has focused on identifying complex causalities that affect HIV incidence among MSM, a few tried to develop and test stigma mitigation interventions to improve HIV prevention and care that address socio-cultural contexts.[16] With this systematic review, we aim to highlight the mechanisms through which stigma mitigation interventions generate better HIV prevention and contribute to the care continuum for MSM. Our model is developed based on the context in which mechanisms emerge to produce expected outcomes.[17–19] This paper aimed to: (a) review international programme frameworks to develop a preliminary model on stigma reduction interventions for HIV prevention and care outcomes, and (b) refine the preliminary model from a systematic review to identify the mechanisms that have emerged from tested interventions to mitigate stigma and improve HIV outcomes for MSM regarding specific contexts.

Methods

As this work intends to identify mechanisms in complex interventions and different contexts, we used a realist method which is a theory-driven and multi-method-based that uses an interpretive approach to synthesize evidence to reveal how intervention strategies interact with context to trigger mechanisms and produce outcomes. Then, the preliminary programme theory is iteratively refined based on a systematic review of empirical evidence to investigate whether, why, or how intervention strategies produce observed outcomes, for whom and in what circumstances.[18–20]

This work intends to identify mechanisms in complex interventions and different contexts. We used an interpretive approach to synthesize evidence to reveal how intervention strategies interact with context to trigger mechanisms and produce outcomes.[21] Developing effective HIV prevention and treatment strategies requires careful dialogue and greater flexibility for context-specific implementation rather than a one-size-fits-all conceptualization of human rights.[22,23]

In this systematic review, first, we developed a preliminary model to identify how context influences mechanisms to generate outcomes.[20] We conducted a scoping review of the grey literature and international programme frameworks from the United States Agency for International Development (USAID), the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), and the LINKAGES project. Then, the preliminary model is refined based on a systematic review of the literature to investigate whether, why, or how intervention strategies produce observed outcomes, and in what circumstances.

Search strategy and selection criteria

We reviewed the international programme frameworks to develop a preliminary model on stigma reduction interventions for HIV prevention and care outcomes. To test our preliminary model, we performed a systematic search of PubMed and SCOPUS, on March 2019,

using MESH terms or other associated terms for HIV cross referenced with 'stigma', 'discrimination reduction', 'social stigma', or 'homophobia', as well as 'men who have sex with men', 'gay men', 'gay man', 'bisexual men', 'bisexual man', 'homosexual men', 'homosexual man', or 'Homosexuality, Male'. Our first screening included studies that described an empirical evaluation of the efficacy or effectiveness of intervention to reduce stigma related to MSM or HIV. Inclusion criteria included presentation of interventions evaluation, clear description of the sampling methods, and stigma mitigation related to MSM or HIV infection as a primary or secondary outcome. Selected qualitative, quantitative, and mixed methods intervention studies from all countries were included. We included ancestry searches of the articles included in the first screening using the same inclusion criteria.

Screening and data abstraction

Two independent reviewers screened each article at the title and abstract (n = 1640) and full-text (n = 140 articles) review stages. All English articles coded as potentially relevant by both reviewers were included for the next stage of the review process. If only one reviewer coded an article as potentially relevant during abstract screening, the review team included that entry for full-text review for increased sensitivity. After full-text review, discrepancies between reviewers regarding inclusion for data abstraction were resolved through discussions until consensus was reached. Finally, 11 studies were included in this review.

Standardized Excel forms were piloted and used for data abstraction. Data were abstracted by two reviewers for each included study using the developed standardized form. The data abstraction form included information about date of data collection, country of study, study aim, intervention strategies, target population, sample size of MSM participants, measured outcomes as defined by the study team (HIV stigma, sexual stigma, or both), what form of stigma was addressed by the intervention, whether/how stigma was measured in the study population, and the underlined structural factors.

There is evidence showing that the interventions described in the studies have been effective in reducing stigma; however, this work shows on how, why, for whom, and in which circumstances particular stigma reduction interventions work. Moreover, there is heterogeneity in the ways in which HIV and sexual stigma is experienced across different communities, and it is likely that the interventions and mechanisms that work to reduce HIV and sexual stigma and improve HIV-related outcomes may also vary between communities and individuals. Thus, this review uses an interpretive approach to synthesize evidence to reveal how intervention strategies interact with context to trigger mechanisms and produce outcomes. The focal point of the analysis was identifying the mechanisms as a basis for constructing the refined model.

Data analysis was conducted qualitatively after extraction. Codes and themes were generated in regard to the context, mechanisms, and intervention strategies. In an iterative way, we followed the process to have the initial model and refine it.

Results

As presented above the preliminary model (Figure 1), we conducted a scoping review of the grey literature and international programme frameworks from the USAID, the PEPFAR, and the LINKAGES project.[24,25] We

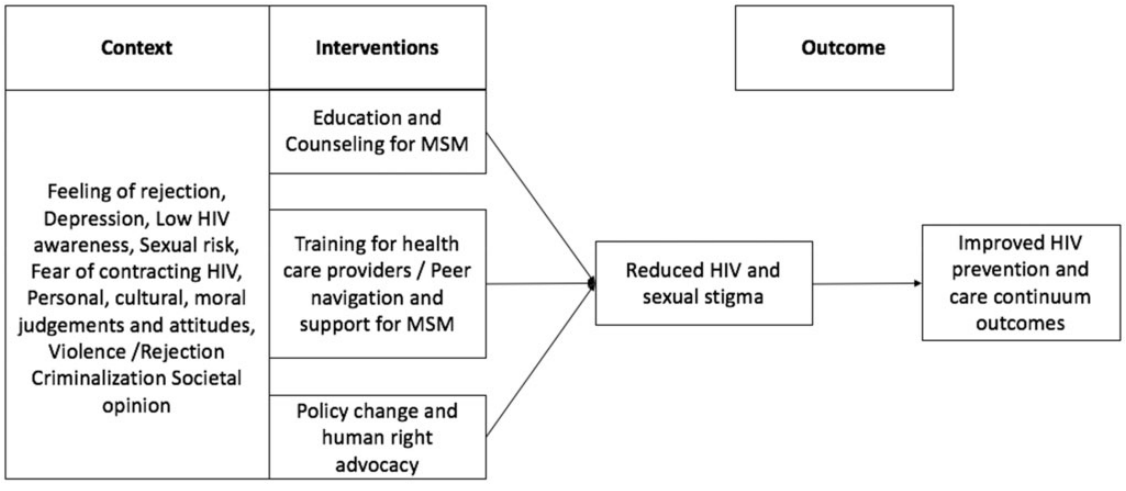

Figure 1. Preliminary model of how stigma reduction interventions improve HIV prevention and care continuum outcomes for MSM. HIV: human immunodeficiency virus; MSM: men who have sex with men.

identified three types of intervention strategies: (1) education and counselling for MSM groups, (2) training for healthcare providers (HCPs) and peer support for linkage and retention to care, and (3) advocacy for policy changes.[26–30] Using these strategies, the goal of interventions is to reduce HIV-related stigma and sexual stigma, and, by doing so improve HIV prevention and care outcomes. Opinions about sexuality and homosexuality are with criminalization part of the structural factors that create and reinforce the stigmatization. Based on such understanding, public messaging, communications, and educational campaigns can be shaped and targeted more effectively for stigma mitigation, resulting in an effective, efficient, equitable, and acceptable HIV response. Interventions including safe spaces for MSM to be educated are very crucial in societies where MSM are victims of ostracism. Given low levels of knowledge observed about risks associated with receptive anal intercourse, providing systematic education about the risks associated with unprotected anal intercourse represents an effective starting point. Supportive policy environments and prioritized HIV prevention programmes for marginalized populations are vital to optimize HIV response.

The initial search strategy identified 2618 entries between the two electronic databases, of which 978 duplicates were removed. Titles and abstracts of the remaining 1640 entries were screened: 1500 were excluded based on eligibility criteria and 140 papers were eligible for full-text review. Of these 140 articles, 129 were excluded and 11 tested interventions manuscripts were included in this review for data abstraction. Out of the 11 selected papers, the proximal outcome was to reduce sexual stigma in five articles, to reduce HIV stigma in two articles, and to reduce HIV and sexual stigma in four articles. However, the distal outcome, which is the main impact of all the studies, was to improve HIV prevention and care continuum outcomes among MSM by reducing HIV and sexual stigma. Our synthesis of all selected articles explained how stigma reduction intervention strategies were implemented in relation to the contextual factors to improve HIV prevention and care continuum outcomes. Among the 11 articles reporting interventions aimed at reducing HIV and sexual stigma in terms of mechanisms, all of them reported improved HIV-related outcomes among MSM. The publication dates

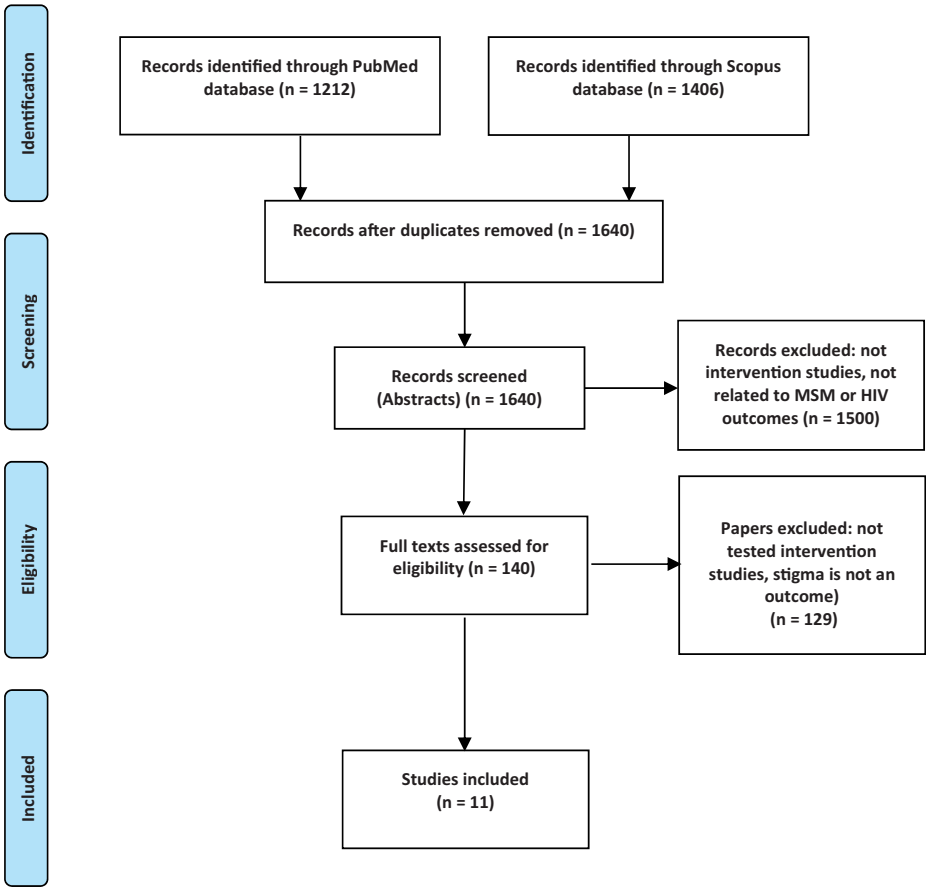

Figure 2. Flow of work processes from the database selection to the screening processes and the final selection of primary studies. HIV: human immunodeficiency virus; MSM: men who have sex with men.

vary from 2013 to 2018. Figure 2 shows the flow of work processes from the database selection to the screening processes and the final selection of primary studies.

Study characteristics

General characteristics and summary of included studies are displayed (Table 1). Seven articles used quantitative methods, two articles used qualitative methods, and two used mixed methods. The countries where the studies were conducted are Bangladesh (1), Kenya (2), Senegal (1), South Africa (2), United States (4), and Thailand (1).

Regarding study samples the populations were MSM only in six studies, MSM and sex workers and HCPs in two studies, HCPs only in two studies, and religious leaders in one study.

Forms of stigma addressed

First, we studied the strategies and analysed them in order to find which form of stigma they addressed. Based on the Valerie Earnshaw[31,32] works,

> People who are HIV infected know that their HIV status is an extremely socially devalued aspect of the self, and this knowledge is experienced through at least three important stigma forms: enacted stigma, anticipated stigma, and internalized stigma. Enacted stigma refers to the degree to which people believe they have actually experienced prejudice and discrimination from others in their community. Anticipated stigma refers to the degree to which people expect that they will experience prejudice and discrimination from others in the future. Internalized stigma refers to the degree to which people endorse the negative beliefs and feelings associated with HIV/AIDS about themselves.

Enacted stigma was decreased by interactive mobile phone- and web-based intervention forum, supportive online community; engagement intervention: training for religious leaders; community intervention (peer-based approach, peer-led session); clinical intervention (training of healthcare workers); and postclinical, web-based referral system intervention (peer-to-peer anonymous referral system); stigma reduction training programme for health service providers; competency training for healthcare workers; self-directed sensitivity training on MSM for healthcare workers. Anticipated stigma was decreased by interactive mobile phone- and web-based intervention forum, supportive online community; educational session programmes. Internalized stigma was decreased by group meetings to facilitate knowledge exchange and disseminate prevention supplies, intercommunity and community-based activities; interactive mobile phone- and web-based intervention forum, supportive online community; web-based virtual simulation and education; education and peer support; individual motivational-interviewing counselling.

Levels of intervention strategies

Synthesis of all included articles described how stigma reduction interventions were implemented in relation to the contextual factors (Figure 3). The synthesis revealed three different levels of intervention strategies for stigma mitigation, which are explained below. Intrapersonal interventions act on the internalized and anticipated forms of stigma, and interpersonal and structural strategies act on anticipated and enacted forms of stigma. As a result, reduction of HIV and sexual stigma has an impact on HIV prevention and care continuum outcomes which in turn mitigate stigma.

Mechanisms of stigma reduction for HIV prevention and care improvement

Our review found three groups of mechanisms through which HIV and sexual stigma can be reduced in MSM populations. These mechanisms were determined by the components of the interventions and the specific contexts. We present the mechanisms and for each of them the strategies through which they were identified.

Mechanism 1: Self-acceptance, leadership, and motivational activation for behaviour change

This mechanism is a trajectory using hope and confidence to achieve a complete acceptation of HIV status and sexual orientation. Different motivation may be linked to an activation of a series of positive actions that lead to behaviour change. From intrapersonal strategies, such as education and mobile health strategies, which intervene on internalized and anticipated stigma self-acceptance, leadership and motivational activation for behaviour change are identified.

Intrapersonal intervention strategies

Education for MSM. As part of the intrapersonal strategies, education for MSM represented a key strategy for stigma reduction. Education provides opportunities both to learn about sexuality and to express feeling through social activities. To illustrate, one education method adopted a family structure that also serves as a refuge for MSM while providing social support and guidance. With a decline in stigma, participants were empowered to use their natural leadership skills to influence their friends and acquaintances to protect themselves from HIV.[33]

Table 1. Summary of included studies.

Author	Country	Study design	Study aims	Intervention target groups	MSM sample size	Strategies	Interventions	Forms of stigma addressed	Measured outcomes	Impacts	Stigma measurement methods	Related contextual factors	Results
Batist et al.[37]	South Africa	Qualitative	To disseminate and promote HIV prevention information, supplies, and service uptake	MSM	98	Intrapersonal and interpersonal	Group meetings to facilitate knowledge exchange and disseminate prevention supplies, intercommunity and community-based activities	Perceived and internalized	Sexual stigma	HIV prevention outcomes	Qualitatively	Community and individual	Participants reported gaining access to MSM-specific HIV prevention information. Improvement of feelings of loneliness, social isolation, self-esteem and self-efficacy.
Bauermeister et al.[35]	United States	Mixed methods	To evaluate sexual and HIV stigma, to explore and examine whether changes in stigma occur over time	MSM	238	Intrapersonal	Interactive mobile phone- and web-based intervention forum/supportive online community	Enacted, perceived, anticipated, and internalized	HIV and sexual stigma	HIV prevention and care continuum outcomes	Stewart's 10-item subscale on felt-normative stigma; questions focused on perceptions regarding LGBTQ prejudice; 5-item internalized homophobia scale	Individual	Participants who challenged sexuality-related stigma in forums had lower internalized homophobia at baseline.
Christensen et al.[34]	United States	Quantitative	To test the effectiveness of Socially Optimized Learning in Virtual Environments (SOLVE) in reducing shame	MSM	935	Intrapersonal	Web-based virtual simulation and education	Internalized	Sexual stigma	HIV prevention outcomes	Scale from Watson and Clark's (1994)[44–46]	Individual	At baseline, MSM reporting more risky sexual behaviour reported more shame. MSM in the intervention reported more shame reduction which in turn predicted reductions in risky sexual behaviour at follow-up.
Gichuru et al.[43]	Kenya	Qualitative	To describe and test the implementation of an engagement intervention towards the reduction of stigmatization and increased social acceptance of GBMSM with religious leaders	Religious leaders	N/A	Structural	Engagement intervention: training for religious leaders	Enacted	HIV and sexual stigma	HIV prevention and care continuum outcomes	Qualitatively	Structural	Many religious leaders, who initially expressed exceedingly negative attitudes towards MSM, started to express far more accepting and supportive views of sexuality, sexual identities, and same-sex relations.
Hosek et al.[33]	United States	Quantitative	To evaluate feasibility, acceptability, and preliminary efficacy of an evidence-based, community-level popular opinion leader (OL) intervention	MSM	406	Intrapersonal and interpersonal	Education and peer support	Perceived and internalized	HIV stigma	HIV prevention outcomes	HIV Stigma Scale[45]	Individual and community	Declines were observed for multiple sexual partners, condomless anal intercourse, and HIV stigma.
Lyons et al.[39]	Senegal	Quantitative	To evaluate the impact of the three-tiered integrated stigma mitigation interventions (ISMIs) approach to optimizing HIV service delivery for key populations in Senegal	MSM and FSW	724	Intrapersonal, interpersonal, and health systems-related	Community intervention (peer-based approach, peer-led session); clinical intervention (training of healthcare workers); and post-clinical, web-based referral system intervention (peer-to-peer anonymous referral system).	Enacted and perceived	Sexual stigma	HIV prevention and care continuum outcomes	Contextual questions at baseline, three-month and six-month assessments	Health system, community, individual	Overall, 63.9% of MSM agreed that the intervention is effective in addressing stigma; baseline data reinforce the need for stigma mitigation interventions, combined with enhanced linkage and retention to optimize HIV treatment.

(continued)

Table 1. Continued

Author	Country	Study design	Study aims	Intervention target groups	MSM sample size	Strategies	Interventions	Forms of stigma addressed	Measured outcomes	Impacts	Stigma measurement methods	Related contextual factors	Results
Melendez et al.[38]	United States	Mixed Methods	To conduct and evaluate a pilot HIV prevention intervention that asks men to discuss and explore issues relating to their families and sexual disclosures	MSM	44	Intrapersonal and interpersonal	12-session programme offered over a six-week period guided by Paulo Freire's principle of 'popular education'	Internalized and anticipated	Sexual stigma	HIV prevention outcomes	Qualitatively	Individual and community	Survey results indicate that after their participation in the programme, participants increased their safer sex behaviours, comfort disclosing their sexual orientation and support from friends.
Rongkavilit et al.[36]	Thailand	Quantitative	To present a further analysis of the effect of Healthy Choices among HIV+ young Thai MSM population	MSM	74	Intrapersonal	Individual motivational-interviewing counselling	Internalized and perceived	HIV stigma	HIV care continuum outcomes (adherence)	Berger's 40-item HIV Stigma Scale[45]	Individual and community	Improvements in mental health and HIV stigma were noted in Intervention group. Healthy Choices is a promising behavioural intervention and should be further developed.
Geibel et al.[41]	Bangladesh	Quantitative	To assess the effects of the stigma reduction trainings on service provider attitudes, as well as young client satisfaction with services	HCP, MSM, and sex workers	94	Interpersonal and health systems related	Stigma reduction training programme for health service providers	Enacted and perceived	HIV and sexual stigma	HIV prevention and care continuum outcomes	With a series of questions to assess personal drivers of stigma and discrimination	Health system, individual	Provider agreement that sexually active men who have sex with men engage in 'immoral behavior' decreased substantially.
Tucker et al.[42]	South Africa	Quantitative	To evaluate the efficacy of MSM Competency Training for healthcare workers administered by Health4Men	HCP	N/A	Health systems-related	Competency training for healthcare workers	Enacted	Sexual stigma	HIV prevention and care continuum outcomes	With questions regarding 'sensitivity' knowledge; 25 question Likert scale on homoprejudicial attitudes	Health system	After training, both clinicians and clinic support staff showed an increase in knowledge and a reduction in homoprejudicial attitude scores.
van der Elst EM et al.[40]	Kenya	Quantitative	To assess the feasibility of a web-based, self-directed learning of MSM health issues and evaluate the effect of the training intervention upon HCW knowledge and attitudes	HCP	N/A	Health systems-related	Self-directed sensitivity training on MSM for healthcare workers	Enacted	HIV and sexual stigma	HIV prevention and care continuum outcomes	Homophobic scale (HS)[46]	Health system	Compared to baseline, homophobic attitudes had decreased significantly three months after training, particularly among HCW with high homophobia scores at baseline, and there was some evidence of correlation between improvements in knowledge and reduction in homophobic sentiment.

FSW: female sex worker; HCP: healthcare provider; HCW: health care workers; HIV: human immunodeficiency virus; MSM: men who have sex with men.

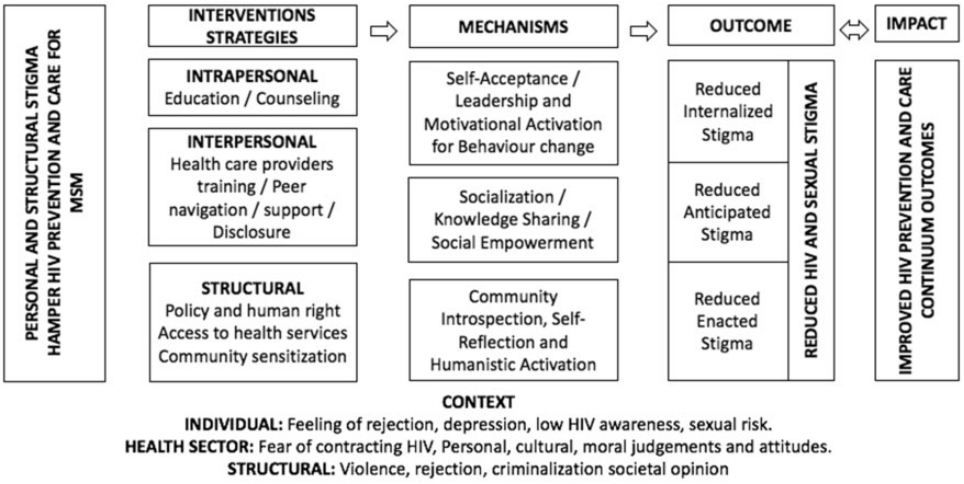

Figure 3. Refined model illustrating the mechanisms through which the intervention strategies reduce stigma and improve HIV prevention and care continuum improvement. HIV: human immunodeficiency virus; MSM: men who have sex with men.

Mobile and online health interventions. Online strategies to reduce stigma have two components: addressing feelings of shame and increasing interactive discussion. Strategies that act against shame are associated with sexual stigma by enabling MSM to more consciously acknowledge their desires and to recognize that their desires are normal. With sexual shame reduction, rates of unprotected anal sex were also indirectly decreased. These findings suggested that, for some MSM, shame reduction may be an important intervention component resulting in HIV prevention and care enrolment.[34] There were online forums and message boards to understand MSM's perceptions, attitudes, and experiences regarding sexual and HIV-related content. Accessible from any location convenient to the participant, it promoted interactive discussions between peers. MSM were empowered, less stigmatized, and were educated about sexuality and HIV.[35]

Individual motivational-interviewing (MI) counselling. This strategy was previously tested and worked in the United States then it was conducted in Thailand through a randomized trial with a four-session MI intervention that lasts 1–1.5 h. The sessions in both groups occurred at 1, 2, 6, and 12 weeks after the baseline visit. Associated with sexual risk reduction and improvement in HIV stigma, MI counselling is a collaborative, client-centred counselling style designed to increase motivational readiness to behaviour change by exploring ambivalence about change, eliciting discrepancies between current behaviours and personal goals, and building self-efficacy.[36]

Mechanism 2: Socialization, knowledge sharing, and social empowerment

Socialization with peers where MSM can share their experience and knowledge not only gives them a chance to learn from each other but also to express their expertise about the adequate way they should be treated through a participatory approach. This mechanism shows how they may be retained in the healthcare continuum through solid patient–caregiver relationships. From interpersonal strategies, such as peer support and training for care providers' socialization, knowledge sharing and social empowerment are developed.

Interpersonal intervention strategies

Support group meetings. The first study about support group meetings was conducted in South Africa where group meetings took place every 1–2 weeks, were semi-structured, and included both social and educational components. Support group meetings promoted knowledge sharing and socializing between MSM. With indoor and outdoor activities this strategy promoted knowledge sharing, socializing between MSM, and helped them to better prepare for and mitigate the effects of stigma and prejudice.[37]

Another form of support group meeting was a 12-session programme offered over a six-week period in the USA to address issues of disclosure of sexual orientation, family rejection, and issues relating to oppression for MSM. Discussion allowed for cultural nuances to shine through from the participants. Survey results indicate that after their participation in the programme, participants increased their safer sex behaviours, comfort disclosing their sexual orientation and support from

friends. The implication is that HIV prevention needs to incorporate cultural, social, and structural factors.[38]

Community-based activities.

With several modules, the community interventions aimed to cover topics like HIV prevention and transmission; human rights; stigma and discrimination; reproductive health; and living with HIV. Topics included HIV transmission and prevention, and risk reduction techniques; definitions of human rights and rights issues in the MSM community; and methods for identifying and responding to stigma and discrimination, stress management, and self-esteem. Additional topics included sexual health, nutrition specific information for PLHIV, disease progression, well-being, and life balance. The intervention was delivered by peer educators and all modules were adapted to reflect MSM specific needs.[37,39]

Health-based interventions.

- Peer support:
  This intervention operationalized a referral system designed to provide users anonymous and real-time feedback and recommendations for where friendly, non-stigmatizing health services may be accessed. This intervention aimed to provide an anonymous reference system for health services and prevention information between peers of the cohort participants.[39]

- Training for HCPs: Some studies assessed the effectiveness of several training interventions for the HCPs. They aimed at addressing enacted stigma and alleviating barriers to care for MSM on the part of the HCPs. It improved the clinical and social competency of the providers in addressing the needs of MSM. Topics included sex, sexuality, and sexual health; mental health promotion; overcoming barriers; creating a friendlier environment; health implications of sexual practices; assessing health status; evidence-based interventions; clinical care for HIV and other sexually transmitted infections; gender-based violence; and reproductive health.[39,40] After the interventions, fear-based and value-based stigma were significantly reduced. The participatory stigma training methods utilized here can be a valuable tool to help providers reflect on their own values, attitudes, and practices.[41] The results also supported claims that a lack of knowledge regarding a stigmatized group was often associated with negative attitudes about that group, while also elaborating on potential complexities in this relationship.[37,42]

Mechanism 3: Community introspection, self-reflection, and humanistic activation

Engagement, collaboration, and reflection exercises are used to help community members becoming aware of their own stigmatizing actions so they can transform their habitual use of discriminatory language and action. For this case, religious leaders showed the ability to gradually apply more humanistic, caring discourse towards MSM indicating attitude's change and socialization. From structural mechanisms, such as community leaders' sensitization, which both intervene on anticipated and enacted stigma community introspection, self-reflection and humanistic activation are reached.

Structural intervention strategies

Training for religious leaders. One study showed positive results after working with religious leaders in HIV prevention. Workshops were held with them and addressed the following topics: MSM and HIV; stigma; identity, coming out, and disclosure; anal sex and common sexual practices; HIV and sexually transmitted infections; mental health, anxiety, depression, and substance abuse; HIV prevention measures; and risk reduction counselling. Approaches for reducing stigma generated introspection and self-reflection. Religious leaders also showed that they were able to gradually apply more humanistic, caring discourse, indicating that one can interrupt the cycle of socialization and stand up for change.[43]

Discussion

Evidence indicates that stigma meets all of the criteria to be considered as a fundamental barrier for prevention and treatment of HIV in MSM populations. Based on their sexuality, behaviour, and their HIV status, MSM confront multiple layers of stigmatization and discrimination. Even though research on intervention against stigma has increased throughout the evolution of HIV disease, more activities are required to fully assess the extent, consequences, and potential countermeasures in relation to HIV-related stigma within MSM communities.[4] Despite many descriptive and intervention studies, HIV stigma continues to hamper prevention and treatment strategies.[31]

The findings from this review helped us highlight the mechanisms through which stigma can be mitigated. Self-acceptance, leadership, and motivational activation for behaviour change is a key component to

intrapersonal strategies. MSM felt more confident and this mechanism is built by sharing a focus on greater self-awareness of emotions, goals, behaviours, and associated barriers while fostering acceptance of parts of the self that cannot change. Socialization, knowledge sharing, and social empowerment allow MSM to help their peers not only for stigma reduction but also for engagement and retention in care. Training sessions for care givers allow them to better understand the specificities of MSM and allow them to have appropriate knowledge. Community introspection, self-reflection, and humanistic activation allow structural changes through community engagement.

There were 11 evaluated interventions with focus on reducing stigma in MSM communities. These interventions have been shown to be effective, but have been tested in different countries with sample size variation from 44 MSM to 935 MSM and over periods that vary from several weeks to months. Many gaps remain, especially in relation to the impact of these strategies, the sample size, the duration of the interventions, and the transferability in terms of contextual differences. The impact of stigma spreads throughout MSM's lives causing home loss, school dropout, instability in the job market, and limited willingness and ability to seek care. This means economic and physical factors that contribute to loss to follow-up. Other factors involved in loss to follow-up, including economic and physical factors, need to be addressed to optimize HIV outcomes. Combination of larger structural interventions like large scale public campaigns, awareness, and education in schools and specific communities and civil society movements with personal interventions is essential to encouraging societies to embrace diversity.

Several intervention strategies, such as the training for HCPs and religious leaders, show how specific training sessions lead to changes in stigmatizing attitudes and behaviours against MSM. These strategies, however, do not sufficiently consider intrapersonal mechanisms of stigma generation. It appears that stigma interventions are more effective when multiple strategies are implemented together to address complex health programmes, such as the HIV prevention and care continuum. Our model provides sufficient evidence to claim that multi-level intervention strategies are essential for stigma mitigation.

Refining the initial model, we found that some interventions considered that all MSM lack knowledge on HIV services, but in other studies MSM are viewed as experts in their lives and challenges to safer sex behaviour. Sharing sessions rather than formal training can also be one of the components of programmes. This approach allows for various contextual nuances to shine through from the MSM rather than the experts.

This review was limited since it did not include all the available literature on interventions for MSM since there was a focus on the ones that were tested. So, we may have missed some aspects of the socio-cultural contexts and mechanisms. Another limitation is the subjective aspect of qualitative form of analysis and data interpretation through the process even if discussions to reach consensus were central among the team. Because of that, we were not specific in defining which particular interventions or the components of the intervention were more effective.

Despite these limitations, the review also was based on the psychological mechanisms of stigma and tried to develop a model that considered all the components. Besides, the scope of the review included papers from a global perspective which was not limited to one region. We believe that the multiple contexts lying behind the interventions added value in trying to reach a saturation point in refining the preliminary model. Thus, we propose that the model outlined in this review should be seen as a contribution to stigma reduction and HIV prevention and care for MSM. As a realist review seeks not to judge but to explain, and is driven by the question 'What works for whom in what circumstances and in what respects' we found that the intervention mechanisms in the refined programme theory act complementarily and can be adapted in terms of different socio-structural and cultural contexts in which MSM exposed to and infected with HIV are living.

Authors' contributions

WD, AL, NS, CR, JWP, and YC conceived the original research idea and led the design of the study. WD, AL, and NS conducted the screening of the papers. WD, AL, and NS conducted the data extraction and WD and NS conducted the analysis. WD, AL, NS, CR, JWP, NM, and YC provided insights in the final programme theory. WD developed the first draft of the article. WD, AL, NS, NM, and YC oversaw the development and revision of the article and contributed to the revisions. All authors reviewed and approved the final draft.

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