Strengthening HIV health care services for men who have sex with men in coastal Kenya
van der Elst, E.M.

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"Strengthening HIV Health Care Services for Men who have Sex With Men in Coastal Kenya"

Thursday 17 December 2015
At 16:00 hours
Agnietenkapel, Oudezijds Voorburgwal 231, Amsterdam

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Kloveniersburgwal 50
at 18:00 hours

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Strengthening Health Care Services for Men who have sex with Men in Coastal Kenya

Elise M. van der Elst
STRENGTHENING HIV HEALTH CARE SERVICES
FOR MEN WHO HAVE SEX WITH MEN IN COASTAL KENYA

Elisabeth Maria van der Elst
Studies in this thesis were supported by the International AIDS Vaccine Initiative (IAVI) and the University of Washington (UW) Center for AIDS Research (a National Institute of Health (NIH) funded programme) [P30 AI027757]. The KEMRI-Wellcome Trust Research Programme at the Centre for Geographical Medicine Research-Kilifi is supported by core funding from the Wellcome Trust (#077092). The Johns Hopkins University, Bloomberg School of Public Health provided financial support for the health care worker sensitivity training [GHH-I-00-07-00032-00]. The printing of the thesis was financially supported by IAVI.

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ten overstaan van een door het College voor Promoties ingestelde commissie, in het openbaar te verdedigen in de Agnietenkapel op donderdag 17 december 2015, te 16:00 uur

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Geboren te Beverwijk
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Faculteit der Maatschappij- en Gedragswetenschappen
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Ter nagedachtenis aan mijn vader, Ronald Richard van der Elst
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<td>ACASI</td>
<td>Audio Computer-Assisted Self-Interview</td>
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<td>AIDS</td>
<td>Acquired Immunodeficiency Syndrome</td>
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<td>AMFAR</td>
<td>American Foundation for AIDS Research</td>
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<td>Amkeni</td>
<td>GMT organization ‘Awake’</td>
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<td>ART</td>
<td>Antiretroviral Therapy</td>
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<td>ARTH</td>
<td>Advanced Relations towards Health</td>
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<td>CAB</td>
<td>Community Advisory Board</td>
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<td>CBO</td>
<td>Community-based Organization</td>
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<td>CCC</td>
<td>Comprehensive Care Clinic</td>
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<td>CIPK</td>
<td>Council of Imams and Preachers of Kenya</td>
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<td>CHIEA</td>
<td>Catholic Higher Institute of Eastern Africa</td>
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<tr>
<td>CR</td>
<td>Capture-Recapture</td>
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<td>CRS</td>
<td>Clinical Research Site</td>
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<td>CSO</td>
<td>Civil Society Organisation</td>
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<td>FTFI</td>
<td>Face-to-Face Interview</td>
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<td>GALCK</td>
<td>Gay and Lesbian Coalition of Kenya</td>
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<td>GFATM</td>
<td>Global Fund to Fight AIDS, Tuberculosis and Malaria</td>
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<td>GMT</td>
<td>Gay men, other Men who have Sex with Men and Transgender individuals</td>
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<tr>
<td>GoK</td>
<td>Government of Kenya</td>
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<td>HAPA Kenya</td>
<td>HIV/AIDS People Alliance of Kenya</td>
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<td>HCP</td>
<td>Health Care Providers</td>
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<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<td>HTC</td>
<td>HIV testing and counselling</td>
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<td>IAVI</td>
<td>International AIDS Vaccine Initiative</td>
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<td>IDU</td>
<td>Injecting Drug User</td>
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<td>KAINS</td>
<td>Kenya AIDS Indicator Survey</td>
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<td>KAP</td>
<td>Kenya Association of Physicians</td>
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<td>KAPC</td>
<td>Kenya Association of Professional Counsellors</td>
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<td>KAVI</td>
<td>Kenya AIDS Vaccine Initiative</td>
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<td>KDH</td>
<td>Kilifi District Hospital</td>
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<td>KDHS</td>
<td>Kenya Demographic and Health Survey</td>
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<td>KELIN</td>
<td>Kenya Ethical and Legal Issues Network</td>
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<tr>
<td>KEMRI</td>
<td>Kenya Medical Research Institute</td>
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<tr>
<td>KMTTC</td>
<td>Kenya Medical Training College</td>
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<tr>
<td>KNASP</td>
<td>Kenya National AIDS Strategic Plan</td>
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<td>KNBS</td>
<td>Kenya Bureau of Statistics</td>
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<td>KNCHR</td>
<td>Kenya National Commission on Human Rights</td>
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<td>KP</td>
<td>Key Populations</td>
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<tr>
<td>KWTRP</td>
<td>Kenya Medical Research Institute-Wellcome Trust Research Programme</td>
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<tr>
<td>LGBT</td>
<td>Lesbian, Gay, Bisexual, Transgender</td>
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<tr>
<td>MARPs</td>
<td>Most-at-risk Populations</td>
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<td>MDH</td>
<td>Malindi District Hospital</td>
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<td>MMAHA</td>
<td>Mombasa Men against HIV and AIDS</td>
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<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>MoH</td>
<td>Ministry of Health</td>
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<td>MOT</td>
<td>Modes of Transmission Study</td>
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<td>MSM</td>
<td>Men who have Sex with Men</td>
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<tr>
<td>MSME</td>
<td>Men who have Sex with Men Exclusively</td>
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<tr>
<td>MSMSW</td>
<td>Men who have Sex with Men Sex Worker</td>
</tr>
<tr>
<td>MSW</td>
<td>Male Sex Worker (Who has Sex with Men)</td>
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<tr>
<td>NACC</td>
<td>National AIDS Control Council (Kenya)</td>
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<tr>
<td>NASCOP</td>
<td>National AIDS and STI Control Programme</td>
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<td>NCCK</td>
<td>National Council of Churches of Kenya</td>
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<td>Nelion</td>
<td>Coast Province Coordinating GMT organization</td>
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<td>NNAK</td>
<td>National Nurses Association of Kenya</td>
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<tr>
<td>PEMA KENYA</td>
<td>LGBT organization (‘Persons Marginalized and Aggrieved’)</td>
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<tr>
<td>PEP</td>
<td>Post-Exposure Prophylaxis</td>
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<tr>
<td>PrEP</td>
<td>Pre-Exposure Prophylaxis</td>
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<tr>
<td>PLWH</td>
<td>People Living With HIV</td>
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<td>STI</td>
<td>Sexually Transmitted Infection</td>
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<tr>
<td>SSA</td>
<td>Sub-Saharan Africa</td>
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<tr>
<td>Swahili</td>
<td>People of Arab-African descent</td>
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<td>SWOP</td>
<td>Sex Workers Outreach Program</td>
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<tr>
<td>Tamba Pwani</td>
<td>GMT organization (‘Mobile Coast’)</td>
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<tr>
<td>UAI</td>
<td>Unprotected Anal Intercourse</td>
</tr>
<tr>
<td>UKWELI</td>
<td>GMT organization ‘Usawa Kwa Wote Initiative’ (‘Equality for all Initiative’)</td>
</tr>
<tr>
<td>UP</td>
<td>GMT liaison organization ‘Utafiti Pwani’ (‘Research in the Coast’)</td>
</tr>
<tr>
<td>URAI</td>
<td>Unprotected Receptive Anal Intercourse</td>
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<td>VCT</td>
<td>Voluntary Counselling and Testing</td>
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Chapter 1 Introduction
INTRODUCTION

HIV health care services for men who have sex with men (MSM) in Sub-Saharan Africa (SSA) are still severely lacking [1]. Especially in Africa, the existence of MSM has largely been denied traditionally, and high rates of HIV infection among this population have invariably been ignored [2]. As a result, the high prevalence of HIV among men, and their risky sexual practices have not been considered until recently. As a consequence, an operational response to include HIV-prevention messages addressing MSM in SSA has been largely missing [1, 3-5]. Yet, documentation of homosexuality on the East African coast exists from the nineteenth century onward [6-9], and detailed local anthropological descriptions of MSM groups and behaviours in SSA predate the emergence of HIV [10]. Strong sociocultural beliefs, stigma and cultural intolerance of same-sex relationships, coupled with misconceptions about HIV and unclear legislation on same-sex behaviour, have created confusion and distrust among government officials, health care providers (HCP) and the communities at large in many African countries [11-13]. The predominantly heteronormative attitudes reflected in health care providers may increase MSMs' fear of seeking health care and further isolate and deprive MSM of access to effective health care and safe treatment [14]. However, some African societies and governments have recently begun taking steps to include MSM in HIV prevention and care programming. This has been based on recognition of civil rights organizations, sizes of MSM populations and emerging reports of elevated HIV-1 incidence and prevalence estimates among MSM in SSA [5, 15-18]. Kenya is one of these countries, and although Kenya lacks laws prohibiting discrimination against MSM, it is at the frontline in addressing the health care needs of MSM.

This thesis describes how Kenyan MSM have been engaged by the Kenya Medical Research Institute in operational research on HIV service delivery in coastal Kenya since 2005. This has been a unique

1 Throughout the thesis, I use the phrase ‘men who have sex with men’ or its acronym, MSM, to define men who have ever had male-male sexual contact. This definition, also adopted by the United Nations and the World Health Organisation, describes sexual behaviour regardless of how men perceive their sexual identity. [UNAIDS Action Framework: Universal Access for Men who have Sex with Men and Transgender People, 2009]
endeavour in a highly stigmatizing and homophobic environment that has nonetheless provided services for MSM on a regular basis. The thesis subsequently focuses on access to health care for MSM outside the context of research, framing health care providers’ attitudes as crucial to the pursuit of the implementation of MSM HIV services.

1.1 Epidemiology of HIV in Kenya

Kenya, after South Africa, Nigeria and India, has the fourth highest number of HIV positives in the world. Currently 1.6 million people in Kenya live with HIV (out of a total population of 41.6 million) [19]. Although the introduction of antiretroviral therapy (ART) in 2003 has dramatically reduced the number of HIV-related deaths in the country [20-22] approximately 62,000 Kenyans die from AIDS-related illnesses annually [23]. According to Kenya’s most recent AIDS Response Progress Report (2014), current HIV prevalence rate among Kenyan adults aged 15 to 64 years is 5.6% [24].

The epidemic has been characterized as generalised and geographically heterogeneous, showing large variation between regions\(^2\) from hyperepidemic to moderate prevalence. For example, in 2011 Nyanza County in southwestern Kenya had an HIV prevalence among adults >18 years of age of 15.5% and more than 700,000 people living with HIV (PLWH) as opposed to Wajir County in the Northeast with a prevalence <1% and ~300 PLWH [25]. Other examples show that urban women had an HIV prevalence of 10% versus 7% for rural women—in both cases a higher prevalence than for urban men (5%) or rural men (4%), whereas women aged 15-24 years were four times more likely to be infected than their male age-mates, while increase in age also resulted in higher prevalence [23]. Additionally, differences in circumcision rates probably have played a significant role in the

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\(^2\) In 2010 Kenya underwent an administrative transformation with the promulgation of its new constitutions. Some sources refer to Kenyan provinces while post-2010 references are often to counties. The administrative units in the two systems are not correlative.
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geographic distribution of the epidemic as some ethnic groups, e.g., the Luos of Nyanza Province (western Kenya), were largely uncircumcised until recently [26].

Sequence data from blood samples obtained in Central Africa in the 1920s [27] have confirmed that HIV-1 was the source of pre-1960 pandemic viruses and the focus of early HIV-1 transmission in SSA, including Kenya [28]. Subsequent retrospective studies of stored sera manifested SSA’s rapid HIV-incidence growth from less than 1% in the early 1970s to ~3% incidence in the late 1980s, usually described as the threshold for explosive epidemic growth. Against all expectations, the incidence level stabilized at just under 1% in the general population in SSA throughout the 1990s [29].

Mobility and social disruption facilitated the initial explosive epidemic increase across SSA, and commercial sex largely dominated the epidemic pattern. Trans-African long-haul truck drivers, migrant labourers and the populous communities in and around the Lake Victoria basin bordering western Kenya gave rise to many transient sexual relationships [30]. Rare circumcision, detestation of condoms, widespread sexually transmitted infections (STIs) and common sexual coercion fuelled the rising infection rate even further [31]. Highly religious populations restrained sexual behaviour among the young and restricted the position of women in society. Women’s lack of power in their sexual relationships, the societal pressure on men to provide for and control women and women’s need to please men in order to survive economically often resulted in partner concurrence for both men and women, accounting for a significant proportion of new HIV-infections [32]. Unlike in industrialized countries, where HIV originated in homosexual men [33, 34], Kenya’s MSM reports on HIV only emerged in the early 2000s [35-37].

1.2 Epidemiology of HIV among MSM

Until 2006, very little information on the epidemiology of HIV among SSA MSM was available. A systematic literature review by Baral et al. on MSM populations in low- and middle-income countries between 2000 and 2006 identified only four studies from SSA [3, 18, 38, 39]. International policy
development [40] and the decision by global funders to include African MSM in the HIV response in subsequent years [41, 42] gave impetus to study the epidemiology of HIV among African MSM. A comprehensive, systematic literature review on MSM studies across Africa from 2000 to 2009, conducted by Smith et al., identified nineteen MSM studies, including three from Kenya [12, 43, 44]. Of the nineteen studies, fifteen reported HIV-1 prevalence estimates among MSM ranging from 8% to 38% [2]. Results of a recent systematic review on MSM studies conducted in SSA by Dijkstra et al. revealed that in the period 2011–2014, one hundred forty two studies targeted African MSM [45]. The review showed more accurate quantification of MSM population sizes [46-48], regional MSM incidence rates [5, 15-17], risk factors for HIV acquisition among African MSM and, for the first time, information regarding HIV-1 phylogeny that suggested the existence of ‘dual epidemics’, i.e., one generalized epidemic affecting the whole population and another concentrated epidemic among MSM [49-51].

2.1 MSM research at the Kenyan coast

Kenyan MSM have been studied in a longitudinal cohort since 2005. The research is supported by the International AIDS Vaccine Initiative (IAVI), is part of a multicentre study, and is conducted in collaboration with the Kenya Medical Research Institute (KEMRI)-Wellcome Trust Research Programme (KWTRP). This research aims to prepare populations for HIV-1 vaccine efficacy trials and analyse the immune and viral profiles of individuals who have seroconverted to inform the design of potential HIV-1 vaccines [52]. The research site is in Mtwapa, a town close to Kenya’s second largest city and its major port, Mombasa.

2.1.1 KEMRI-IAVI Clinical Research Site

Emergence of MSM at the Kenyan coast
While coastal MSM had been engaged in focus-group discussions enquiring about their sexual behaviour in 2003 [35], HIV testing and services had not been provided to MSM until 2005 [53]. Initially, in response to the significant role FSW have played in the coastal HIV epidemic [30, 54-56], and to facilitate an understanding of risk factors for incident HIV and STIs among sex workers, KEMRI-IAVI targeted at-risk men and women mobilised at bars and nightclubs and mostly focused on individual risk factors. In-depth sexual risk assessments in the context of research and tailored counselling services provided opportunities to openly and confidentially speak about sexual practices. During these counselling sessions, intimacy between males was openly talked about for the first time in the Clinical Research Site (CRS), thereby highlighting the social practices of HIV counselling in the African context, described by Hardon et al. [57-59], as one of the most powerful social forms in which the dialectics of revelation (as well as concealment) of intimacy and sexual behaviour unfold [60].

2.2 HIV epidemic in coastal Kenya

It is now well documented, that MSM populations in Kenya experience severe HIV epidemics with unprecedented high HIV-1 prevalences and HIV-1 incidences [46, 61-63]. However, whilst unprotected receptive anal intercourse (URAI) is the predominant mode of HIV transmission amongst MSM [64], anal intercourse is so stigmatised by society [65] that HIV prevention messaging has remained unfocused, and many MSM would rather not come forward for health care services [66, 67].

In Mombasa, roughly one in fifty Swahili (Arab-African) men are assumed to be homosexual [10]; most of these MSM also have female sexual partners and are often in marital relationships with women [2, 68]. According to Caplan, indigenous knowledge still guides today’s local community practices, relationships, religions and rituals according to the patriarchal, patrilineal model, whereby an appreciated Swahili man financially maintains and controls women and children, thereby giving
meaning to his masculinity [69]. Recent developments, however, also indicate that sexuality and procreation begin to exist independently of each other as some of the marriage’s economic function is lost [70, 71]. Nowadays, the frequent use of modern expressions such as ‘gay’ deriving from the West (first documented by Amory) [72] and homosexual sociality, especially in the bigger towns, starts to reflect the wider changes in MSM cultures and subjectivities [73]. Changing social attitudes and new information technologies such as the Internet allow for greater visibility of MSM subcultures and consequently stress the urgent need to include MSM in health care services and general-welfare systems [74].

3.1 Coastal society: Religion, culture, sexual identity and stigma

One of the significant characteristics of the Kenyan culture is its religious basis. Traditionally, Kenyan people from the coast have held a strong belief that spiritual powers are deeply concerned about the conduct of individuals and communities alike. Law and rules that governed society were believed to have been given by Supreme Being (the Creator) rather than upon the judicial authority of Council of Elders. As in other African societies, there was cosmological morality i.e. morality based on natural law, without distinction between private and public morality [75].

Today, Kenya remains a deeply religious country, with more than 80% of Kenyans committed to a faith tradition and the vast majority being Christian (~70%); of these, 38% identify as Protestant and 28% as Catholic. Islam is the second largest religion in Kenya, practiced by about 11.1% (~4.3 mil) of the total population, with the highest concentration on (the Kenyan portion of) the Swahili coast (~85%) [76]. Although Islam has been integrated into local communities in the rest of the country, despite the millennia long mixture of Arab, Persian and other peoples with local Africans, Islamic practice at the coast has remained ‘foreign’. Even today, many coastal Afro-Arab-Muslims (or Swahilis) in Kenya live their lives as though they were in the Middle East.
Chapter 1

After earlier attempts by the Portuguese to introduce Christianity in the 15th century, Kenyans only converted from their traditional religions when Christianity was introduced by Western missionaries in the 18th century. A Christian way of life was adopted with literal interpretation of the Bible, and homosexuality condemned on the base of prevailing scriptural and theological analysis [77]. It is only recently that Christian thought on homosexuality has led to new developments whereby Christian African ethicists (Faculty of Theology of the Catholic Higher Institute of Eastern Africa (CHIEA)) and other theologians try to answer the fundamental question: “what, between homosexuality and heterosexuality, is normal and normative and on what grounds” [78].

However, the Indian Penal Code Section 377A, which criminalizes homosexual conduct in Kenya [79] is still in force and can carry a prison sentence of up to fourteen years [80]. Even at present, harassment from authorities and antihomosexual statements often reinforced by state officials, have daunted MSM and implicitly influenced communities’ prejudiced attitudes and beliefs regarding homosexuality [81, 82]. As a result, cultural oppression of MSM in the Kenyan coast has been expressed through actual physical violence, severe limitation of job opportunities, inferior social standing, and ego-destruction leading to loss of self-respect and lack of self-dignity. Erving Goffman described this conditioning of homosexual people suffer “tortured learning” in Stigma: Notes on the Management of Spoiled Identity [83].

Patriarchal organizations across SSA have been shown to depend heavily on female subordination over centuries [84]. As historical context has shaped the gender and sexual identities of men (and women) in Kenya, sexual behaviours have been well integrated into their contemporary cultural practice. In this respect, homosociality or ‘male bonds’, a term popularized by Eve Kosofsky Sedgwick [85], is an extremely relevant concept, given how much coastal men’s lives take place in separate spheres from women’s and girls’ [86].
Introduction

The origin and history of the people along the Kenyan coast trace back to the southern regions of Somalia. Initially called the Nyika tribe, these ‘people from the wilderness’ were chased by the Oromo and other Cushitic tribes until they arrived in the easier-to-defend coastal ridges of Kenya in the late sixteenth century. The Nyika would have been one of many groups encountered by Arab traders and their descendants as the Swahili culture evolved over much of two millennia. Traditionally, Nyika culture revolved around clans, each composed of interrelated families with a common patriarchal ancestor. ‘Nine homesteads’ (translated in Kiswahili as Mijikenda) were initially built at the Kenyan coast, and each of these homesteads refers to one of today’s nine coastal Mijikenda subtribes. These homesteads’ social organization implied that institutions of male rule and privilege depended upon female subordination [87].

According to Shepherd, the Mijikenda male child was celebrated by the community with rituals symbolic of the boy’s future roles in society. At the age of twelve, boys were circumcised in a comprehensive ceremony that conferred upon the initiate the power to behave as an adult. After the circumcision, the boys were allowed to marry, and many young boys had their first homosexual experiences at this stage [88, 89]. Instead of this practice being seen as a form of homosexuality, however, it served to slightly bridge opposing elements in the social order because it allowed the young boy to play the passive role normally assigned to girls and women. This resulting homosocial/homosexual engagement carried the expectation that when the boy rose to power, he would suppress women [87].

At this time, prostitution often started unofficially for a young homosexual, or—as referred to in Swahili—mshoga (originally used between women to mean ‘friend’) [90]. While some young men prostituted themselves from time to time, others got into more durable prostitution and became dependent on the finances that it brought. Usually, the mshoga was regularly visited by a longer-term, paying partner, known as basha (a term derived from pasha, the local term for the king in
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packs of playing cards] [91]. The *basha/mshoga* terminology indicated the rank difference that existed between the two participants in this type of pairing [92, 93].

Over time, transnational influence—including law, custom, convention and ceremony, as well as cultural imperialism, increased exposure to foreign ideas about sex and the self, and the ongoing HIV/AIDS epidemic—provoked rapid social change. Homosocial bonds, as distinct from homosexual contacts, started to connote a form of male bonding sometimes accompanied by a fear or hatred of homosexuality. This was frequently reinforced by Kenyan and other African leaders, who often presented homosexuality as explicitly un-African [94-97].

The contemporary discourse that homosexuality threatens African social and cultural norms often stems from heteronormative power structures, entangled with strict literal interpretations of religious texts and culturally essentialist beliefs that pathologize and deny the existence of homosexuality [98]. As new social norms are formed through processes of identity and social reconstruction, so is frequently widespread sociocultural resistance to these processes [99].

As much as legal restriction and religious discussion are at the very core of Swahili homosexual alienation, homophobia in Swahili day-to-day life has only been observed since the early 1990s [100]. Exposure to Western interpretations of sexuality, gender identity and erotic desire via sex tourism at the Kenyan coast, as well as internationally changing views on the Muslim world, have had negative implications for homosexual men [65].

*Social stigma*

As elsewhere, stigma in SSA has been recognized as one of the main obstacles to HIV prevention, treatment and support [101, 102]. Studies have documented the sociomoral perceptions in diverse African communities leading to enacted stigma, resulting in discrimination against people living with HIV and their families [103]. In the pre-ARV treatment era, people feared ‘social death’ and shunned
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away from HIV counselling and testing [104]. Additionally, in health facilities, medical professionals’
negative and discriminatory attitudes towards HIV-positive people often emulated the views of
those in the general community [105, 106].

As HIV/AIDS related stigma is reflected within broader social, cultural, political and economic
settings, it also reinforces pre-existing sources of discrimination [107-109], including non-normative
sexuality. In Kenya, hetero-normative social constructions frame power as a masculine domain,
asserting that being the patriarch of a family is the penultimate symbol of masculinity [99]. This,
compounded with MSM sexual stigma and the negative consequences of being HIV positive, has
caused MSM to contend with ‘double’ stigma, or ‘compounded’ stigma [44, 110]. Aggrevated by risk
factors associated with HIV infection, such as drug and alcohol use, and often a history of violent
and/or sexual assault [111-113], MSM often experience insecurity, strong internalized homophobia
and powerful anti-homosexual sentiment [99], which every so often instginates MSM’s unwillingness
to seek health care [114].

3.2 MSM civil society

The risks of openly identifying as MSM in a society in which attitudes to homosexuality are strongly
condemnatory led to several discreet, mainly peer-led engagement strategies, marked by KEMRI-
IAVI’s initiative. Besides research recruitment, service provision at the early phases included
education programs for MSM and the option to become a member of the first established advocacy
organization for MSM, the Mombasa Men against HIV and AIDS (MMAHA). The formation of
MMAHA (2006) ushered in the development of today’s coastal MSM organizations: MMAHA
became a community-based organization (CBO) serving the LGBT community, while, Persons
Marginalized and Aggrieved (PEMA KENYA), with a GMT-profile (Gay, other Men who have Sex with
Men and Transgender individuals), is now based in Mombasa County. Subsequently, two other CBO-
GMT organizations arose in Mombasa County: HIV/AIDS People Alliance of Kenya (HAPA Kenya) and
Advanced Relations towards Health (ARTH). Amkeni (Swahili for ‘awake’) and Tamba Pwani (Swahili for ‘Mobile Coast’) both sprang up in Kilifi County, and Usawa Kwa Wote Initiative (UKWELI) (Swahili for ‘Equality for All’ Initiative) originated in Kwale County. Nelion, the coast County coordinating GMT organization, based in Mombasa, is one of the ‘G-10’ members of the Gay and Lesbian Coalition Kenya (GALCK) in Nairobi. Finally, Utakiti Pwani (UP) (Swahili for ‘research in the coast’) has specifically been endorsed to function as a platform for discussing and planning new MSM studies with researchers at the Kenyan coast [115].

4.1 MSM sexual risk assessment

Traditionally, self-reports about behaviours associated with HIV acquisition and transmission risk have been obtained in face-to-face interviews (FTFI) during voluntary counselling and testing (VCT) sessions. VCT health care providers (HCPs) have been trained to address sexuality in terms of social or health problems and behavioural change [60]. KEMRI’s research counsellors, however, were especially challenged by interviewees’ secrecy and concealment of the more socially stigmatised behaviours, such as sex work, male same-sex behaviour, anal sex practices and injecting drug use (IDU) [116]. A discrepancy between the validity and reliability of self-reported measures and other outcomes as well as over-reporting of same-sex behaviour (to qualify for cohort enrolment, which entailed free and quality health care services) were observed [117]. This distortion made interpreting risk assessments difficult and complicated the design of appropriate behavioural interventions. Similar to experiences elsewhere in SSA [118-121], social stigma was thought to influence the interviewees to give socially desirable responses [117].

Sexual risk reduction counselling

With the aim to better understand counsellors’ and clinicians’ attitudes towards and experiences with counselling MSM in a highly stigmatized cultural setting such as ours, we conducted a
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qualitative study in 2008 [116]. Semi-structured, in-depth interviews, led by Taegtemeyer (who was not affiliated with the site and staff), brought out that more targeted training was needed to improve HCPs’ effectiveness in MSM-specific risk reduction counselling. HCPs under study experienced challenges with conflicting values and feared stigma. Similar to counselling practices related to HIV-positive status disclosure described elsewhere [122, 123], HCPs reported to lack sufficient knowledge and skills to discuss patient’s HIV-positive status and disclosure, particularly in the context of heavily stigmatized male same-sex behaviours. HCPs strongly expressed the need for strategies on how to ask men about specific behaviours and how to negotiate risk reduction with counselling clients. They felt frustrated at the perceived intractability of some of the MSM’s issues, and called for greater familiarity with MSM in the Kenyan coast to better understand the root causes of risk-taking behaviour (e.g. poverty, sex work, substance abuse, misconceptions about transmission, stigma and sexual desire). They also insisted on improved support supervision from senior counsellors. Privacy, confidentiality, and other social practices in accordance with Hardon’s relational analysis, such as cautious and subtle approaches concerning ‘disclosure’ and ‘secrecy’ [122], were mentioned to be of paramount importance for a trustworthy HCP - patient relationship [116, 124].

MSM background characteristics

Within one and a half years after cohort establishment, KEMRI-IAVI’s high-risk cohort included 834 subjects: 339 FSW, 210 heterosexual men, and 285 MSM. The majority of the MSM were unaware of their HIV status, their median age was 27 years and 61% had primary schooling or less. Among the MSM participants, 47% earned less than US $1 per day [53]. Forty percent of MSM participants were born at the coast and adhered to the Islamic faith as it is practiced in the Swahili culture, while MSM participants born outside of the coast often espoused the Christian faith or no faith at all. The majority (74%) were sex workers and reported a median of 3 casual partners in the last month, with a high percentage of inconsistent condom use (81%). Of the 285 MSM, the majority (60%) reported
sex with both men and women (MSMW), whereas 40% reported sex with men exclusively (MSME) [68]. STI prevalence at enrolment was higher in MSM reporting receptive anal intercourse (RAI) than in MSM who did not (22.4 %) [16]. HIV prevalence at enrolment was 24.5% as opposed to estimates of 6.1% HIV prevalence among the general population in Kenya [125]. Other risk factors such as unprotected sex, group sex and gonorrhoea infection in the last 6 months were strongly associated with HIV-1 acquisition [16].

Of note here is that the MSM risk group initially was designed as an epidemiological category to reference the same-sex activities, (i.e., anatomobiological sex [126], regardless of whether individuals identified themselves as ‘gay’ or ‘homosexual’). That said, use of the MSM category for understanding social epidemiology decontextualizes sexual behaviour and separates behaviour from its sociocultural context.

5.1 Kenya’s policy on HIV & AIDS

Evolution of Kenya’s policy on HIV & AIDS

Initially, the Kenyan government did not regard HIV and AIDS as a pandemic, and any discussion of HIV/AIDS was highly sensationalized and stigmatized. Eventually, the National AIDS Control Council (NACC) was set up within the Ministry of Health, but it was only after 1987 that the government recognized HIV/AIDS as a key public health problem. As a result, the government established the National AIDS and STI Control Programme (NASCOP) for the co-ordination of HIV and AIDS programmes, and with the support of the WHO, Kenya’s first five-year Medium Term Plan (MTP-I 1987–1991) and first national guidelines were developed. The focus was on blood safety, mass awareness creation, promotion of (heterosexual) safer sex, and control of STIs. However, public ignorance and rejection of condom use preached by religious organizations continued and complicated the implementation of effective measures.
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The ensuing MTP II, covering 1992–1995, acknowledged that problems relating to HIV/AIDS were not only confined to the health sector and strengthened intersectorial collaborations. Activities increased at the district level from 1995–1999, and the focus was on prevention of transmission (in particular, mother-to-child transmission) and reduction of the impact of AIDS in society [127]. In 1999, Kenya’s subsequent declaration that HIV and AIDS was a national disaster gave basis to prioritizing AIDS programmes. The task force on legal issues relating to HIV/AIDS was established (by Legal Notice No. 4015 of 22nd June 2001) [128, 129], and NACC was tasked to mobilize all sectors and co-ordinate a multi-sectorial approach, including legal and ethical issues, to fight against the HIV/AIDS pandemic.

From 1999–2004, the Ministry of Health—through NASCOP—developed the first Kenya National AIDS Strategic Plan (KNASP I). Although it was not multi-sectorial, the plan widely acknowledged HIV/AIDS as cross-cutting, and priority activities and implementation arrangements were spelt out and included in various policy documents.

5.2 Kenya’s policy on HIV & AIDS and MSM

KNASP II (2005/6–2009) marked the start of programming for key populations (KPs), namely for FSW, MSM, and IDU [130], as HIV-related morbidity and mortality were observed to be significantly higher among key vulnerable populations. Evidence from the Kenya Modes of Transmission Study (MOT) in 2009 [131], combined with findings from the 2007 Kenya AIDS Indicator Survey (KAIS) [20], and Kenya’s Demographic and Health Survey (KDHS) 2008—2009 [132], highlighted the concentrated epidemic among KPs who were thought to contribute 33% to Kenya’s overall new HIV infections in 2007. Of these new infections, sex workers accounted for 14.1% nationally and 18.2% at the coast specifically, while MSM increased new infections by 15.2% nationally and 20.5% at the coast, and IDU showed a contribution of 3.8% nationally and 6.1% at the coast [131].
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From 2009/10–012/13, KNASP III intensified the focus on MSM, revised the existing national HIV programming framework, and prioritized targeted, comprehensive programming for MSM [133]. However, the implementers, policymakers and HCPs faced insurmountable problems. In the context of Kenya’s criminalization laws on homosexual conduct, policy makers didn’t know how to design and operationalize health-care delivery models to enhance MSMs’ access to HIV/STI services. Likewise, HCPs were unsure how to treat MSM patients free from discrimination as anal sex practices, even in opposite-sex couples [134], were (and still are) a cultural taboo [135].

6.1 Societal discrimination

The absence of protective legislation for MSM in many African countries, including Kenya, in combination with the tendency of organised religion to brand homosexuality as immoral [86] and family/cultural expectations that men have partnerships that bear children [136], largely influences public opinion toward male same-sex behaviour [2, 137]. Moreover, institutionalization of a heterosexist ideological system has been shown to contribute to stigmatization of non-heterosexual behaviours and identities, and to structural oppression of sexual-minority populations in multiple regions in SSA [138]. As a consequence, hostile attitudes toward MSM are rampant, and violence is an occurrence inscribed in the daily individual and collective experience of MSM in the Kenyan coast.

Recent findings on sexual assault and HIV incidence among 1000 coastal Kenyan MSM and FSW deriving from KEMRI-IAVI’s cohort over a period of ten years showed a 3.7% annual incidence of rape of MSM versus 4.5% annual risk of rape for FSW. The incidence of physical assault on MSM (12%) and verbal abuse (29%) was considerably higher. Most perpetrators of rape were known to the assault victim, and included family, friends and neighbours [139]. In 2010, an antigay campaign resulted in an attack on the KEMRI-IAVI research clinic in Mtwapa [140-142].

6.2 Societal aggression
Almost invariably, antipathy toward homosexuality has hampered HIV research throughout Africa [142]. As mentioned, in 2010 misconceptions about KEMRI-IAVI’s MSM research at the Kenya coast, coupled with strong antigay sentiments, culminated in a homophobic hate attack. The study clinic used to be a safe haven for MSM, and study volunteers felt protected and safe in and around the clinic. The community knew that MSM individuals had access to special HIV services, not otherwise available to the general populace at the KEMRI clinic. It was only when the regional coordinator of the Council of Imams and Preachers of Kenya (CIPK), together with a regional representative of the National Council of Churches of Kenya (NCCK), held a press conference to condemn a rumoured but nonexistent gay wedding that antigay sentiments sparked a confrontation. On 12th February 2010, an ever-swelling and very angry crowd marched to KEMRI-IAVI’s clinic in search of the ‘gay bridal couple’. Innumerable people of all sorts, incited by regional politicians and commanded by the aforementioned imam and bishop, had joined in, chanting homophobic slogans and threatening to set the clinic on fire, with ‘gays’ and clinic staff inside. All the while religious leaders quoted selected Koranic and biblical texts to justify prejudice against MSM [137]. Also, a former member of Kenya’s parliament addressed the mob gathered outside the police station, saying that, ‘homosexuality must be stopped and every means used to make that happen’ and inciting the crowd by advising that ‘they should not even bother to bring the homosexuals they find to the police station but should take care of the issue themselves’ [142]. Study volunteers and research staff narrowly escaped lynching when the local police arrested and incarcerated persons, including research staff, suspected to be MSM.

6.3 Community engagement

Experiences from the clinic attack showed that structural barriers, mainly stigma and discrimination, can seriously affect MSM research and the provision of MSM health care services [143]. Although, KEMRI-IAVI had a clear appreciation of the risks associated with MSM research and the provision of HIV care for MSM, the community raids on the clinic were unexpected. Forced by the traditional
hierarchic systems of community advisory boards (CAB), KEMRI-IAVI’s population-specific CAB was summoned for dissolution. A crisis committee team was formed instead, with inclusion of the perpetrators (i.e., the politicians, religious leaders, community security) as well as traditional CAB members (i.e., chiefs, police and village elders, in addition to high-level managers from KEMRI). MSM representatives and human-rights lawyers were not included at this point, as increased representation of the general community got priority in order to provide a forum for bilateral communication and education [144].

Religious leaders’ training
Due to their social legitimacy and vigorous presence in Kenya’s coastal communities, religious leaders were essential players in a successful response to the attack. Initially, emergency efforts were made to diffuse the tension, but the deeper, long-term effects of discrimination on MSM access to care remained unaddressed. With funding from the American Foundation for AIDS Research (AMFAR), KEMRI-IAVI and its grassroots partner, PEMA KENYA, initiated a formative participatory process to uncover vital gaps in knowledge and key triggers for attitude change among religious leaders. Various training approaches were developed within a religious framework to tackle emotionally loaded issues of homosexuality [144].

In summary, sexuality, culture, gender, religion and, often, economic position reflect the intersecting strands of MSMs’ identity, affecting how they shape their lives and their sexual behaviours and often contributing to feelings of isolation, shame and disempowerment. These internalized feelings significantly impact MSM identity, which in Kenya often features poor social acceptance, low self-esteem, fatal sexual-risk behaviours, and continuous exposure to danger. In particular, MSM with a positive HIV status compounded by high rates of substance abuse, unemployment, homelessness, transactional sex, sexual violence and incarceration often face double stigma and are even more
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vulnerable to be criminalised, stigmatised and discriminated against, including in health care facilities.

7.1 Structural barriers to HIV prevention and service access for MSM

7.1.1 Stigma in health care facilities

HCP strategic position

Overt stigmatization of MSM by HCP in the context of HIV testing and health care delivery has been frequently reported, accompanied by denial of services [1, 43] and harassment within clinic spaces [145]. HCPs’ judgment of MSMs’ sexual orientation or gender identity has been shown to be a particular deterrent to MSM accessing services [146]. Also, HCP ignorance of HIV transmission routes has been documented to preclude MSM accurate disclosure of behavioural risk [145], and HCPs have often been known to compromise confidentiality [147].

However, inasmuch as HCPs’ occupational status confers trust, they hold strategic positions and have a unique opportunity to counsel patients about sexual health with the potential to bring community-wide changes in HIV/STI prevention and risk reduction [148]. Therefore, addressing the HCPs’ deeply held attitudes and beliefs that are a fundamental cause of stigma [149] is critical to effective and sustained stigma reduction [124].

Limited efficacy among HCP

In Kenya, the curricular content of medical education does not yet feature minority sexual orientation, sexual behaviours between men and MSMs’ sexual health needs. Anal sex is rarely discussed, and little specific time is given to discussion of sexual orientation in a Kenyan context. Training HCPs targets heterosexual populations, focus on penile-vaginal sex only and omit any mention of anal sex. Even where there is an expectation that HCPs should accurately document behaviours amongst clients (e.g., recording of a male client’s sexuality in VCT data records), reports
are usually based on guesswork rather than on direct questioning or are overlooked completely. Where HCPs do succeed in eliciting accurate same-gender behavioural information, HCPs are generally unprepared to respond to their clients’ wider health and psychosocial needs [44, 116, 148, 150].

‘MSM introductory guide for health care workers in Africa’

The realisation that the most critical step to improving HIV health care access for MSM was improving HCPs’ sensitivity in serving MSM [116] subsequently led to the initiative to develop a culturally adapted ‘MSM introductory guide for health-care workers in Africa’ [151]. The guide, originally designed by KEMRI and the Desmond Tutu HIV Foundation in South Africa, was revised in 2011 [152] and put online (www.marps.africa.org) as a web-based self-directed health care worker sensitivity training. This e-version addressed preventative and curative health services for MSM in ways that HCPs can be held accountable for and included essential elements such as the ‘right to health’ and the availability, accessibility and quality of health [148].

8.1 Public health ethics

Human rights

In 1963, four days after gaining independence from Britain, Kenya joined the United Nations, thereby committing to the universal validity of human rights embodied in the 1948 Universal Declaration of Human Rights. More than forty years on, lack of human rights realisation has often been expressed as an ‘implementation challenge’ [153] to provision of HIV and other health care services to MSM in Kenya. Post-colonial scholars, however, have increasingly questioned whether a national commitment to human rights in African contexts can offer protection against oppression and dominance and/or can defend the poor and the marginalised [154-156]. For many Kenyans applies that ‘human rights struggles constitute the stuff of their daily lives’ [156], that goes beyond ‘culture talk’ and ‘rights talk’ [157]. ‘And, as much as human-rights norms comprise abstract ideals of
human dignity and economic and social justice, they depend on religious vision and the commitment of specific communities to give them content and coherence and to motivate voluntary compliance with their dictates’ [158].

Especially at the Kenyan coast, where religion and culture remain highly significant parts of people’s public worlds, the link between religion, culture, and human rights cannot be ignored. Changing peoples’ perceptions of MSM requires great efforts as all normative frames are embedded in a set of values that need acknowledgment and engagement [159]. Therefore the implementation of more grassroots practices (i.e. community engagement) can help generate the political will to enforce legal norms and implement concrete policies [160] as and when necessary for human rights standards [158]. In the context of public health, HCPs have a critical role to play in implementing ethical principles. They can become part of Kenya’s taskforce for building a human rights culture, precisely because they do have the potential to become ‘assets’ for human rights implementation [161].

Aim of the thesis

The primary aim of this thesis is to provide data on the basis of which new and improved approaches to provision of MSM services needs can be developed in SSA. The views expressed are based on the author’s experiences in field studies of a capture-recapture enumeration of MSM sex workers in and around Mombasa in 2006, [162], an assessment of socio-demographic and sexual-risk characteristics of MSM at cohort enrolment in coastal Kenya done by audio computer-assisted self-interview (ACASI) and face-to-face interviews (FTFI) in 2008 [117], and an evaluation of MSM sensitivity training among seventy-four HCP in coastal Kenya in 2012 [124, 148]. Additional studies include a follow-up assessment of trained HCP and other stakeholders two years after the MSM sensitivity training [99], a literature review of MSM studies published in SSA in the period 2011–
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2014 [45], and an assessment of pre-exposure prophylaxis (PrEP) experiences among MSM in Kenya in 2010 [163].

The over-arching theme of the studies presentend, was MSM stigma reduction among HCPs in health care settings within the broader Kenyan societal formation. In relation to the MSM sensitivity training we reflected on the dynamics of (social) stigma i.e. HCPs’ disapproval of MSM patients, and to a greater extent the wider community’s discontent with MSM community members. We looked at the social phenomenon ‘power’, and although there is no rigorous, conceptual clarity, it connotates the ability to influence the behaviour of people [164], is unevenly distributed [165], and leads to conflicting interests between those who exercise power (i.e. HCPs and broader community) and the interests of those they exclude (i.e. MSM and other minorities). Looking at these imbalances of power, also the issue of ‘empowerment’ was addressed. Recognizing the necessity of redistributing knowledge, the sensitivity training had a practical and realistic focus, contextualizing training content, linking empowerment to taking ownership. Two main theories of power were relevant to analyse the role ‘power’ played in HCPs’ attitudes towards MSM: Lukes’ three-dimensional model of power and Foucault’s postmodernist view of power [166, 167].

Theories of power

According to Lukes, the cultural norms of the majority population dominate the social agenda [166]. Arguing that power is socially structured, Lukes builds on previously developed one- and two-dimensional theories of power by Bachrach and Baratz [168], which state that “power conflicts”—i.e., the connection between the “face of overt power” (the way decisions are made) and the “covert face of power” (the ability to prevent decision making)—does not rise above the public face of power as it is confined to certain values, rituals or beliefs that tend to favour the vested interests of one (or more) group(s) relative to others [169]. Lukes also pointed out that “the bias of the system is not sustained simply by a series of individually chosen acts, but also, more importantly, by the socially
structured and culturally patterned behaviour of groups, and practices of institutions, which may indeed be manifested by individual inaction” (Lukes, 1974, pp. 21-2). Because HCPs must work within a social structure that is designed to serve the cultural norm (i.e., excluding sexual minorities), they are frequently prevented from challenging the unequal distribution of power and instead feel pressure to continue excluding sections of society such as MSM. This phenomena is illustrated in Chapter 6, which described how attempts to integrate MSM in mainstream HIV care services challenged the dominance of male ideology in Kenyan society, as observed through the experiences of young male HCPs working with MSM [170].

In the postmodernist view of power, knowledge and power are inseparable, and from this vantage point, professional knowledge represents the “dominant truth” [167]. When applying Foucaultian theory as a key concept in analysing power within the context of HCPs’ work, existing power structures are reinforced and exacerbate the dichotomous view of power due to the oppositional construction of the “powerful” HCP and “powerless” MSM [171]. Here, the hegemony of masculine definitions of sexual behaviour were played out as some MSM saw themselves placed in a position of constantly navigating their social surroundings [99]. In relation to the issue of empowerment, Foucault pointed out the expectation of an “insurrection of subjugated (or basic) knowledges” [172], which, in the context of strengthening HIV health care services for MSM in coastal Kenya, is a continual process of growth and change, ultimately aiming at improved acceptance of homosexuality in Kenyan society over the long term.

Outline of this thesis
This thesis is organised as follows: Chapter 2 estimates the magnitude of MSM who sell sex in coastal Kenya. Chapter 3 assesses whether audio computer-assisted self-interview (ACASI) of female and male sex workers elicits more accurate reporting of socially sensitive behaviours than a face-to-face interview. Chapter 4 describes the effects of the web-based, self-directed MSM sensitivity
training intervention for HCP, combined with facilitated group discussions on knowledge and homophobic attitudes among HCP in four districts of coastal Kenya. Chapter 5 describes specific MSM service needs reported in this thesis and reflects on the integration challenges of MSM services in coastal Kenya and beyond. Chapter 6 captures views of HCP and other stakeholders two years after the MSM sensitivity training. Chapter 7 reviews new MSM studies from SSA in the period 2011–2014 that necessitated updating of the MSM sensitivity training. Chapter 8 describes the acceptability and adherence of MSM and FSW in Nairobi and Mtwapa, Kenya, who used oral pre-exposure prophylaxis (PrEP) in an HIV Phase 1 intervention trial. Finally, Chapter 9 identifies recommendations for strengthening health care services for MSM in Kenya.

Study setting

Study site

For this research, three project sites were used. The main site—located in Mtwapa—engaged MSM populations for research follow-up and offered a safe space where MSM regularly attended for HIV/STI screening. The site included a stand-alone HIV/STI research clinic, an adjacent drop-in centre, and a clinical trials unit with counselling rooms specifically built for the KEMRI-IAVI vaccine feasibility study. The second site was in Malindi and consisted of office- and clinical space in an extension of the Comprehensive Care Clinic (CCC) of Malindi’s District Hospital (MDH). This site was integrated with care services such as treatment for key populations and included a recently started needle-exchange program. The KEMRI-Wellcome Trust Research Programme in Kilifi provided a stand-alone HCT site, a community centre, study-specific intake rooms and private client rooms where the confidential interviews and audio computer-assisted self-interviewing took place. Access was given to seminar rooms for conducting focus-group discussions, and a computer laboratory for self-directed online learning. At all of the KEMRI sites, safety, comfort, respect and confidentiality of research participants were ensured.
Introduction

REFERENCES

Chapter 1

41. GFATM. Addressing sex work, MSM and transgender people in the context of the HIV epidemic: The Global Fund’s Sexual orientation and gender identities strategy, p. 4, section
Introduction


Chapter 1


70. Spronk R. “Intimacy is the name of the game”: Media and the praxis of sexual knowledge in Nairobi. Anthropologica 2011, 53: 145-158.


an appreciated Swahili man financially maintains and controls women and children, thereby giving
most of these MSM also have female sexual partners and are often in marital relationships with
Initially, in response to the significant role FSW have played in the
In Mombasa, roughly one in fifty Swahili (Arab-African) men are assumed to be homosexual [10];
unprotected receptive anal intercourse (URAI) is the predominant mode of HIV transmission

counselling services provided opportunities to openly and confidentially speak about sexual

counselling in the African context, described by Hardon et al. [57-59], as one of the most powerful
KEMRI-IAVI targeted at-risk men and women mobilised at bars and nightclubs and mostly focused on
and to facilitate an understanding of risk factors for incident HIV and STIs among sex workers,
2.2.1 HIV epidemic in
3.1 Coastal Society: Religion, culture, sexual identity and stigma
an appreciated Swahili man financially maintains and controls women and children, thereby giving most of these MSM also have female sexual partners and are often in marital relationships with behaviour in 2003 [35], HIV testing and services had not been provided to MSM until 2005 [53]. In Mombasa, roughly one in fifty Swahili (Arab-African) men are assumed to be homosexual [10]; [66, 67].

It is now well documented, that MSM populations in Kenya experience severe HIV epidemics with unprecedented high HIV-1 prevalences and HIV-1 incidences [46, 61-63]. However, whilst amongst MSM [64], anal intercourse is so stigmatised by society [65] that HIV prevention messaging has remained unfocused, and many MSM would rather not come forward for health care services to have been given by Supreme Being [11].

One of the significant characteristics of the Kenyan culture is its religious basis. Traditionally, Kenyan concepts of heterosexual anal sex and HIV risk in five East African communities. J Sex Res 2014, 51:863-873.


Samura S. Africa's last taboo, An investigation into the persecution that gay people face in Africa - Robin Barnwell documentary 2011.

Seale A. "Heteronormativity in Sub-Saharan Africa". Development 2009, 52 84-90.


Chapter 1

164. Dahl RA. The concept of power In: Behavioral Science. Department of political science, Yale University; 1957. pp. 201.
Introduction

Chapter 2

“Are You on the Market?”: A Capture-Recapture Enumeration of Men who Sell sex to Men in and around Mombasa, Kenya

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ABSTRACT

Background: Men who have sex with men (MSM) are highly vulnerable to HIV infection, but this population can be particularly difficult to reach in sub-Saharan Africa. We aimed to estimate the number of MSM who sell sex in and around Mombasa, Kenya, in order to plan HIV prevention research.

Methods: We identified 77 potential MSM contact locations, including public streets and parks, brothels, bars and nightclubs, in and around Mombasa and trained 37 MSM peer leader enumerators to extend a recruitment leaflet to MSM who were identified as ‘on the market’, that is, a man who admitted to selling sex to men. We captured men on two consecutive Saturdays, 1 week apart. A record was kept of when, where and by whom the invitation was extended and received, and of refusals. The total estimate of MSM who sell sex was derived from capture-recapture calculation.

Results: Capture 1 included 284 men (following removal of 15 duplicates); 89 men refused to participate. Capture 2 included 484 men (following removal of 35 duplicates); 75 men refused to participate. Of the 484 men in capture 2, 186 were recaptures from capture 1, resulting in a total estimate of 739 (95% confidence interval, 690–798) MSM who sell sex in the study area.

Conclusions: We estimated that 739 MSM sell sex in and around Mombasa. Of these, 484 were contacted through trained peer enumerators in a single day. MSM who sell sex in and around Mombasa represent a sizeable population who urgently need to be targeted by HIV prevention strategies.

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AIDS 2007, 21:1349–1354

Keywords: AIDS, Africa, men who have sex with men, capture-recapture, enumeration, HIV prevention
Enumeration of men who sell sex to men in coastal Kenya

INTRODUCTION

Populations at higher risk for HIV infection are often the most difficult to reach and this is particularly true of men who have sex with men (MSM) in sub-Saharan Africa [1–3]. Research on MSM in Africa has been largely neglected because male-to-male sex is illegal in many countries, has been publicly denied by some heads of state and remains a matter of religious controversy [4]. In addition, researchers have not formally assessed the role of anal intercourse in the epidemiology of AIDS in Africa [5,6]. As a consequence, homosexual behaviour remains stigmatized, MSM fear legal authorities, and virtually no health services in Kenya are tailored towards diagnosis and treatment of sexually transmitted infections in MSM [7].

HIV prevention counselling services targeted towards MSM do not exist in Coastal Kenya.

There has been little research on MSM in Kenya’s coastal region, although the existence of men who sell sex has been documented [8]. In 2002, formative research with 25 MSM who sell sex was conducted in Mombasa; they reported risky sexual behaviours, low condom use, and vulnerability to discrimination and violence [9]. Since late 2005, MSM who sell sex have been recruited into an ongoing cohort study of persons at higher risk for HIV infection, in an urban area adjacent to Mombasa district.

HIV prevalence at screening was 38% [23/60, 95% confidence interval (CI), 26–52%] and three seroconversions were captured in 37 HIV-negative MSM (HIV incidence = 20.9 per 100 person years observation; 95% CI, 6.7–64.9) [10].

Preliminary study findings from the 2002 formative research and ongoing cohort study were communicated to district and provincial health authorities, and a study working group was formed to advise the Provincial Medical Office on the health needs of MSM who sell sex around Mombasa. This report presents the results of a collaborative effort to enumerate MSM who sell sex in and around Mombasa, to prepare for HIV prevention interventions.

Methods

Cohort study

Since July 2005, key populations at higher risk for HIV infections have been recruited at a research clinic for sexually transmitted diseases (STD) in an urban location north of Mombasa. This cohort includes mostly female sex workers (FSW), male sex workers (MSW) who have paid sex with women, and MSM, the majority of whom also engage in sex work [10]. Ongoing recruitment of MSM (including those who do not sell sex) is facilitated by 10 trained MSM peer leaders who provide information about the cohort study, including the benefit of counselling and testing for HIV, and screening and treatment of STD. Prospective study volunteers are invited to the drop-in centre, located next to the STD clinic, to receive further information about research participation. The study was granted approval by the National Ethical Review Committee under Kenya Medical Research Institute (REMRI).

Contact locations for men who have sex with men in and around Mombasa

In the formative stage of this study, the Population Council and the International Centre for Reproductive Health mapped over 50 key contact locations where MSM are known to search or wait for clients. During the enumeration training, additional sites were found, and a total of 77 locations were categorized geographically and assigned to 12 zones in and around Mombasa District. These locations included bars (23 locations), nightclubs/discos (eight locations), beach areas and beach bars (five locations), other private brothels, businesses, and estates (32 locations), and public streets and parks (nine locations; Table 1).

Training of enumerators

A total of seven training sessions were conducted, from 24 April to 26 May 2006. In the first two sessions 14 MSM peer leaders were trained and helped to design a recruitment leaflet. This group was gradually enriched with 23 enumerators identified by the peer leaders, many of whom had been recruited themselves in the ongoing cohort study.

Enumeration exercise

Peak hours of contact were determined for each contact location and an enumeration scheme was established for each team, allowing for a defined observation period per location. It was agreed that Saturday afternoons and

---

Table 1. Numbers and locations of men who have sex with men who sell sex captured.

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Capture 1</th>
<th>Capture 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>New captures</td>
<td>284</td>
<td>298</td>
</tr>
<tr>
<td>Bars (21 locations)</td>
<td>95</td>
<td>71</td>
</tr>
<tr>
<td>Nightclubs/discos (8 locations)</td>
<td>57</td>
<td>76</td>
</tr>
<tr>
<td>Beach areas/beach bars (5 locations)</td>
<td>35</td>
<td>25*</td>
</tr>
<tr>
<td>Other private brothels, estates (32 locations)</td>
<td>39</td>
<td>62</td>
</tr>
<tr>
<td>Street areas/parks (9 locations)</td>
<td>58</td>
<td>64</td>
</tr>
<tr>
<td>Matches*</td>
<td>–</td>
<td>106</td>
</tr>
<tr>
<td>Bars (21 locations)</td>
<td>–</td>
<td>36</td>
</tr>
<tr>
<td>Nightclubs/discos (8 locations)</td>
<td>–</td>
<td>23</td>
</tr>
<tr>
<td>Beach areas/beach bars (5 locations)</td>
<td>–</td>
<td>7</td>
</tr>
<tr>
<td>Other private brothels, estates (32 locations)</td>
<td>–</td>
<td>34</td>
</tr>
<tr>
<td>Street areas/parks (9 locations)</td>
<td>–</td>
<td>86</td>
</tr>
<tr>
<td>Total captures</td>
<td>284</td>
<td>484</td>
</tr>
<tr>
<td>Tag (i.e. leaflet) refusals</td>
<td>89 (22.9%)</td>
<td>75 (12.6%)</td>
</tr>
<tr>
<td>Duplicates, or captured more than once in the same round</td>
<td>15 (3.9%)</td>
<td>35 (5.9%)</td>
</tr>
<tr>
<td>Total contacts</td>
<td>388</td>
<td>594</td>
</tr>
</tbody>
</table>

*High tide during afternoon and evening hours limited capture probabilities at beaches during second count.
*Some locations had greater number of recaptures than the number of first count captures, reflecting high mobility.
evenings would provide the largest probability to capture MSM who sell sex. To minimize security risks to the enumerators, most outdoor sites were only surveyed during daylight hours until about 1900 h and most enumerators were instructed to stop after midnight.

Enumerators were supported by three surveillance teams conducting periodic site checks to ensure that enumerators were present at the assigned times, and to answer questions and resolve issues (e.g., shortage of recruitment flyers). Each enumerator was given enough money to provide for a safe taxi ride to their homes at the end of the evening.

**Identification of men who have sex with men who sell sex**

Given that both prostitution and sex between men is illegal in Kenya, approaching and confirming contacts as MSM who sell sex presented a unique challenge to the enumerators. Participatory discussion and role-playing revealed, however, that MSM consider themselves to be very good at visually identifying other MSM by evaluating a man’s appearance, body language, and/or clothing. Other ethnographic research on MSM in Senegal supports this [11]. An enumerator would first visually identify, then approach and start casual conversation with the suspected MSM contact. Once the enumerator was confident that the contact’s MSM status was confirmed, he would ask if the captured MSM was ‘seeking clients, or currently willing to sell sex in exchange for money and/or goods’, that is, if he was ‘on the market’. Spoken in Swahili, *kibow* refers literally to a local market.

After it was established that an MSM was ‘on the market’, and therefore an MSM who sells sex, the enumerator would introduce himself as a peer educator with KEMRI, and offer an A5-size recruitment leaflet containing information in both Swahili and English about MSM, the risk of anal transmission of STD, including HIV, the benefits of regular HIV counselling and testing, and the location of the research clinic. Designed to be colourful and eye-catching, accepting the leaflet would effectively ‘tag’, or capture each contact. The enumerators were further instructed to show contacts their identity badge, and, if necessary, a signed letter from the Provincial Medical Officer providing explanation and justification of the research activity. MSM contacts who had previously received a leaflet elsewhere were asked if the leaflet was given by an official enumerator (with badge) or by a peer contact. Data were recorded for each contact, using tick boxes and requiring minimal writing (Fig. 1).

**Estimation of population of men who have sex with men who sell sex**

To estimate the total population of MSM who sell sex, we applied a ‘capture-recapture’ formula described in detail elsewhere [12,13]:

\[
\frac{c_1}{n} = \frac{m}{c_2}
\]

In brief, \(c_1\) (capture 1) was the first sample of individuals captured from the population \(n\) of MSM who sell sex. One week later at the same places and times, the second sample \(c_2\) (capture 2) was captured. Some of \(c_2\) captured in the second count comprised recaptures, or matches \(m\), (i.e., those who were also captured during the first count). The formula assumes that the proportion or second count matches \(m\) to second count captures \(c_2\), equals the proportion of those captured in the first count \(c_1\) to the total population \(n\). Therefore, \(n\) can be calculated as:

\[
n = \frac{c_1 \times c_2}{m}
\]

To estimate the 95% confidence interval for \(n\), the following formula was used:

\[
95\% CI = n \pm 1.96 \times \sqrt{\text{Var}(n)}
\]

**Results**

Capture 1 included 284 men (following the removal of 15 duplicates); 89 men refused to participate. Capture 2 included 484 men (following the removal of 35 duplicates); 75 men refused to participate. Of the 484 men in capture 2, 186 (recaptures) were also included in capture 1. These men were considered matches. Hence, the estimate of the population size is:

\[
\frac{c_1(284) + c_2(484)}{m(186)} = 739(95\% CI, 690 – 798)
\]

**Discussion**

We used a two-sample capture-recapture calculation to estimate that 739 MSM sell sex in and around Mombasa. In total, 582 MSM who sell sex were contacted through trained peer enumerators and an information leaflet about reducing HIV and STD transmission extended. Of these, 484 were contacted in a single day, offering avenues for HIV prevention.

Despite high community stigma and legal concerns, trust was established with a core group of MSM sex workers, who currently benefit from regular HIV counselling and testing, STD screening, and provision of comprehensive care at a research STD-clinic [10]. Self-selection of the
Enumeration of men who sell sex to men in coastal Kenya

ABSTRACT
We estimated that 739 MSM sell sex in and around Mombasa. Of these, 484 were contacted through trained peer enumerators in a single day. MSM who sell sex in and around Mombasa represent a sizeable population who urgently need to be reached for HIV prevention interventions. There has been little research on MSM in Kenya’s coastal region, although the existence of men who sell sex has been documented. In 2002, formative research with ongoing cohort study of persons at higher risk for HIV infection, in an urban area adjacent to Mombasa district. Preliminary findings from the 2002 formative research were communicated to district and provincial health authorities, and a study and ongoing cohort study were communicated. Prevalence and behavioral characteristics of MSM do not exist in Coastal Kenya.

METHODS
A total of seven training sessions were conducted, from 24 to 25 MSM who sell sex was conducted in Mombasa; they by 10 trained MSM peer leaders who provide information. Additional, researchers have not formally assessed the role of MSM in HIV prevention. HIV prevalence, risk behaviors, and STI infections have been recruited at a research clinic for HIV prevention interventions. The population at higher risk for HIV infection are often the majority of enumerators from this MSM cohort, participatory development of the recruitment leaflet, endorsement of the outreach activity by national health authorities, and formative research conducted by two collaborative groups [9], allowed us to draw two samples of MSM who were selling sex in and around Mombasa at 77 locations, on two consecutive Saturdays.

Four assumptions underlie the capture–recapture methodology [12,13]: the population must be closed, the capture history of each member accurate, capture sources independent, and the probability of being captured during both rounds equal. In the current study, the MSM population was not completely closed, but little change would have been expected over the period of 1 week; training and supervision of enumerators helped to ensure capture accuracy. High mobility of recaptures to new locations documented in the second count supports the case for independence of many of the capture sources, although, for organizational and safety reasons, enumerators visited the same locations on both days.

Due to familiarity with the enumerators and the project, some men counted in capture 1 may have been more...
likely to be included in capture 2. However, this effect on
the capture—recapture estimate (i.e. an increase in the
matches, and therefore a reduction of the estimate) may
have been balanced by men included in capture 2 who
refused a leaflet the previous week, thereby failing to be
recorded as matches.

During the second round we almost doubled MSM
contacts, with an almost equal number of new contacts,
a large number of recaptures, and an overall decrease in the
rate of refusals. Possible explanations for this include: the
second count was done near the month-end, following a
Friday when many Kenyans received their salaries—hence
an increase of MSM who sell sex in the study area looking
for clients; the sites documenting most recaptures were a
popular public park area and adjacent nightclub where
increased public traffic was observed during the second
count; and, finally, enumerators reported an improvement
in skills and confidence following the successful first count
a week earlier. These factors may have affected the
probability of capture in the second count.

Our estimate of 739 MSM who sell sex in and around
Mombasa is likely to be conservative. Thirty-seven
enumerators could not provide permanent coverage at 77
locations, some felt that the time limits were too
restrictive, and MSM working in private brothels or
homes were not contacted efficiently.

This study limited the enumeration to MSM who sell sex,
because it was assumed that commercial MSM are more
likely to congregate at key areas to seek clients. However,
itis seems likely that MSM who sell sex make up only a part
of the larger population of MSM in this community,
highlighting the potential importance of homosexual
contact as a means of HIV transmission. Further
investigation to collect information on the clients of
MSM who sell sex as well as MSM who do not engage in
commercial sex is clearly needed. A large study of
behaviour characteristics of approximately 400 MSM
who sell sex in and around Mombasa is currently ongoing.

Targeting MSM for HIV prevention and STD treatment
challenges established AIDS control options in Kenya, as
messages promoting male condoms do not generally
address anal sex. If HIV prevalence, risk behaviour, and
HIV incidence in the larger group is similar to the group
recruited in the cohort [10], then the epidemiologic impact
of MSM on HIV transmission in the Mombasa area may be
substantial, particularly as the sexual networks of MSM in
Kenya extend to women, and are not isolated from the
general population [7]. This concern and the results of this
study have been presented to the Coast Provincial Medical
Officer and the National AIDS Control Council of Kenya,
with the view towards implementing ‘positive prevention’
[14]. Reaching out and contacting MSM who sell sex with
a view to reducing HIV transmission is recommended as an
HIV public health intervention but would not necessarily
require capture—recapture methodology.

In summary, we documented a group of MSM selling sex
in and around Mombasa, at both public and private
locations. Targeting HIV prevention strategies towards
MSM is urgently needed.

Acknowledgements

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References

2. Office of the United States Global AIDS Coordinator. The
   President’s emergency plan for AIDS relief: U.S. five-year global
3. Wade AS, Kane CT, Diallo PN, Diop AK, Gaaye K, Mboop S,
   et al. HIV infection and sexually transmitted infections among
   men who have sex with men in Senegal. AIDS 2005; 19:2133–
   2140.
4. McKenna N, On the margins: men who have sex with men and
5. Brody S, Potterat J. Assessing the role of anal intercourse in
   416.
6. Fergusson A, Morris C. Assessing the role of anal intercourse
   in the epidemiology of AIDS in Africa (Letter). Int J STD AIDS
   2003; 14:856.
7. Otyango-Ouma W, Burungu H, Gebel S. Understanding the
   HIV/STD risks and prevention needs of men who have sex
Are you on the market? A capture–recapture enumeration of men who sell sex to men in coastal Kenya

Methods

Moore's Working Group was formed to advise the Provincial Medical Board of Mombasa. This report presents the results of a collaborative working group to capture men who sell sex in and around Mombasa.

Background:

Men who have sex with men (MSM) are highly vulnerable to HIV infection, but this population can be particularly difficult to reach in sub-Saharan countries, has been publicly denied by some heads of state in many countries, has been neglected because male-to-male sex is illegal in many countries, and remains a matter of religious controversy. In August 2006, there has been little research on MSM in Kenya's coastal region, although the existence of men who sell sex has been documented. In 2005, MSM who sell sex have been recruited into an ongoing cohort study of persons at higher risk for HIV infection by 10 trained MSM peer leaders who provide information, counseling and testing for HIV, and screening and about the cohort study, including the benefit of by 10 trained MSM peer leaders who provide information, counseling and testing for HIV, and screening and about the cohort study, including the benefit of

Enumeration exercise

Total captures were captured in 37 HIV-negative MSM who have sex with men, capture–recapture, enumeration, HIV prevention

Chapter 2

Table 1. Numbers and locations of men who have sex with men who reported risky sexual behaviours, low condom use, and documented sexually transmitted diseases (STD) in an urban location where the infection, but this population can be particularly difficult to reach in sub-Saharan countries, has been publicly denied by some heads of state in many countries, and remains a matter of religious controversy. In August 2006, there has been little research on MSM in Kenya's coastal region, although the existence of men who sell sex has been documented. In 2005, MSM who sell sex have been recruited into an ongoing cohort study of persons at higher risk for HIV infection by 10 trained MSM peer leaders who provide information, counseling and testing for HIV, and screening and about the cohort study, including the benefit of

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Chapter 3

Is Audio Computer-Assisted Self-Interview (ACASI) Useful in Risk Behaviour Assessment of Female and Male Sex Workers, Mombasa, Kenya?

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Is Audio Computer-Assisted Self-Interview (ACASI) Useful in Risk Behaviour Assessment of Female and Male Sex workers, Mombasa, Kenya?

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ABSTRACT

Background: Audio computer-assisted self-interview (ACASI) may elicit more frequent reporting of socially sensitive behaviours than face-to-face (FtF)-interview. However, no study compared responses to both methods in female and male sex workers (FSW, MSW) in Africa.

Methodology/Principal Findings: We sequentially enrolled adults recruited for an HIV-1 intervention trial into a comparative study of ACASI and FtF-interview, in a clinic near Mombasa, Kenya. Feasibility and acceptability of ACASI, and a comparative analysis of enrolment responses between ACASI and FtF on an identical risk assessment questionnaire were evaluated. In total, 139 women and 259 men, 81% of eligible cohort participants, completed both interviews. ACASI captured a higher median number of regular (2 vs. 1, p<0.001, both genders) and casual partners in the last week (3 vs. 2, p=0.04 in women; 2 vs. 1, p<0.001 in men). Group sex (21.6 vs. 13.5%, p<0.001, in men), intravenous drug use (IVU; 10.8 vs. 2.3%, p<0.001 in men; 4.4 vs. 0.8%, p=0.03 in women), and rape (8.9 vs. 3.9%, p=0.002, in men) were reported more frequently in ACASI. A surprisingly high number of women reported in ACASI that they had paid for sex (49.3 vs. 5.8%, p<0.001). Behaviours for recruitment (i.e. anal sex, sex work, sex between males) were reported less frequently in ACASI. The majority of women (79.2%) and men (69.7%) felt that answers given in ACASI were more honest. Volunteers who were not able to take ACASI (84 men, and 37 women) mostly lacked reading skills.

Conclusions/Significance: About 1 in 5 cohort participants was not able to complete ACASI, mostly for lack of reading skills. Participants who completed ACASI were more likely to report IDU, rape, group sex, and payment for sex by women than when asked in FtF interview. ACASI appears to be a useful tool for high risk behaviour assessments in the African context.

Introduction

Audio computer-assisted self-interview (ACASE), which is known to capture some sensitive behaviours more reliably in high risk populations in developed nations [1], has not been evaluated in populations recruited for HIV-1 prevention trials in Africa. As such populations are purposely selected for presumed ‘high-risk’ behaviour, interviewer attitudes may impact socially desirable responses of the interviewee, especially because socially stigmatized behaviours such as male same sex behaviour, or anal sex practices are rarely assessed in Africa [2,3].

Research on computerized interviewing in the USA has shown that replacing the interviewer with a computer can provide conditions, including privacy and the perception of anonymity, that facilitate reliable and frank reporting, thereby increasing reports of sensitive behaviour in surveys of the general population [4,5], adolescents [1,6], and injection drug users [IDUs] [7,8]. In addition to reducing social desirability bias, ACASI has several advantages over face-to-face (FtF)-interview; it standardizes data collection by using recorded audio question tracks and captures data directly into a database, allowing for automated skip patterns and built-in logic checks. The use of ACASI has been recommended for socio-behavioural research in developing countries [1,9].

Perhaps due to its cost and technological complexity, the use of ACASI in African research studies has been low. Comparison studies of ACASI and FtF-interview in the general population in Zimbabwe and in 4 other developing countries suggested that participants are at ease with completing ACASI, and preferred a computer for answering sensitive questions, although low literacy

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may pose problems [10,11]. Among adolescents in Kenya, substantial differences between interview methods were reported for questions related to premarital sex, although not always in the expected direction [12,13]. Ongoing studies targeting adolescents in rural/Makueni aim to evaluate which method of interview elicits increased reports of sexual risk behaviour, including an assessment of the impact of order of the interview mode on responses [14].

To our knowledge, no study has compared responses by ACASI with FTF-interview in high risk populations recruited for HIV-1 prevention trials in Africa. In Mombasa, Kenya, male and female sex workers (MSW, FSW) have been invited to join an ongoing cohort study to monitor HIV-1 seroconversion in preparation for studies of new HIV-1 prevention interventions [15,16]. Previously, at enrolment to the cohort study, HIV risk behaviours have been established through FTF-interview. To this end, we invited a cohort of participants to also take ACASI at their enrolment visit, and compared risk behaviour in volunteers who had undergone both ACASI and FTF-interview. Our study was exploratory and aimed at hypothesis generation and assessment of contextual acceptability and feasibility of ACASI in FSWS and a large group of MSW who have sex with men. Both sex work and homosexual sex are illegal in Kenya. We assumed ACASI to be helpful in detecting behaviours that may be under-reported in FTF-interview due to social desirability bias. We also assumed that the order of the interview mode might influence responses given in either method. Hence we crossed over the order of interview methods. All interviews were taken on the same day and prior to HIV-1 testing.

**Results**

**Eligibility and feasibility of ACASI**

Eligibility was assessed among newly recruited cohort participants (345 men and 176 women). Of these, 121 (23%) volunteers (84 men, 37 women, p = 0.3) were not able to take ACASI, 72 (55%) volunteered, and 126 (21%) experienced a technical computer problem while taking ACASI. 16 (13%) were not willing, and 8 (7%) were initially willing but declined after waiting too long. Excluding technical failures, 398 (81% of 494) consecutive cohort volunteers were able and willing to complete ACASI.

Socio-demographic characteristics and laboratory confirmed STI for participants and non-participants are shown in table 1. HIV-1 prevalence did not differ between participating and non-participating men and women. Not surprisingly, both non-participating genders had a similar low education attainment. Non-participating men presented more often with non-specific urethritis at enrolment, and a larger proportion was unemployed. There were no differences in key risk behaviour comparisons established in FTF interview (i.e. gender of sex partner, anal sex, been paid, or having paid for sex, partner counts, group sex, rape, and BDU) between participating and non-participating men. Non-participating women presented more often with nymphitis at enrolment, and a larger proportion had no prior knowledge of their HIV-1 status. Non-participating women more frequently reported anal sex in the past 3 months (52.2 vs. 16.8%, p = 0.05), and recalled a higher number of recent casual partners (median 4 vs. 2, p = 0.003).

A total of 239 men and 139 women completed both interview methods, and were similar in age, education attainment, and unemployment status, although more men had formal employment (table 1). The majority (73%) of men did not know their HIV-1 status while 66.9% of women had taken an HIV test before.

**Acceptability of ACASI**

An almost equal proportion, 33.3% in women, and 30.8% in men, had used a computer previously (table 2). Over 90% in both groups found the questions easy to understand and were comfortable in answering. Overall, almost 80% of women and 70% of men felt that answering questions in ACASI would give more honest answers, 11.7% of women, and 16.0% of men felt the methods were about the same, and 9.2% of women, and 14.3% of men felt answers in ACASI would be less honest than in a FTF-interview, p = 0.16. These proportions were similar regardless of the order of methods, with the exception that no woman who took ACASI after FTF believed that ACASI would provide less honest answers (data not shown). Mean duration to complete ACASI was almost double the duration of the FTF-interview for both women and men (31.2 ± 15.9 minutes, median 18 minutes per woman, p = 0.001). Women took longer than men to complete both FTF- and ACASI-interviews, by 5 and 3 minutes, respectively. Men and women experienced the duration of ACASI as just right (67.1 ± 62.3%) or too short (11.9 ± 17.5%), while 20% of both groups felt that ACASI took too long.

**Comparisons of sexual risk behaviour, substance misuse, and violence**

ACASI captured a significantly higher median number of casual sex partners in women (3 vs. 2, table 3, and men (2 vs. 1, table 4), with excellent agreement between both interview methods in women, and good agreement in men. Agreement between methods for reported regular sex partners for women and men was poor. Bland Altman plots (figure 1) show the average of the reported number of partners (regular or casual) by both methods versus the difference between reported number of partners by ACASI minus FTF-interview for women and men. For both men and women, ACASI was more sensitive in capturing a higher regular partner number (2 or more in the last week), while FTF-interview captured a slightly higher report of regular partner numbers when lower numbers (<2) were reported. Bland-Altman plots demonstrate that for each increase in average partner number participants reported more regular partners by ACASI (figure 1, A and B). For casual partners, there appears to be no such increase between methods (figure 1, C and D).

Reported consistent (i.e. 100%) condom use with casual sex partners in the past week was similar for both methods (women: 55.6 ACASI vs. 57.6% FTF; men: 41.3 ACASI vs. 35.5% FTF). In ACASI, reported consistent condom use during anal sex over the last 3 months, was substantially lower for both women (16.5 ACASI vs. 24.6% FTF) and men (15.4 ACASI vs. 19.3% FTF, tables 3 and 4).

Reported partner gender preference for women and men was similar in ACASI and FTF-interview. Fewer women reported anal sex practice (39.6 vs. 43.9, p = 0.15), and fewer women reported having received cash for sex in the last 3 months, was reported significantly less frequently in ACASI than in FTF-interviews (13.5 vs. 15.4, p = 0.00) and having paid for sex themselves (45.2 vs. 39.5%, p = 0.09).

ACASI and FTF-interview had excellent agreement for daily cigarette and marijuana use in women and men, good agreement...
### Chapter 3

#### Table 1. Characteristics of Audio-Computer-Assisted Self-interview (ACASI)-participating and non-participating study participants, at cohort enrolment, Kenya, 2008.

<table>
<thead>
<tr>
<th>Socio demographic characteristics &amp; Laboratory confirmed infections, at screening</th>
<th>Participating men N = 259</th>
<th>Non-participating men N = 84</th>
<th>P - value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age, yrs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>27 (23–32)</td>
<td>27 (22–34)</td>
<td>0.9</td>
</tr>
<tr>
<td><strong>Level of education</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median years in education (Q0I)</td>
<td>9 (6–12)</td>
<td>4 (0–8)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>80.3 (208)</td>
<td>82.1 (99)</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>19.7 (51)</td>
<td>17.9 (21)</td>
<td></td>
</tr>
<tr>
<td><strong>Employment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>43.4 (112)</td>
<td>66.7 (96)</td>
<td></td>
</tr>
<tr>
<td>Self</td>
<td>34.8 (90)</td>
<td>22.6 (19)</td>
<td></td>
</tr>
<tr>
<td>Formal</td>
<td>21.7 (56)</td>
<td>10.7 (9)</td>
<td>0.001</td>
</tr>
<tr>
<td><strong>Knowledge of HIV status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Don't know</td>
<td>73.1 (190)</td>
<td>66.1 (56)</td>
<td></td>
</tr>
<tr>
<td>Know positive</td>
<td>1.9 (5)</td>
<td>2.4 (2)</td>
<td></td>
</tr>
<tr>
<td>Know negative</td>
<td>24.7 (64)</td>
<td>28.6 (24)</td>
<td>0.7</td>
</tr>
<tr>
<td><strong>HIV-1 status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>86.3 (208)</td>
<td>80.9 (98)</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>13.7 (35)</td>
<td>19.1 (21)</td>
<td>0.9</td>
</tr>
<tr>
<td><strong>Syphilis status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>96.9 (251)</td>
<td>97.6 (120)</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>3.1 (8)</td>
<td>2.4 (2)</td>
<td>0.7</td>
</tr>
<tr>
<td><strong>Non-specific urethritis, (n = 95)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>47.7 (54)</td>
<td>19.4 (17)</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>4.3 (8/72)</td>
<td>0 (0/15)</td>
<td>0.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Socio demographic characteristics &amp; Laboratory confirmed infections, at screening</th>
<th>Participating women N = 139</th>
<th>Non-participating women N = 37</th>
<th>P - value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age, yrs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>28 (24–32)</td>
<td>28 (24–35)</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>Level of education</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median years in education (Q0I)</td>
<td>9 (6–12)</td>
<td>4 (0–7)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>68.4 (95)</td>
<td>51.4 (18)</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>31.6 (44)</td>
<td>48.6 (17)</td>
<td></td>
</tr>
<tr>
<td><strong>Employment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>39.6 (55)</td>
<td>45.9 (17)</td>
<td></td>
</tr>
<tr>
<td>Self</td>
<td>50.8 (79)</td>
<td>54.1 (20)</td>
<td></td>
</tr>
<tr>
<td>Formal</td>
<td>3.5 (5)</td>
<td>0</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Knowledge of HIV status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Don't know</td>
<td>33.0 (46)</td>
<td>54.1 (20)</td>
<td></td>
</tr>
<tr>
<td>Know positive</td>
<td>8.6 (12)</td>
<td>10.8 (4)</td>
<td></td>
</tr>
<tr>
<td>Know negative</td>
<td>58.3 (81)</td>
<td>35.1 (13)</td>
<td>0.04</td>
</tr>
<tr>
<td><strong>HIV-1 status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>76.5 (98)</td>
<td>62.2 (24)</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>23.5 (31)</td>
<td>37.8 (14)</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>Syphilis status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>97.8 (136)</td>
<td>86.5 (52)</td>
<td></td>
</tr>
</tbody>
</table>
for daily alcohol use, but poor agreement for being drunk daily. A lower proportion of women and men said in ACASI that they always used alcohol before sex (14.0% vs. 31.8%, p<0.001, for women; 14.2 vs. 40.0%, p<0.001, for men; data not shown).

IV drug use in the last three months was reported by six women in ACASI, but not at all in FIF-interview (4.4 vs. 0%, p = 0.03). Similarly, a higher proportion of men reported IV drug use in ACASI than FIF (10.8 vs. 2.3%, p<0.001). Both men and women reported having been raped (in the last three months) more often in ACASI compared to FIF (women: 6.6 vs. 4.4%, p = 0.4, men 8.9 vs. 3.9%, p = 0.007).

**Order of interview mode**

The order of interview mode for categorical variables was assessed for three risk behaviours that were significantly different between methods in women (i.e. received cash for sex, paid for sex, and IV drug use, table 3) and eight in men (i.e. sex partner gender, anal sex and role taking, received cash for sex, paid for sex, group sex, IV drug use and rape). Table 4.

Of 95 women who took ACASI first, 16 (16.8%) denied receiving cash for sex in ACASI, but 15 of these 16 women subsequently reported this activity in FIF-interview. Of the 44 women who took ACASI after FIF-interview, only 2 (4.5%) denied transactional sex in ACASI, while one of the two women had reported this during the preceding FIF-interview (16.8 vs. 4.5%, p = 0.04). An equal proportion of women admitted to having paid another person for sex independent of when ACASI was taken (48.8 vs. 49.3%, p = 0.9). No differences were found for IV drug use by order of interview mode in women (data not shown).

In men, the order of the interview method mattered only for sex partner gender in men who had self-identified as men who have sex with men (MSM) in the FIF-interview (91.5% of all men). Of 140 MSM (by FIF-standard) who took ACASI before the FIF-interview, 14 (10.0%) admitted to have sex with women only to the computer, while none said so in the FIF-interview that they did after ACASI. Of 91 MSM who took ACASI after the FIF-interview (all reported to be either homosexual, or bisexual to the counsellor), 2 (2.2%) changed their sex partner preference in ACASI, and reported sex with women only (10.0 vs.2.2%, p = 0.02).

**Discussion**

This is the first study comparing ACASI with FIF-interview in African high risk populations. We compared responders to an identical risk assessment questionnaire in 81% of the consecutively enrolled cohort participants (119 women, 259 men). Almost one out of five newly enrolled cohort participants (84 men and 37 women) were not able to take ACASI, mostly for lack of reading skills. Risk behaviour assessed in FIF-interview between non-ACASI and ACASI participants was not different in men, but women unable to use ACASI more frequently reported anal sex in the previous 3 months, and a higher number of recent casual partners.

The majority of women and men felt that answers given in ACASI were more honest. Over 90% of women and men were comfortable with ACASI, and, although ACASI was on average twice as long as FIF-interviews, the majority of the volunteers had no objection to the longer interview time. Noteworthy is a recent assessment in ACASI of interventional provision of misinformation in FIF-interview by female microbicide trial participants in South Africa. Almost 99% had done this at least once, for reasons including politeness, to avoid criticism or seek praise, and embarrassment [17].

We explored responses to an identical questionnaire offered in ACASI and in FIF-interview and assessed the impact of the order of the interview mode. Among participants who took both

---

**Table 1. cont.**

<table>
<thead>
<tr>
<th>Socio demographic characteristics &amp; Laboratory confirmed infections, at screening</th>
<th>Participating women N = 139</th>
<th>Non-participating women N = 37</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% (n) or median</td>
<td>% (n) or median</td>
</tr>
<tr>
<td>Positive</td>
<td>2.2 (3)</td>
<td>13.5 (15)</td>
</tr>
<tr>
<td>Non-specific cervuittis, (n = 140)</td>
<td>18.6 (21/113)</td>
<td>26.7 (6/30)</td>
</tr>
<tr>
<td>Non-specific proctitis, (n = 19)</td>
<td>8.3 (1/12)</td>
<td>0 (0/7)</td>
</tr>
</tbody>
</table>

**Table 2. Acceptability of Audio-Computer-Assisted Self-Interview (ACASI) of 139 women and 259 men, at cohort enrolment, Kenya, 2008.**

<table>
<thead>
<tr>
<th>Acceptability of ACASI</th>
<th>Women N = 139</th>
<th>Men N = 259</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% (n) or median</td>
<td>% (n) or median</td>
</tr>
<tr>
<td>Computer use prior to ACASI</td>
<td>60.7 (80)</td>
<td>68.2 (134)</td>
</tr>
<tr>
<td>Yes</td>
<td>31.3 (39)</td>
<td>10.8 (14)</td>
</tr>
<tr>
<td>Understanding of questions</td>
<td>94.2 (113)</td>
<td>91.6 (226)</td>
</tr>
<tr>
<td>Easy</td>
<td>95.8 (114)</td>
<td>92.2 (213)</td>
</tr>
<tr>
<td>Self perception while answering questions</td>
<td>3.8 (4)</td>
<td>6.6 (16)</td>
</tr>
<tr>
<td>Not so comfortable</td>
<td>0.8 (1)</td>
<td>1.2 (3)</td>
</tr>
<tr>
<td>Comfortable</td>
<td>75.2 (95)</td>
<td>66.7 (175)</td>
</tr>
<tr>
<td>More honest</td>
<td>11.7 (14)</td>
<td>16.0 (39)</td>
</tr>
<tr>
<td>Less honest</td>
<td>9.2 (11)</td>
<td>14.3 (35)</td>
</tr>
<tr>
<td>Duration of ACASI/1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Just right</td>
<td>67.1 (80)</td>
<td>52.3 (148)</td>
</tr>
<tr>
<td>Too short</td>
<td>11.9 (16)</td>
<td>17.5 (44)</td>
</tr>
<tr>
<td>Too long</td>
<td>20.9 (26)</td>
<td>20.2 (54)</td>
</tr>
<tr>
<td>Duration ACASI (min)</td>
<td>35.7</td>
<td>31.2</td>
</tr>
<tr>
<td>Duration FIF-interview (min)</td>
<td>18.9</td>
<td>15.9</td>
</tr>
</tbody>
</table>

1Missing values in acceptability questions during start up period (March–April 2006, 23 women and 19 men).

doi:10.1371/journal.pone.0005340.t002
interview methods, ACASI and FtF-interview had excellent agreement for less sensitive behaviours in both men and women, as demonstrated by reports on daily cigarette or marijuana use. Group sex, IDU, (in men), and rape (in men) were significantly more frequently reported in ACASI. A similar trend towards higher responses in ACASI for group sex and rape was seen in women. Thus, ACASI led to more frequent reporting of sensitive behaviours that were not linked to recruitment criteria.

In contrast, potentially stigmatising behaviours that were also recruitment criteria were reported less frequently in ACASI compared to FtF-interviews. Transactional sex in the 3 months prior to cohort enrolment in men and women were less likely to be reported in ACASI. Moreover, 38 (14.7%) of men who reported anal sex in FtF-interviews did not report anal sex in ACASI, and MSM who took ACASI before FtF-interview were more likely to deny same sex behaviour than men who took ACASI after FtF-interview.

As African research sites often located in settings underserved by formal health care [11], and prospective trial populations may misrepresent or over-report behaviours to ensure access to health care benefits through participation in research programmes, it seems probable that there is some misclassification at cohort enrolment for both MSM and transactional sex work in our cohort. Our study evaluating the effect of the order of interview mode on highly stigmatised and sensitive behaviours among 396 high-risk volunteers (most of whom identified as MSM) offers the rationale that ACASI may be a useful tool in programme implementation to elicit more accurate data.
ACASI in sex workers in coastal Kenya

### Table 3. Comparison of characteristics in 139 women in Audio Computer-Assisted Self-Interview (ACASI) and Face-to-Face (FtF) interview, at cohort enrolment, Kenya, 2008.

<table>
<thead>
<tr>
<th>Sexual-risk behaviour characteristics, and substance use, in women</th>
<th>ACASI N = 139</th>
<th>FtF N = 139</th>
<th>P</th>
<th>Agreement(^1) (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex partners in past week(^2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular partner (median, IQR)</td>
<td>2 (1–3)</td>
<td>1 (0–1)</td>
<td>-0.001</td>
<td>0.22 (0.04–0.38)</td>
</tr>
<tr>
<td>Casual partner (median, IQR)</td>
<td>3 (1–5)</td>
<td>2 (1–4)</td>
<td>0.04</td>
<td>0.78 (0.69–0.85)</td>
</tr>
<tr>
<td>New partner (median, IQR)</td>
<td>2 (1–4)</td>
<td>1 (0–3)</td>
<td>-0.001</td>
<td>0.68 (0.57–0.77)</td>
</tr>
<tr>
<td>Sex partners in past month(^3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular partner (median, IQR)</td>
<td>2 (1–5)</td>
<td>1 (0–1)</td>
<td>0.21</td>
<td>0.30 (0.16–0.44)</td>
</tr>
<tr>
<td>Casual partner (median, IQR)</td>
<td>2 (1–7)</td>
<td>1 (0–4)</td>
<td>1.0</td>
<td>0.78 (0.51–0.91)</td>
</tr>
<tr>
<td>New partner (median, IQR)</td>
<td>2 (3–4)</td>
<td>1 (0–2)</td>
<td>1.0</td>
<td>0.36 (0.15–0.57)</td>
</tr>
<tr>
<td>Condom use, always</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With regular partner, past week</td>
<td>46.0 (64)</td>
<td>48.2 (67)</td>
<td>0.75</td>
<td>0.44 (0.29–0.59)</td>
</tr>
<tr>
<td>With casual partner, past week</td>
<td>55.6 (35)</td>
<td>57.6 (37)</td>
<td>0.23</td>
<td>0.40 (0.24–0.56)</td>
</tr>
<tr>
<td>With anal sex, previous 3 months</td>
<td>18.5 (10)</td>
<td>24.6 (15)</td>
<td>0.18</td>
<td>0.58 (0.36–0.86)</td>
</tr>
<tr>
<td>Partner type(^4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men only</td>
<td>92.7 (101)</td>
<td>92.7 (101)</td>
<td>0.69</td>
<td>0.72 (0.57–0.87)</td>
</tr>
<tr>
<td>Men and women</td>
<td>8.3 (9)</td>
<td>7.3 (8)</td>
<td>1.0</td>
<td>0.69 (0.58–0.77)</td>
</tr>
<tr>
<td>Women only</td>
<td>0.9 (1)</td>
<td>-</td>
<td>1.0</td>
<td>0.69 (0.58–0.77)</td>
</tr>
<tr>
<td>Anal sex, in past 3 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>56.4 (84)</td>
<td>56.1 (78)</td>
<td>0.75</td>
<td>0.36 (0.29–0.44)</td>
</tr>
<tr>
<td>Yes</td>
<td>39.6 (55)</td>
<td>43.9 (61)</td>
<td>0.15</td>
<td>0.82 (0.72–0.92)</td>
</tr>
<tr>
<td>Received cash for sex, in past 3 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>12.9 (18)</td>
<td>4.3 (6)</td>
<td>0.01</td>
<td>0.11 (0.09–0.33)</td>
</tr>
<tr>
<td>Yes</td>
<td>87.1 (121)</td>
<td>95.7 (133)</td>
<td>0.01</td>
<td>0.11 (0.09–0.33)</td>
</tr>
<tr>
<td>Paid for sex, in past 3 months(^5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>50.7 (76)</td>
<td>94.3 (131)</td>
<td>-0.001</td>
<td>0.03 (0.05–0.11)</td>
</tr>
<tr>
<td>Yes</td>
<td>49.3 (73)</td>
<td>5.8 (8)</td>
<td>-0.001</td>
<td>0.03 (0.05–0.11)</td>
</tr>
<tr>
<td>Group sex, in past 3 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>77.0 (107)</td>
<td>81.3 (113)</td>
<td>0.26</td>
<td>0.57 (0.39–0.75)</td>
</tr>
<tr>
<td>Yes</td>
<td>23.0 (32)</td>
<td>18.7 (26)</td>
<td>0.26</td>
<td>0.57 (0.39–0.75)</td>
</tr>
<tr>
<td>Substance misuse, in last month, daily</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cigarettes</td>
<td>19.6 (27)</td>
<td>20.3 (28)</td>
<td>1.0</td>
<td>0.81 (0.71–0.92)</td>
</tr>
<tr>
<td>Marijuana</td>
<td>12.3 (17)</td>
<td>13.0 (18)</td>
<td>1.0</td>
<td>0.83 (0.72–0.94)</td>
</tr>
<tr>
<td>Any alcoholic drink</td>
<td>28.8 (37)</td>
<td>27.1 (32)</td>
<td>0.1</td>
<td>0.70 (0.57–0.83)</td>
</tr>
<tr>
<td>Drugs (daily)</td>
<td>35.2 (47)</td>
<td>34.3 (46)</td>
<td>1.0</td>
<td>0.37 (0.29–0.44)</td>
</tr>
<tr>
<td>Used IV drugs in past 3 months(^6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>95.7 (132)</td>
<td>100 (139)</td>
<td>0.03</td>
<td>0.00 (0.0–1.0)</td>
</tr>
<tr>
<td>Yes</td>
<td>4.3 (6)</td>
<td>0 (0)</td>
<td>0.03</td>
<td>0.00 (0.0–1.0)</td>
</tr>
<tr>
<td>Violence, been raped in past 3 months(^7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>93.5 (129)</td>
<td>95.4 (132)</td>
<td>0.4</td>
<td>0.65 (0.36–0.95)</td>
</tr>
<tr>
<td>Yes</td>
<td>6.5 (9)</td>
<td>4.6 (6)</td>
<td>0.4</td>
<td>0.65 (0.36–0.95)</td>
</tr>
</tbody>
</table>

\(^1\) Kappa or Pearson statistic
\(^2\) IQR inter quartile range
\(^3\) Pearson or kappa statistic
\(^4\) Includes those active in past week. 128 women in ACASI, 125 women in FtF.
\(^5\) Includes those not active in past week. 13 women in ACASI, 14 in FtF.
\(^6\) Variable missing for 30 women who completed the study before this question added.
\(^7\) Missing values in 1 woman.

Note: 10.1371/journal.pone.0001540.c003

whom were sex workers), suggested that ACASI is better conducted prior to FtF-assessment. Failure to disclose risk, or the reverse (i.e. overestimating risk, as we suspect was the case in our study) would have significant implications for participant selection and behaviour tracking during intervention trials [17,19].
Table 4. Comparison of characteristics in 259 men in Audio Computer-Assisted Self-Interview (ACASI) and Face-to-Face (FtF) interview, at cohort enrolment, Kenya, 2008.

<table>
<thead>
<tr>
<th>Sexual behaviour Characteristics, and substance use, in men</th>
<th>ACASI N = 259</th>
<th>FtF N = 259</th>
<th>P</th>
<th>Agreement 1 (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% (n) or Median IQR</td>
<td>% (n) or median IQR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex in past week 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular partner (median, IQR)</td>
<td>2 (1–3)</td>
<td>1 (0–1)</td>
<td>-0.001</td>
<td>0.23 (0.08–0.36)</td>
</tr>
<tr>
<td>Causal partner (median, IQR)</td>
<td>2 (1–3)</td>
<td>1 (0–3)</td>
<td>-0.001</td>
<td>0.61 (0.51–0.69)</td>
</tr>
<tr>
<td>New partner (median, IQR)</td>
<td>1 (1–3)</td>
<td>1 (0–2)</td>
<td>-0.001</td>
<td>0.56 (0.45–0.65)</td>
</tr>
<tr>
<td>Sex in past month 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular partner (median, IQR)</td>
<td>2 (1–3)</td>
<td>1 (0–1)</td>
<td>0.02</td>
<td>0.31 (0.15–0.47)</td>
</tr>
<tr>
<td>Causal partner (median, IQR)</td>
<td>1 (1–3)</td>
<td>1 (0–3)</td>
<td>0.55</td>
<td>0.41 (0.34–0.48)</td>
</tr>
<tr>
<td>New partner (median, IQR)</td>
<td>1 (0–3)</td>
<td>0 (0–2)</td>
<td>1.0</td>
<td>0.32 (0.28–0.37)</td>
</tr>
<tr>
<td>Condom use, always</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with regular partner, past month</td>
<td>37.7 (69)</td>
<td>21.8 (28)</td>
<td>0.006</td>
<td>0.34 (0.17–0.51)</td>
</tr>
<tr>
<td>with casual partner, past week</td>
<td>41.3 (57)</td>
<td>35.5 (49)</td>
<td>0.49</td>
<td>0.39 (0.33–0.45)</td>
</tr>
<tr>
<td>with anal sex (previous 3 months)</td>
<td>15.4 (28)</td>
<td>19.3 (45)</td>
<td>0.1</td>
<td>0.67 (0.52–0.74)</td>
</tr>
<tr>
<td>Partner type 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men only</td>
<td>50.1 (71)</td>
<td>32.2 (70)</td>
<td>0.49</td>
<td></td>
</tr>
<tr>
<td>Men and women</td>
<td>61.0 (144)</td>
<td>46.7 (155)</td>
<td>0.14</td>
<td></td>
</tr>
<tr>
<td>Women only</td>
<td>8.9 (21)</td>
<td>2.1 (3)</td>
<td>-0.001</td>
<td>0.60 (0.59–0.69)</td>
</tr>
<tr>
<td>Anal sex in past 3 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>22.0 (57)</td>
<td>7.3 (19)</td>
<td>-0.001</td>
<td>0.41 (0.32–0.50)</td>
</tr>
<tr>
<td>Yes</td>
<td>78.0 (202)</td>
<td>92.7 (240)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participation in anal sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any insertive</td>
<td>63.3 (164)</td>
<td>72.6 (188)</td>
<td>-0.001</td>
<td>0.56 (0.48–0.64)</td>
</tr>
<tr>
<td>Any receptive</td>
<td>44.8 (116)</td>
<td>57.5 (148)</td>
<td>-0.001</td>
<td>0.64 (0.55–0.73)</td>
</tr>
<tr>
<td>Both insertive and receptive</td>
<td>29.7 (77)</td>
<td>37.5 (97)</td>
<td>0.006</td>
<td>0.59 (0.49–0.69)</td>
</tr>
<tr>
<td>Received cash for sex, in past 3 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>59.9 (92)</td>
<td>28.6 (74)</td>
<td>0.006</td>
<td>0.65 (0.55–0.75)</td>
</tr>
<tr>
<td>Yes</td>
<td>40.1 (67)</td>
<td>71.4 (186)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paid for sex, in past 3 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>54.8 (142)</td>
<td>65.6 (157)</td>
<td>0.09</td>
<td>0.46 (0.35–0.57)</td>
</tr>
<tr>
<td>Yes</td>
<td>45.2 (117)</td>
<td>34.4 (102)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group sex, in past 3 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>78.4 (203)</td>
<td>86.5 (224)</td>
<td>-0.001</td>
<td>0.54 (0.41–0.67)</td>
</tr>
<tr>
<td>Yes</td>
<td>21.6 (56)</td>
<td>13.5 (35)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substance misuse, in last month, daily use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cigarettes</td>
<td>50.2 (130)</td>
<td>50.2 (130)</td>
<td>1.0</td>
<td>0.75 (0.73–0.78)</td>
</tr>
<tr>
<td>Marijuana</td>
<td>21.3 (60)</td>
<td>22.4 (56)</td>
<td>0.8</td>
<td>0.74 (0.69–0.79)</td>
</tr>
<tr>
<td>Any alcohol use</td>
<td>12.4 (32)</td>
<td>11.6 (26)</td>
<td>0.8</td>
<td>0.67 (0.53–0.81)</td>
</tr>
<tr>
<td>Drunk (daily)</td>
<td>16.8 (46)</td>
<td>15.5 (34)</td>
<td>0.8</td>
<td>0.39 (0.33–0.46)</td>
</tr>
<tr>
<td>Used IV drugs in past 3 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>89.2 (231)</td>
<td>97.7 (253)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>10.8 (28)</td>
<td>2.3 (6)</td>
<td>-0.001</td>
<td>0.33 (0.13–0.55)</td>
</tr>
<tr>
<td>Violence, been raped in past 3 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>91.1 (236)</td>
<td>96.1 (249)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>8.9 (23)</td>
<td>3.9 (10)</td>
<td>0.002</td>
<td>0.46 (0.24–0.67)</td>
</tr>
</tbody>
</table>

1 Spearman correlation coefficient or kappa statistic.
2 Included those active in past week ≥ 108 mm in ACASI, ≥ 36 mm in FtF.
3 Included those not active in past week ≥ 1 mm in ACASI, ≥ 3 mm in FtF.
4 Variable not asked in 25 subjects in ACASI.
5 doi:10.1371/journal.pone.0033460.t004
ACASI in sex workers in coastal Kenya

That almost half of the women admitted to having paid for sex in ACASI was a surprise, and initially doubted. A focus group discussion conducted in 2001 with 15 women who admitted to payment for sex in AGASI suggested that this behaviour was indeed common, and gave some women a sense of control over the sexual risk behaviour study conducted among 81 male sex workers recruited from the same cohort population, revealed that 68% of 238 female partners had paid for sex [20]. The finding that FSW purchase sex themselves has not been previously reported to our knowledge.

The crux to establishing high risk cohorts for HIV-1 prevention studies is a reliable and accurate assessment of volunteers’ risk behaviour, that is sensitive to marginalised and stigmatised behaviours, and is conducive to truthful reporting. Surprisingly, ACASI has not been thoroughly evaluated among sex workers. The few ACASI comparison studies in Africa involved adolescents or general population, and firm conclusions of its usage have not been drawn, either because sample sizes were too small, or study findings were contradicting expectations [10,11,13]. A randomized crossover study of ACASI and computer-assisted personal interview (CAPI) in 445 adult volunteers from China, India, Peru, Russia, and Zimbabwe, found few differences in responses between methods, except for China, where volunteers gave a significantly higher response to some sensitive questions (i.e. ever had sex, number of partners, and unprotected acts in CAPI [11]. Similar to our study, ACASI took twice as long on average in 4 of the 5 countries, and volunteers preferred a computer to an interviewer for answering sensitive questions [11]. ACASI’s longer duration to complete suggest that volunteers take more time to consider their responses, which makes more honest reporting probable. ACASI enabled women, more than men, to report a higher median number of regular and casual sex partners.

Why thus is ACASI not more widely used in research settings in Africa? While starting up projects, systems capacity may pose some challenges, trial sites are often able to access financial and technical support from internal and external sources. That ACASI is merely used experimentally and is not more established in African settings is partly due to unfamiliarity with the interview method, but more likely based on mixed and sometimes contradicting findings. Indeed, in a recent prospective, randomised, cross-over design of 655 women enrolled in a study on hormonal contraceptive use with ACASI and FFI-interview in Zimbabwe, ACASI yielded higher reports on several reproductive health behaviours but discrepancies between self-reports and clinical data highlighted persistent measurement challenges [21]. Múnner et al. suggest that epidemiological studies should use multiple data sources, where possible, to estimate the range and direction of potential bias, and minimize miscategorization [22].

We agree that multiply data sources should be used, and prefer ACASI as a screening tool to help identify high risk populations as it elicits sensitive behaviours (i.e. IDU and rape) that would otherwise go unreported. We also believe that ACASI provides an environment more conducive to truthful reporting, that may help prospective volunteers avoid overstating their risk (e.g. anal sex, transactional sex).

ACASI has a number of other benefits over FFI-interview, including consistency and standardisation of data collection, and elimination of the need for further data transcription. Admittedly, comparing ACASI- or FFI-interview, to sexual diary studies kept over a corresponding recall period would have provided a better opportunity to assess accuracy and reliability [22]. Our study also was not designed to test for non-differential error in ACASI and did not use biomarkers as some others have done [23], but analysis is ongoing of data collected for a 5-way comparison between ACASI, FFI-interview, and sex partner diaries prospectively kept by 19 MSM cohort participants. A formal evaluation of ACASI as a screening tool to determine eligibility in settings as ours is justified, as planned intervention studies will include Pre-Exposure Prophylaxis that may be especially appealing to prospective volunteers to overtake their sexual risk behaviour and ensure enrolment.

This study has a number of additional limitations. First, our study was not able to distinguish between those who used peer mobilization prior to cohort enrolment may have encouraged prospective volunteers to over-report ‘high risk’ behaviour in FFI-interview. Secondly, the questionnaire had intrinsic weaknesses such as the assumption that regular and casual partners are clearly distinguishable. It also seems reasonable to assume that some questions were explained by counsellors differently during FFI-interview than in ACASI, and that participant had the opportunity to clarify uncertainties, but we have no documentation of this.

Third, the FFI-interviews were performed by a number of different counsellors, and we were not able to gender-match counsellors to clients. It may be that some volunteers were less comfortable with counsellors of the opposite gender or with the interview style of a specific counsellor. Fourth, the study excluded volunteers who were not able to read and may have had higher sexual risk, given that more sexually transmitted infections were diagnosed in these volunteers. A more user friendly version of ACASI could have facilitated use irrespective of education level.

Despite these limitations, we feel that ACASI could have an important role in risk behaviour assessments among high-risk populations in Africa. The majority of women (79.2%) and men (69.7%) felt that answers given in ACASI were more honest. Over 98% of women and men were comfortable with ACASI, and, although ACASI was on average twice as long as FFI-interview, the majority (80%) of the volunteers had no objection to the longer interview time. ACASI revealed some misclassification of same-sex behaviour, and an over-report of anal sex at cohort enrolment. Lastly, ACASI elicited reports of risk behaviours in the same range as FFI-interview, and helped us to capture behaviours hitherto not recognised in our cohort populations. These behaviours were IDU in men and women, rape and group sex in men, and payment for sex by women. Such risk behaviours need specific risk reduction counselling and further investigation.

Materials and Methods

Recruitment of study population

Since July 2005, populations in and around Mombasa at higher risk for HIV infection, including men and women who admitted to transactional sex in the past 3 months, have been targeted for an HIV-1 prevention cohort. Identification and recruitment of prospective study participants has been described elsewhere [16]. In short, peer educators identified volunteers and accompanied them to a Drop-in Centre adjacent to the research clinic. Prospective cohort participants were shown a 25-minute video describing cohort procedures, including a short demonstration of ACASI. Cohort eligibility was assessed by a pre-enrolment counsellor who discussed sexual and other risk behaviour. Cohort inclusion criteria were verified by an enrolment counsellor and were either a self-report of use in ACASI sex and sex in the past three months, or same sex behaviour for men. Upon cohort enrolment, participants committed to an HIV-1 test, a risk
assessment by standardized FtF-interview, and a medical examination with screening for sexually transmitted infections (STI). Details on cohort procedures, including case definitions used for HIV-1 and STI diagnosis, are described elsewhere [16,25]. Participants who tested HIV-1 positive at screening were offered follow-up counseling by FtF-interview or vice versa, in periods of approximately 6 months during the study period. All ACASI and FtF-interviews were conducted before voluntary testing and counselling for HIV-1.

Eligibility for ACASI and allocation to interview mode

Newly enrolled cohort participants in the period March 2006–May 2008, who had been trained, were invited to undergo both interview methods (ACASI and FtF-interviews) on the same day. For ease of clinic organization, participants were either allocated to an ACASI interview or FtF interview, or vice versa, in periods of approximately 6 months during the study period. All ACASI and FtF-interviews were conducted before voluntary testing and counselling for HIV-1.

Risk assessment

We developed an ACASI questionnaire with identical questions to the structured questionnaire used for the FtF-interview. Ordered questions appeared in text on the computer screen, accompanied by a spoken recording in either English or Swahili. Automatic text and voice prompts included standard definitions of terms (e.g. a new sex partner is someone you have only known for one week or less). The questionnaire included questions on number of regular, casual, and new partners in the last week and month, anal sex (practice, role and condom use), gender of their sexual partners (from Sept 2006), transactional sex, substance misuse, and sexual behaviour. ACASI study participants were accompanied to a small computer room and instructed in the working of ACASI using socio-demographic questions. Upon completion of these, ACASI was operated alone and in privacy to answer risk assessment questions in either English or Kiswahili. The ACASI programme included built-in skip patterns, and logic checks. Upon completion of each ACASI interview, six acceptability questions were asked in ACASI only.

Risk assessment in FtF-interview was conducted after socio-demographic questions were completed. Counsellors had been trained on asking risk questions and providing explanations to certain questions during the start of the cohort (July 2005), and were familiar with the questionnaire as it was also used for follow up visits.

Data management and analysis

Questionnaire data was entered and stored in a secure database. Quality of data recorded was scrutinised by external data monitors, twice a month. Prior to data analysis, all site database entries were individually compared to source documents. Data cleaning, coding and analysis were conducted using Stata 9.2 [26].

The Chi-squared test and Student t-test were used to determine associations between categorical and continuous variables, respectively. Differences in paired ACASI and FtF-interviews were compared using the McNemar’s chi square test for binary data, and the Wilcoxon matched-pairs signed-rank test for paired Student t-test for continuous variables as appropriate [27]. Inter-method agreement was assessed by calculation of the Cohen’s kappa statistic for binary and categorical variables, and Spearman’s correlation coefficient for continuous variables. For categorical variables that had significant differences between interview methods the effect of interview order was assessed using simple test of proportions. For continuous responses Bland Altman plots were used to inspect for differences in variability between methods and the effect of the order of interview methods [28].

Acknowledgments

We wish to thank counsellors and clinic staff who facilitated the implementation of the study. Gregory Fegan, at KEHRI, and David Mark, at LAVI, for inspiring discussions about the use of technology for HIV-1 risk reduction in high risk populations in Kenya. Tony Karanja for developing an earlier version of ACASI. Sandy Molyneux and Norbert Pena for continued support during protocol development and implementation. Helen Thomson and Sarah Yare, at LAVI, for conducting LAVI-protocol’s external database monitoring. This paper was published with the permission of the Director of KEHRI.

Author Contributions

Conceived and designed the experiments: EMvdE HSO. Performed the experiments: EMvdE HSO EJS. Analyzed the data: EMvdE RSM ADS SMG EJS. Contributed reagents/materials/analysis tools: AM AD RSM EJS. Performed the experiments: MAP SMG. Wrote the paper: EMvdE PN RSM ADS SMG EJS.
ACASI in sex workers in coastal Kenya


Chapter 4

MSM Sensitivity Training Reduces Homoprejudice and Increases Knowledge among Kenyan Health Care Providers in Coastal Kenya

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ABSTRACT

Introduction: Healthcare workers (HCWs) in Africa typically receive little or no training in the healthcare needs of men who have sex with men (MSM), limiting the effectiveness and reach of population-based HIV control measures among this group. We assessed the effect of a web-based, self-directed sensitivity training on MSM for HCWs (www.marps-africa.org), combined with facilitated group discussions on knowledge and homophobic attitudes among HCWs in four districts of coastal Kenya.

Methods: We trained four district “AIDS coordinators” to provide a two-day training to local HCWs working at antiretroviral therapy-providing facilities in coastal Kenya. Self-directed learning supported by group discussions focused on MSM sexual risk practices, HIV prevention and healthcare needs. Knowledge was assessed prior to training, immediately after training and three months after training. The Homophobia Scale assessed homophobic attitudes and was measured before and three months after training.

Results: Seventy-four HCWs (68% female; 74% clinical officers or nurses; 84% working in government facilities) from 49 health facilities were trained, of whom 71 (96%) completed all measures. At baseline, few HCWs reported any prior training on MSM anal sexual practices, and most HCWs had limited knowledge of MSM sexual health needs. Homophobic attitudes were most pronounced among HCWs who were male, under 30 years of age, and working in clinical roles or government facilities. Three months after training, more HCWs had adequate knowledge compared to baseline (49% vs. 13%, McNemar’s test p < 0.001); this was most pronounced in those with clinical or administrative roles and in those from governmental health providers.

Compared to baseline, homophobic attitudes had decreased significantly three months after training, particularly among HCWs with high homophobia scores at baseline, and there was some evidence of correlation between improvements in knowledge and reduction in homophobic sentiment.

Conclusions: Scaling up MSM sensitivity training for African HCWs is likely to be a timely, effective and practical means to improve relevant sexual health knowledge and reduce personal homophobic sentiment among HCWs involved in HIV prevention, testing and care in sub-Saharan Africa.

Keywords: sensitivity training; MSM behaviour; Homophobia Scale; homophobia; healthcare workers; Kenya.

Introduction

Sub-Saharan Africa has a very high burden of HIV-1 infection, of which a substantial proportion occurs among populations reporting high-risk sexual behaviour such as transactional sex and anal intercourse [1]. Such populations suffer from stigma and rejection, and they have been neglected by many HIV prevention and care programmes [2]. As a result, most African healthcare workers (HCWs) have not been informed about the risk of HIV transmission with regard to heterosexual or homosexual anal sex. In addition, African HCWs may lack understanding of the many challenges that men who have sex with men (MSM) and other key populations face in healthcare facilities [3].

Societal discrimination on the grounds of sexual orientation has been reported frequently among African MSM, taking the form of sexual, physical and verbal assault [4–7], and a number of studies have demonstrated an association between reported experience of discrimination and HIV risk or risk behaviour [8]. Similarly, high levels of internalized homophobia among MSM have been reported in Nigeria [8], South Africa [9,10] and Uganda [11], known to be associated with individual HIV risk-taking behaviour [12]. Overt stigmatization specifically from HCWs in the context of HIV testing and care, such as denial of service [4,8,13] and harassment in clinic spaces [14], has been reported as a key element of perceived discrimination, presenting a
deterrent to service access [15] or accurate disclosure of behavioural risk [14]. In the absence of resources targeted to groups at high risk of HIV infection, the marginalization of MSM from public HIV prevention and treatment responses can only hamper the effectiveness of national HIV control efforts [6].

Health worker training, social mobilization and community engagement were prioritized as structural interventions in a recent consultation on priority areas for MSM HIV prevention research involving 69 participants from 17 African countries [16]. HCWs have also been called to action to reduce stigma and discrimination, provide integrated services for mental health concerns and substance use, screen MSM routinely for HIV and sexually transmitted infections (STIs) and ensure training for all personnel in clinical settings [3]. As yet, African HCWs lack any evidence-based, culturally adapted training model that is sensitive to MSM needs. This problem likely stems from cultural taboos about anal sex practices, even in opposite-sex couples [17], and strong political, religious and public prejudice against same-sex practices [18]. Since 2005, biomedical research has been ongoing with both HIV-1 negative MSM and MSM living with HIV in coastal Kenya [1,19]. To date, the only incidence data for African MSM derive from our cohort and a related cohort in Nairobi [19,20]. Overall HIV-1 incidence among young MSM in coastal Kenya was as high as 8.6 (95% confidence interval [CI]: 6.7–11.0) per 100 person-years of observation [19]. The majority of these MSM reported sex work, and large numbers of such men have been identified in coastal Kenya [21]. Similarly, a cohort study of MSM living with HIV showed that 40% had less than 95% antiretroviral therapy (ART) adherence, compared to 29% of heterosexual men and 12% of women who were followed in the same research setting [1]. These findings prompted us to brief health authorities and develop materials to help improve care for MSM in Kenya and elsewhere in Africa.

Internet-based learning (e-learning) as a cognitive tool has increasingly been used in health professions in resource-constrained low and middle-income countries [22]. E-learning technologies offer learners control over content, learning sequence, pace of learning, time and often media, allowing learners to tailor their experiences to meet their personal learning objectives [23]. The internet-based HCW MSM sensitivity training described here represents our attempt to deploy meaningful, clinically relevant material to meet this specific learning need within Kenyan HIV services through adaptation of an existing training curriculum to a web environment.

“MSM: An introductory guide for health workers in Africa” is a paper-based HCW sensitization training first developed in 2010. The content of training was validated and revised through a programme of extensive classroom use in South Africa, and following expert review [24]. The paper-based training guide was electronically converted to a self-directed electronic format and published online in July 2011, a version of which was adapted for use in this study.

The objectives of this study were (1) to assess the feasibility of facilitated self-directed learning of MSM health issues in coastal Kenya and (2) to evaluate the effect of the training intervention upon HCW knowledge and attitudes.

**Methods**

**Study site and participants**

Seventy-four HCWs involved in HIV prevention, treatment and care services in coastal Kenya were recruited to participate in the study. We mapped 54 ART-providing governmental and nongovernmental health providers in four districts in coastal Kenya (Kilindini, Mombasa, Kilifi and Malindi). An average of two staff representatives from each health-providing facility were invited to the training intervention, including clinicians and counsellors as well as clinic administrators.

Four “district AIDS/STD coordinators” (DASCs) working within the study districts were trained to lead the MSM sensitization training during a 2-day “training-of-trainers” course similar to the training proper. An additional day was used to prepare focus-group topic guides and organizational matters. The study procedures were approved by the ethical review board at the Kenya Medical Research Institute, and all participants provided written informed consent for impact evaluation. HCWs received Ksh2000 (approximately US$24.00) to cover travel expenses and lodging.

**The training intervention**

The training consisted of two consecutive days and included eight modules which were taken in four sessions (i.e., two computer modules per session). Each session was followed by a group discussion. Each group size comprised 18–19 participants. DASCs were supported by four members of the research team (i.e., a community liaison officer, a research counsellor, an MSM staff-fieldworker and a social scientist) and two members of a local LGBTI (lesbian, gay, bisexual, transgender and intersex) organization. HCWs were introduced to the sensitivity training on MSM health issues and learned that the training consisted of computer-assisted learning (http://www.marps-africa.org) and group discussions. The curriculum consisted of the following modules of study: (1) MSM and HIV in sub-Saharan Africa; (2) Stigma; (3) Identity, coming out and disclosure; (4) Anal sex and common sexual practices; (5) HIV and sexually transmitted infections; (6) Mental health, anxiety, depression and substance abuse; (7) Condom and lubricant use; and (8) Risk reduction counselling. Modules were designed to be self-completed in 1–2 hours each, including multiple-choice questions (median 32, range 9–16) at the end of each module. A score of 71% correct was required to advance to the next module, and upon successful completion of all eight modules, participants were sent a link to download their course certificate. A post-course evaluation asked for opinions and suggestions for course improvements, using both closed and open-ended questions.

Discussion topics included the identification of subcategories of MSM and their characteristics, sexual practices of MSM and risks for HIV and STI transmission, factors that make MSM vulnerable to STIs and HIV, risk assessment in counseling MSM, best practice for sexual history taking and sexual health examination with MSM, relevant information on safer sex for MSM, personal values and attitudes towards MSM, and addressed stigma and strategies to improve communication with clients who are MSM. At the end of the training, HCWs discussed a work plan on how to strengthen clinical
care and uptake of HIV and STD testing for MSM in their day-
to-day practice. Study participants with a clinical role were
also requested to keep a journal for three months to
document and reflect upon their work practices and personal
attitudes towards MSM.

Data collection
Course participants completed an online registration, includ-
ing socio-demographic characteristics (age, gender and level
of education and training), details of working practice (role
within, type and location of healthcare organization) and
specific experience working with HIV prevention, treatment
and care with the most at-risk populations (MARPs) in Africa.
To assess baseline levels of knowledge, participants con-
ducted a pre-course 24-item multiple-choice assessment
covering key learning outcomes across the course material
and they completed a 25-item Homophobia Scale (HS; adapted
from Wright et al. [25]). The same two measures were
repeated three months after course completion to
assess sustained changes in knowledge of and attitudes
Towards MSM. Immediate post-course knowledge was as-
essed using the same pre-knowledge questionnaire upon
completion of the eight modules. The results of pre-training
and post-training assessments were not communicated to
participating HCWs.

Measurement scales
Knowledge scores of course material were divided into the
following categories: Poor (<17 questions correctly answered),
Good (17–22 questions correctly answered) and Excellent
(>22 questions correctly answered). When 17 or more ques-
tions were correctly answered, the immediate post-training
knowledge was considered adequate.

The HS, which was developed and standardized among
college students in the United States by Wright et al. [25],
was adapted for use in Kenya. The HS aims to measure
thoughts, feelings and behaviours towards homosexuality
and MSM, and it consists of 25 statements to which res-
pondents are asked to score from 1 (Strongly disagree) to
5 (Strongly agree). Scores range from 25 (most homophobic)
to 125 (most homo tolerant).

Data analysis
Analysis was conducted using Stata 11.0 (StataCorp LP,
College Station, TX, USA). Binary and categorical character-
istics of study participants, established at baseline, were
compared using chi-square tests. Although both knowledge
and HS scores before and after training approximated to
Gaussian distributions, differences between paired measures
were non-normal, and thus unadjusted nonparametric meth-
ods were used for analysis. Median differences between pre-
and post-training knowledge and homophobia score are
reported with an interquartile range (IQR). A Wilcoxon signed
rank test for matched pairs was applied to test the statistical
significance of differences between pre- and post-training
scores. Mann-Whitney and McNemar’s tests were used to
test differences in scores and binary measures, respec-
tively, by HCW characteristics. Spearman’s rank was used to
assess correlation between pre- and post-training scores, and
knowledge and HS scores at both points. Multivariate linear
regression models of pre- and post-training score outcomes
were explored, but they yielded no additional insight beyond
bivariate analysis.

Results
Seventy-four HCWs were recruited to participate in the
training programme, and their characteristics are shown in
Table 2. The majority were female, and the mean age of
participants was 32 years (range: 23 to 53). Sixty-two
participants (84%) worked at a government health facility
(hospital or clinic), seven (9%) worked at a local nongovern-
mental organization (NGO) and three (4%) represented faith-
based organizations. Most (74%) were in a clinical role (nurse
or clinical officer). Irrespective of job role, 8% had received
any previous training on how to counsel MSM clients, and
a similarly low proportion (7%) had ever received training
on how to counsel on anal sex practices. HCWs who had
received training on anal sex practices were more likely
to have ever asked their male patients if they had sex with men
than HCWs who did not report previous training (86% (6/7)
versus 31% (21/67), χ² p<0.01).

Training logistics
Most HCWs (73% (54/74)) required 1 hour or less to
come through each module, whilst 11% (8/74) required 2 hours
or more per module. While 68% (50/74) considered the
course duration to be “just right,” 23% (17/74) said that it
was too short, and 9% (7/74) that it was too long. Overall, by
the end of training, 60/74 (81%) HCWs reported feeling
empowered to discuss MSM behaviour and anal sex in their
professional work.

All participants said they would recommend the course to
others. Open-ended suggestions for course improvements
are presented in Table 3. Study participants recommended
that the training should be taken by all health stakeholders
dealing with MSM issues and be included in medical training.
There was an interest in similar training related to other key
populations (e.g., women who have sex with women and sex
workers).
Table 1. Homophobia Scale and MSM sensitivity training for healthcare workers (HCWs), coastal Kenya, 2011-2012

This questionnaire is designed to measure your thoughts, feelings and behaviours with regards to homosexuality. It is not a test, so there are no right or wrong answers. Answer each item by circling the number after each question.

<table>
<thead>
<tr>
<th></th>
<th>1 — Strongly agree</th>
<th>2 — Agree</th>
<th>3 — Neither agree nor disagree</th>
<th>4 — Disagree</th>
<th>5 — Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MSM make me nervous.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>MSM deserve what they get.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Homosexuality is acceptable to me.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>If I discovered a friend was an MSM, I would end the friendship.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I think homosexual people should not work with children.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I make derogatory remarks about MSM people.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I enjoy the company of MSM.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Marriage between homosexual individuals is acceptable.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I make derogatory remarks like &quot;shopa&quot; or &quot;queer&quot; to people who I suspect are MSM.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>It does not matter to me whether my friends are MSM or straight.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>It would upset me if I learned that a close friend was homosexual.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Homosexuality is immoral.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>I tease and make jokes about MSM.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>I feel that you cannot trust a person who is homosexual.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I fear homosexual persons will make sexual advances towards me.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Organizations which promote gay rights are not necessary.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Homosexuality should be treated as an illness/Homosexuality can be cured.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Homosexuality is un-African/Is something brought by foreigners.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>I would hit a homosexual for coming on to me.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Homosexual behaviour should not be against the law.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>I avoid MSM individuals.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>It bothers me to see two homosexual people together in public.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>When I see an MSM, I think, &quot;What a waste.&quot;</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>When I meet someone, I try to find out if he or she is MSM.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Gay men have the same rights to public/tax-funded services as straight men.</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Effect of training on MSM sexual health knowledge among healthcare workers

Table 4 shows knowledge of MSM sexual health issues among participants before the training course, and upon reassessment three months after the course. Prior to the training course, only 10/74 (14%) had an "adequate" level of knowledge of MSM issues (threshold score: 17/24), reflecting a median score of 54% (IQR 49–63%). Levels of knowledge were similar by socio-demographic and workplace characteristics of HCWs, although it was somewhat lower for HCWs in administrative roles compared to other roles (median 42 vs. 54, Mann–Whitney p = 0.293).

At the end of training, 70/74 (95%) HCWs had adequate course knowledge (exact McNemar’s χ² p < 0.001 vs. pre-training). At three months after the course, 35 (49%) of the 71 HCWs reassessed had retained “adequate” knowledge compared to 9/71 (13%) at pre-training (exact McNemar’s χ² p < 0.001). This represented a significant increase in the median assessment score of 12% (IQR 4–21%) between baseline and three-month knowledge assessments (Wilcoxon signed test for matched pairs p < 0.001). Significant sustained improvements in knowledge were apparent for all HCW age groups and genders, those with clinical or administrative roles and those from governmental health providers.

Pre-training and three-month post-training scores were negatively correlated (Spearman’s rho = −0.51, p < 0.001), indicating that improvements in knowledge tended to be highest among HCWs with lower pre-training knowledge. There were no significant differences in the degree of knowledge gain by the gender or age group of HCWs; however, participants in counselling roles achieved significantly lower gains in sustained knowledge than other HCWs (median difference: 0% vs. +13%, Mann–Whitney p = 0.0163).

Effect of training on personal attitudes toward MSM among healthcare workers

Table 5 shows HS scores among HCWs prior to training and at reassessment three months later. Overall, the median HS score prior to training was 68/100, representing extensive agreement with homophobic statements and disagreement...
with statements indicating tolerance of MSM (see Table 5). Male HCWs had slightly higher HS scores at baseline than female HCWs, while HS scores declined with increasing age group but differences were not statistically significant. HCWs in clinical roles (medical and nursing) had higher HS scores than other staff (median 71 vs. 66 respectively, Mann–Whitney p = 0.116), and HCWs working in government facilities had significantly higher HS scores than HCWs in NGOs (Table 5, Mann–Whitney p = 0.037).

The majority of HCWs reported lower HS scores three months post-training (80.3%, 57/71) compared to their baseline HS score; in four (5.6%), HS scores were unchanged; and in 14.1% (10/71), HS scores were higher after training than before. Overall, the median decrease in individual HS score after training was 8 points (IQR 2–15), which was statistically significant. These findings did not change in a sensitivity analysis omitting the three HS questions that were culturally adapted (data not shown). Individual pre-training and post-training HS scores were negatively correlated (Spearman’s r = —0.71, p < 0.001), reflecting the tendency for HCWs with high pre-training HS scores to exhibit greater decreases in this measure as a result of training (Figure 1).

Male HCWs and those working in clinical roles and in governmental institutions recorded the most pronounced reductions in HS score subsequent to training, although differences in median reduction comparing HCWs’ gender, age group, staff role and institution were not statistically significant. More modest declines in HS score were apparent for counsellors (median reduction after training: 4 points) and staff of NGOs (median reduction after training: 0 points); however, it is notable that these groups reported relatively low HS scores prior to training. Collectively, there was some evidence for correlation between scale of increase in individual knowledge and scale of decline in HS score, and this was of borderline statistical significance (Spearman’s r = —0.21, p = 0.087).

### Discussion

This formal evaluation of a training course aimed specifically to improve knowledge and awareness of MSM sexual health needs among healthcare staff involved in frontline HIV prevention, treatment and care to adult populations in sub-Saharan Africa. Specific and accurate knowledge relevant to the management of behavioural and clinical risks for MSM clients prior to training was poor.

Whilst this may not be surprising in the face of longstanding neglect of Kenyan MSM within HIV policy and resource allocation and a lack of attention to MSM within medical, nursing and HIV counselling training in Kenya, it draws focus to the challenge of maintaining and extending the professional competence of the existing HIV workforce to match the epidemiological realities of the Kenyan HIV epidemic – especially since the National AIDS & Sexually Transmitted Diseases Control Programme (NASCOP) requires Kenyan HCWs to document the number and category of MSM using HIV services.

Whilst targeted services may well be necessary for sub-populations of MSM, such as male sex workers, they are unlikely to replace the need for MSM-specific clinical care among general health services. MSM-specific programmes have aroused considerable social antipathy in Kenya to date [26] and may in any case not be perceived as accessible to men who covertly engage in homosexual behaviour [27]. Furthermore, surveillance of key populations, including MSM, and strategic information on service coverage to these groups are now an international requirement [28].

The combination of self-directed, modular computer-based learning supplemented by group discussions facilitated by trainers identified from within the existing workforce may offer a relatively sustainable and mobile model for episodic health professional training in this context. The learning content of this course is freely available as a web resource, yet reliable access to internet services remains elusive and expensive in most parts of the country. Even where it is
MSM sensitivity training for health care providers

Table 3. End-of-course suggestions for course improvements

<table>
<thead>
<tr>
<th>Study participants (SP) (N = 74)</th>
<th>Selected from 45 (61%) responses</th>
</tr>
</thead>
</table>
| **Theme: Expand training to all healthcare workers (HCWs) and other institutions** | “This online training should be streamed or provided to all institutions and politicians to sensitize them on the need to recognize MSM.”
| | “It should be done by all health stakeholders dealing with MSM issues.”
| **Theme: Advertisement and promotion website** | “Reach more people through media eg Radio and schools.”
| | “Make it available at facility by providing computer.”
| **Theme: Connectivity, internet, computers and mobile phones** | “Improve internet speed.”
| | “No suggestion, it is that I am still learning how to use a computer.”
| **Theme: Duration of course** | “It should also include field work.”
| | “The course is very interesting, it should be for at least five days, so we get time to discuss more.”
| (Nineteen additional participants asked for a longer course.) |
| **Theme: Improve specific modules and further learning** | “Add women who have sex with women/prostitution.”
| | “Add more pictures on the STI module. Make the questions more relevant for same are contradictory. Have authoritative literature references.”
| | “The picture of the actual penetration on page 68 [cartoon of man penetrating a man while using a condom] is somehow too much to view. Better picture can be used to demonstrate the same.”
| | “We need more testimony clips to narrate how many MSM got to fight stigma and be where they are now.”
| | “More research should be conducted on whether homosexuality could be reversed.”
| | “Perhaps translation in Kiswahili.”

available, the narrative reflections by participants who undertook this training emphasize the importance of the sanction provided by facilitated group discussions to share and explore personal and professional issues arising from the training content that may well be lost in self-directed learning [29].

Table 4. Change in MSM sexual health knowledge from baseline to three months post-training

<table>
<thead>
<tr>
<th>Difference between pre-training and post-training multiple-choice questions %</th>
<th>Healthcare workers (HCWs)</th>
<th>Pre-training (baseline) Median (%)</th>
<th>Post-training (three month) Median (%)</th>
<th>P-value (Wilcoxon)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>74</td>
<td>54</td>
<td>67</td>
<td>+12</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>24</td>
<td>56</td>
<td>71</td>
<td>+16</td>
</tr>
<tr>
<td>Female</td>
<td>50</td>
<td>54</td>
<td>65</td>
<td>+11</td>
</tr>
<tr>
<td>Age group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 30</td>
<td>23</td>
<td>54</td>
<td>71</td>
<td>+16</td>
</tr>
<tr>
<td>30 to 39</td>
<td>34</td>
<td>58</td>
<td>63</td>
<td>+9</td>
</tr>
<tr>
<td>40 or over</td>
<td>17</td>
<td>54</td>
<td>71</td>
<td>+12</td>
</tr>
<tr>
<td>Clinical</td>
<td>52</td>
<td>54</td>
<td>71</td>
<td>+13</td>
</tr>
<tr>
<td>Job type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counselling</td>
<td>12</td>
<td>58</td>
<td>56</td>
<td>0</td>
</tr>
<tr>
<td>Admin</td>
<td>7</td>
<td>42</td>
<td>75</td>
<td>+13</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>54</td>
<td>73</td>
<td>+19</td>
</tr>
<tr>
<td>Government</td>
<td>62</td>
<td>54</td>
<td>71</td>
<td>+13</td>
</tr>
<tr>
<td>Facility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NGO</td>
<td>7</td>
<td>58</td>
<td>67</td>
<td>+12</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>54</td>
<td>58</td>
<td>+4</td>
</tr>
</tbody>
</table>

1Limited to 71 HCWs with paired observations.
The brief training programme described here resulted in significant improvements in knowledge of MSM sexual health issues pertinent to day-to-day prevention and clinical practice, and it was sustained by most trainees until at least three months after training. Increase in knowledge was accompanied by a reduction in negative attitudes toward MSM over the same period. Encouragingly, the positive effect of training upon knowledge and personal attitudes toward MSM was strongest among HCWs who had poor levels of knowledge and/or more extreme negative attitudes toward MSM prior to training. That positive changes were most marked among HCWs in clinical roles within governmental settings, which represent the backbone of Kenyan HIV services, is cause for particular optimism. Studies to date of perceived barriers to healthcare access identified by MSM in Kenya [7,30] and elsewhere in sub-Saharan Africa [31,32] have reported denial of service, lack of confidentiality, ignorance and verbal abuse from governmental HIV services as central challenges in accessing sexual and general health services. The finding of this study, albeit preliminary, suggests...
both that members of this workforce are willing to learn about MSM sexual health and that their knowledge and attitude toward MSM are responsive to this learning. This study has a number of limitations. The HS, which was originally developed and validated among college students in the United States [25], required amendment to preserve its face validity in a markedly different research context. Whereas the modified scale was responsive to change with training, and thus may be useful in future efficacy analysis excluding modified scale items, the objective meaning of absolute scores and the convergent and divergent validity of this scale in this population remain to be established. Furthermore, although the assessment of training effects upon knowledge and homophobic sentiment was assessed at an endpoint long after the training itself, the longer term effect of training cannot be assumed from this study. Finally, this study lacked a control group which, ideally, would have consisted of HCWs not receiving the intervention and HCWs only participating in the self-directed learning.

We report qualitative narratives among HCWs returning to their workplace after training but finding little support for new perspectives amongst (untapped) colleagues [29]. In a recent qualitative assessment of counselling challenges regarding MSM that are experienced by Kenyan counsellors and clinicians in coastal Kenya, all felt that lack of training and supervisory support impacted their ability to serve MSM [33]. These findings may suggest that either longer term support of trained HCWs and/or more extensive facility-based training of all staff may be prerequisites to longer term changes in institutional practice. While knowledge of same-sex practices is a first step to improve services to MSM, serving MSM in day-to-day practice will further improve services. Follow-up of health workers trained in this study is planned and may provide insights in current care services provided to MSM at two years post-training. Additionally, although the training itself was conducted by facilitators from governmental services that were specially trained for the role, the study was run by a team who was unusually experienced in working with Kenyan MSM, which may threaten generalizability to other settings.

Finally, the ultimate goals of improving knowledge of MSM sexual health needs and reducing prejudicial attitudes toward MSM in healthcare settings are to enhance the accessibility of population-based, public health services to MSM themselves. Although surely a prerequisite to accessible HIV prevention, treatment and care for MSM, the extent to which changes in the attitudes and practices of healthcare providers are reflected in the perceived and practical accessibility and acceptability of services to MSM themselves is unknown. Further study will be required to establish the effect of this brief intervention on long-term attitudes and professional practices towards MSM, and what practical contribution such strategies might make to addressing unmet HIV-related needs among MSM.

Conclusions

In summary, we developed, implemented and evaluated a brief training intervention addressing knowledge and attitudes toward MSM and their sexual health needs in Kenya. The training, which combined self-directed and facilitated group learning, increased health worker knowledge and reduced homophobic attitudes up to three months after training. Scaling up such interventions offers a straightforward response to the immediate need to support HCWs in offering accessible and informed services to address the largely sexual health needs among MSM in Kenya.

Authors’ affiliations


Competing interests

The authors declare that they have no competing interests.

Authors’ contributions

Conceived and designed the study: EvdE, NM, AS, DO and EIS. Conducted data analysis: EvdE, PW, GJ, EJS and AS. Contributed to drafting of the paper: EvdE, AS, GJ, SG and EIS. All authors contributed to and approved the final manuscript.

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References

Chapter 5

Experiences of Kenyan Health Care Workers Providing Services to Men who Have Sex with Men: Qualitative Findings from a Sensitivity Training Programme

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Chapter 5

ABSTRACT

Introduction: Men who have sex with men (MSM) in Kenya are at high risk for HIV and may experience prejudiced treatment in health settings due to stigma. An on-line computer-facilitated MSM sensitivity programme was conducted to educate healthcare workers (HCWs) about the health issues and needs of MSM patients.

Methods: Seventy-four HCWs from 49 ART-providing health facilities in the Kenyan Coast were recruited through purposive sampling to undergo a two-day MSM sensitivity training. We conducted eight focus group discussions (FGDs) with programme participants prior to and three months after completing the training programme. Discussions aimed to characterize HCWs' challenges in serving MSM patients and impacts of programme participation on HCWs' personal attitudes and professional capacities.

Results: Before participating in the training programme, HCWs described secondary stigma, lack of professional education about MSM, and personal and social prejudices as barriers to serving MSM clients. After completing the programme, HCWs expressed greater acknowledgement of MSM patients in their clinics, endorsed the need to treat MSM patients with high professional standards and demonstrated sophisticated awareness of the social and behavioural risks for HIV among MSM.

Conclusions: Findings provide support for this approach to improving health services for MSM patients. Further efforts are needed to broaden the reach of this training in other areas, address identified barriers to HCW participation and evaluate programme effects on patient and HCW outcomes using rigorous methodology.

Keywords: on-line computer facilitated MSM sensitivity programme; healthcare worker; stigma; MSM; Kenya; HIV.

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Introduction

Men who have sex with men (MSM) in sub-Saharan Africa experience a high burden of HIV infection [1–3]. Strong epidemiological evidence comes from studies in Kenya [4–7], where an estimated 18.9% of MSM are HIV-positive [1]. Kenya’s National AIDS Control Council has prioritized HIV programming for MSM in their National HIV Strategic Plan [8], with the aim to support more inclusive health services for MSM [9]. Implementation of Kenya’s AIDS policies requires the ability of healthcare workers (HCWs) to deliver appropriate and sensitive services to MSM patients. Effective HCWs must have accurate knowledge of the sexual health issues of MSM, non-prejudicial attitudes and behavioural skills to treat MSM patients [10]. However, HCWs in Kenya, as elsewhere in sub-Saharan Africa, rarely receive specialized training on how to provide care for MSM [11].

To address this gap in training service providers, Kenya’s National AIDS and STI Control Programme (NASCOP) developed an education training programme to strengthen HCWs’ skills and capacity to provide non-judgemental counselling and HIV healthcare services for MSM. The training programme incorporated two learning modalities: a computer-facilitated training programme covering eight modules [MSM and HIV in sub-Saharan Africa; stigma; identity, coming out and disclosure; anal sex and common sexual practices; HIV and sexually transmitted infections; mental health, anxiety, depression and substance use; condom and lubricant use; risk-reduction counselling] in addition to facilitated group discussions among programme trainees about the programme content and relevant clinical experiences working with MSM. Both learning modalities offer complementary approaches to educational training. Computer-facilitated training modules can offer a standardized and disseminable approach to improve HCWs’ knowledge and health service delivery skills for MSM patients [12], especially in settings such as Kenya where access to formal medical education is constrained. Supplemen ting the computer-facilitated training with opportunities for peer discussion and support among HCWs can potentially enhance the transfer of standardized learning to the workplace [13].
Qualitative findings from the MSM sensitivity training programme

We conducted a preliminary pre-post-evaluation of HCWs who participated in the programme [14]. Quantitative findings showed improvements in MSM-related knowledge and reductions in discriminatory attitudes towards MSM. Effects were most pronounced among HCWs who had low levels of knowledge and/or more extreme negative attitudes towards MSM at baseline, and among HCW in clinical roles within governmental settings.

This article reports data from qualitative focus groups with participating HCWs, conducted prior to and three months after completion of the programme. The objectives of this analysis are to explore: (i) how HCWs characterized their professional challenges in serving MSM patients prior to the programme, (ii) how HCWs described the impacts of programme participation on their personal attitudes and professional capacities and (iii) how the computer-facilitated educational training programme can be improved.

Methods

Participants and intervention procedures

The study was conducted between October 2011 and March 2012 in four districts in coastal Kenya: Kilifi, Kilindini, Malindi and Mombasa. To recruit trainee participants, NASCOP issued announcements to 49 health facilities providing antiretroviral treatment in the four targeted districts. Announcements described the study as a two-day residential programme involving computer-facilitated training and group discussions on HIV and MSM. Volunteer participants completed informed consent procedures, and those who enrolled received 2000 Kenya shilling (approximately US $24) for travel and lodging adjacent to the training facility in Kilifi.

Participants were 74 HCWs from the four target districts. Fifty were females and 24 males, including 22 clinicians, 43 nurses and counsellors, and nine administrators/managers. The average age was 34. All participants identified as Kenyan, 84% as Christian and 15% as Muslim. Eighty-six percent had no previous training about MSM or anal sexual practices. Three participants (two females and one male) were transferred to health facilities outside the study area after the initial training and could not participate in the follow-up focus groups.

A total of four groups were convened to participate in the two-day residential training (one group per district), with 18–19 participants per group. During Day 1, participants received a general overview of the programme, and each participant then independently self-administered the first four modules of the standardized, computer-facilitated training. Modules were designed to take up to two hours to complete. At the end of each module, participants answered a series of multiple-choice questions (up to 16 questions); to advance to the next module, participants were required to achieve a minimum score of 71% correct. After every two modules, participants engaged in a group discus- sion to reflect on the information and identify barriers and facilitators to improve on HIV prevention and other services for MSM in Coastal Kenya. A member of the research team facilitated group discussions. During Day 2, participants completed the final four modules and group discussions. At the end of Day 2, participants were asked to discuss work strategies for improving the quality of clinical care and HIV/STD testing for MSM patients in their districts. Research team members included an MSM counsellor, a community liaison officer, a senior research counsellor and a social scientist; teams were supported by two MSM members from a local non-governmental organization. Research team members received a comprehensive three-day training on the inter- vention objectives and procedures, including didactics and role-play opportunities for discussion and problem solving.

Focus group discussions

Eight focus group discussions (FGDs) (each comprising 9–10 participants; two focus groups per training) were conducted with participating HCWs prior to the training and were repeated three months following completion of the training. Focus groups were semi-structured and facilitated by a member of the research team, with a co-facilitator present to observe and take notes. Discussion topics included: identification of subcategories of MSM and their character- istics; sexual practices of MSM and risks for HIV and STI transmission; practices for sexual history taking and sexual health examination with MSM; risk-reduction counselling for MSM; personal values and attitudes towards MSM; strategies to improve communication between HCWs and MSM patients. Most discussions were conducted in English, although participants were also encouraged to speak in Kiswahili depending on their preference and language skills. All discussions were audiotaped, transcribed and entered into NVivo. FGDs conducted in Kiswahili were translated into English.

Analyses of qualitative data followed the “framework approach” described by Ritchie and Spencer [15], which involves systematic coding to identify and define concepts emerging from the data, mapping the concepts, creating typologies, finding associations between concepts and seek- ing explanations from the data. Data were coded by two independent research team members to ensure that inter- pretations of quotes were consistent and that data analysis was rigorous and transparent. The main concepts emerging from the data included: secondary stigma, professional training and service barriers to MSM patients; types of and justifications for social discrimination towards MSM in Kenyan culture; invisibility and silence about homosexuality in Kenyan culture; and subjective theories about the origins and nature of homosexuality. Differences among codes were resolved by group discussion involving other members of the research team.

The study procedures were approved by the ethical review board at the Kenya Medical Research Institute. All participants provided written informed consent for the FGD.

Results

Discussion of MSM-related attitudes, beliefs and behaviours before training

Secondary stigma

For most participants, secondary stigma was a dominant concern. Secondary stigma refers here to negative judgements from peers and community members for being associated with MSM. Participants cautioned that professional trainings...
focused on MSM would deter many health professionals from participation:

To me, the term MSM is stigmatizing because naturally, a man is not supposed to have sex with another man. As for this training . . . The [invit ation] letter was written, ‘MSM training’. When we informed them, people were like, ‘An MSM training, what is MSM?’ . . . Some individuals declined to go for the training, ‘I can’t go for such training’.

Several participants feared that colleagues would question their willingness to serve MSM patients, and perhaps suspect the HCWs of being MSM themselves:

You know MSM, as he had mentioned, are regarded as outcasts. Therefore, if you offer to treat them in your clinic, the community will perceive it as . . . the clinicians are also MSM.

Owing to this fear, many HCWs described minimizing the amount of time with MSM patients. For example, one participant described having a basic willingness to serve MSM patients, but would allocate the shortest time possible:

The fear of being associated, that’s what is making us spend as little time with MSM clients when they come to our facilities. You will hurriedly clear him out.

However, fear of secondary stigma was not consistently expressed by all members of the discussion. A small subset of participants who had previous education and sensitization on MSM prior to the training reported comfort in attending to MSM patients. Consequently, these HCWs had become MSM patient advocates and educators in their clinics prior to engagement in this research study:

I was trained . . . on issues to do with MSM. Last week, I met an MSM client who was HIV positive. It was in one of our departments and the nurse was like, ‘. . . you are the person who deals with these kind of clients’. I told her to refer the client in my office . . . Actually, I had to take [my colleague] for an MSM training. Her attitude has really changed and she is a now a different person.

Inadequate professional training and resources

Participants acknowledged having little or no education about MSM health. Indeed, prior to the training programme, many HCWs expressed a sense of denial about the existence of MSM. For example, one reported that:

I tend to reason differently when it comes to MSM. I sometimes tell myself, no, this doesn’t exist; this is not possible.

Across multiple discussions, others questioned whether MSM are present in their local communities:

Some of us are really green, we just hear stories on internet that some men are having sex with other men but we have never had an interaction with the MSM. MSM are unheard of in the place I come from.

HCWs who acknowledged the presence of MSM patients in their clinics described feeling inadequately prepared to provide services. Those with prior experience consulting MSM patients described specific challenges in diagnosing and treating rectal STIs, and argued for more appropriate guidelines:

Of late, it’s only a few individuals who have been trained in our facility. We don’t have a guideline, yet we see them daily. We have no idea on how to manage infections affecting men who have sex with other men.

Most of the medical personnel are not sensitized on issues to do with anal STIs and they are also not indicated in the STI charts. They only specify about urethral discharge, cervicitis, urethritis in men, PID [pelvic inflammatory disease] etc. It doesn’t mention the anus.

Lacking the knowledge, skills and treatment guidelines for rectal STIs, HCWs often relied on guesswork and assumptions. Participants recognized the likelihood of under-diagnosing or misdiagnosing rectal infections transmitted through anal sex.

And when we are counselling or probing them about sex, we only ask them, ‘Do you usually have sex?’ When they say yes, we don’t probe further to know the type of sex i.e., we just assume it is heterosexual. The medics are also not trained and if an individual comes with an anal complaint, they assume that it is haemorrhoids and refer them for surgery.

HCWs described how limitations in assessment forms reinforce the invisibility of MSM in their clinics. By not collecting information about same-sex behaviour or anal sex practices, these topics are reinforced as taboo issues that warrant silence and discomfort.

Most of the tools and the working conditions are not accommodative for this line of sexual orientation. I have never seen a tool in the CCC [comprehensive care centre] or the TB clinic asking for the clients’ sexual orientation. So, it’s like, ‘I don’t need to know of what you do’. . . Therefore, the tools should be designed to capture the sexual orientation of a person so that the health workers can have a feel that it is a part of the health issues and not a gossip.

Additional resource limitations for treating MSM were discussed. HCWs reported on the inconsistent supply of lubricants for use during anal sex, and also described how the physical structure of the health facility hinders their ability to provide privacy and confidentiality for sexual health consultations.

The MSM usually come to the clinics and ask for the lubricants or condoms but you will find that the lubricants are not available; it’s only the condoms. I think there is no confidentiality because of the way our health facilities have been structured,
Qualitative findings from the MSM sensitivity training programme

i.e., someone can bump in while you are attending to a client. You could be talking of sensitive issues but other staffs won’t bother. They will sit on the other side and do their stuff. So the client might not be free to open up.

Personal and social homophobia
Many HCWs acknowledged holding prejudiced views towards MSM. A number of participants commented on how negative judgements towards MSM may influence the provision of services.

We perceive them negatively and feel that they don’t deserve our services. Some health workers don’t like to examine them. They claim that such infections are self-inflicted.

HCWs reflected on the influences of culture and religion on their treatment of MSM patients. When reminded of their professional obligation to provide effective services to all patients, they described internalized barriers that must be overcome.

I find it abnormal for a man to have sex with another man. It is both culturally and religiously unacceptable… Voices from religion or the community tell me that it is wrong. Professionally, I will have to handle that shock and look at possible ways of helping this person.

Participants reported a tendency to exhibit subtle forms of stigma and discrimination towards MSM patients, such as by maintaining body distance. Other times, HCWs explicitly showed disparaging treatment:

When they seek medical assistance in our facilities, the same providers will shout, ‘Look at him, he is telling me that he is having an anal STI; can you leave my room’. Instead of treating them with respect, they end up drawing their colleagues’ attention.

However, some HCWs challenged those who expressed personal prejudice towards MSM. Participants who had prior exposure to MSM sensitization argued that HCWs have a professional duty and societal obligation to provide non-prejudicial services to MSM.

We as health workers feel that MSM issues need not be discussed, they are regarded as outcasts. How then would we come up with a constructive discussion about people whom we feel should not be in the society at first place? In my opinion, I think this is the biggest obstacle. If we accept these people and treat them as our clients, then it will be of great help to the society.

Post-training discussion of HCWs’ attitudes, beliefs and behaviours

Recognition of MSM in Kenya
A pervasive theme in post-training focus groups was the explicit recognition of MSM in Kenya. Many reflected on how their prior denial of MSM behaviour, and their previous belief that anal sex among men was negligible in Kenya, had inhibited their capacity to provide services. Participants felt “empowered” by the training to address HIV and other health needs of MSM, as one stated:

I didn’t ever believe that MSM were in existence but the training empowered me with a lot of knowledge and information on how to probe about issues of anal sex.

Participants described how the training enhanced their understanding of the complex interplay between homophobia, community denial of MSM and HIV transmission. Some advocated to local colleagues for the acceptance of MSM and educated them about the biological and behavioural circumstances that place MSM at heightened risk for HIV infection. One participant described:

I went and gave the feedback to my colleagues immediately after the training and some were as if they have never heard such a… They used to hear about it but they were not sure whether it was a real, whether such people exist. Therefore, I had to make them understand that the practice is in existence and that’s nature.

Professional responsibilities as a health provider
During follow-up focus groups, participants described their professional responsibility to treat all patients with equity and respect. They endorsed a basic value of professionalism and treating MSM patients to the best of their ability. For many, this required a suspension of personal judgement in order to provide effective care:

As a professional, I am not supposed to segregate them, whether I support homosexuality or have a different perception or judgment. As a clinician, my duty is to treat without imposing my values on the patient. That’s the positive thing I got from [the training program] and it’s what I’m doing now.

Some described witnessing discriminatory actions towards MSM in their facilities or observing breaches in patients’ confidentiality. They reflected on how these experiences could foster distrust of HCWs and discourage MSM patients from seeking care when needed, thus perpetuating a cycle of HIV transmission. There was widespread consensus among group members that a concerted effort must be made to establish trusting rapport with MSM patients, and take extra care to employ discretion at all times. As one participant articulated:

I think the problem is that, the individuals we have attended to still want to see if they can trust us, if we can respect their privacy… As for now, it will take time because they are trying to internalize on our missions towards them and they will come out once they are convinced that you don’t have an ill motive towards them.

During the follow-up focus groups, HCWs were asked to reflect upon and share their experiences, that is, work practices and attitudes towards MSM in their respective health facilities, and to reflect on strategies to change
discriminatory actions towards MSM in their health facilities. Many participants stressed the importance of separating personal and religious values from professional ethics for the sake of HIV prevention in Kenya. While some felt the training had helped to normalize same-sex relations, others adamantly affirmed their aversion to MSM practices, but felt that they could compartmentalize their values to achieve the greater national public health goal.

The key message is almost the same. We are concentrating in breaking the transmission cycle among special groups, neglected groups. The bottom line is: we are not promoting but trying to help.

Sophisticated knowledge of risk in MSM

During the follow-up FGDs, participants exhibited a multifaceted understanding of the biological, behavioural and social influences that place MSM at risk for HIV. They described a better understanding of the processes through which unprotected anal sex contributes to HIV and STI transmission in both men and women, and the ways in which condoms and lubricants help to reduce risk. Moreover, many participants identified quality health education and counselling for MSM patients as integral to HIV prevention efforts in Kenya.

Participants generally recognized the societal pressures on MSM to conceal their sexual orientation, which MSM often mitigated by engaging in heterosexual relationships. They discussed the ways in which discrimination and lack of counselling and support services have hampered access to vital health services for MSM. The stigma endured by MSM in Kenya was consistently identified as an impediment to treatment, and many participants emphasized the need for HCWs to be thorough when examining MSM patients, who might not readily disclose their sexual practices:

I think it is good to do an examination as far as STI is concerned. A client might tell you that he is having a problem in his private parts. Such a client will openly tell you the exact location of the problem when you take the initiative to examine him. Even if they go, they tend to be reluctant to disclose to clinicians that they are having anal infections. They end up getting the wrong medication and suffer in silence.

Ongoing challenges

Participants reflected on the challenges they will continue to face in affording appropriate health services to MSM. Many HCWs noted that time constraints and heavy workloads hinder their ability to deliver sensitive health services that MSM patients might require. Despite their desire to provide comprehensive health services to their MSM patients, some of the participants felt this was not always possible in practice:

Sometimes, as much as you would like to give all the attention to the client, there is a workload issue as other patients will be waiting. You may want to give the best, but the patients and the workload are too much.

Secondary stigma was considered an ongoing challenge, and HCWs tasked themselves to confront discrimination and stigma towards MSM expressed by their professional peers. Education, institutional support and other monitoring mechanisms were mentioned as powerful means for mitigating the effects of secondary stigma on service delivery to MSM patients, but all HCWs concurred with the fact that “it begins with openness, respect and understanding.”

HCWs emphasized the social challenges in targeting MSM for HIV preventative care. The marginalization of MSM, the belief that homosexuality runs contrary to cultural values and the fear of secondary stigma and resistance from fellow health professionals were regarded as impediments to the provision of care for MSM. As one participant stated:

Personally, I can say that my values have changed, though not 100%. I am not sure of the exact percentage, but I have positively changed. As much as I would like to live and exercise my changed values, there are still so many challenges in the society. I would like to give comprehensive care to MSM, but the society is too negative about them. This is a very big blow, given the fact that I am the only changed person.

In light of this, many participants noted the need for duplication opportunities for HCWs not yet trained on MSM sensitivity issues. They unanimously remarked that the on-line sensitivity course is very beneficial for skill development and in combination with follow-up group discussions allows for interpreting learning and connecting it to daily practice.

All participating HCWs advocated for community-wide sensitization campaigns to reduce stigma and encourage awareness of HIV risk in MSM, expressing the need for the community at large to engage in ongoing and productive dialogue in the struggle against HIV in Kenya.

Discussion

This analysis provides qualitative insight into HCWs’ attitudes and experiences with MSM prior to and following a computer-facilitated MSM sensitization training programme [15] that will assist in amending the health workers’ e-learning sensitization course in future. Primary concerns expressed at baseline included fear of secondary stigma, lack of professional education about MSM, and negative influences of personal and social prejudice towards MSM. The nature of discussions changed following the programme, in which participants acknowledged the presence of MSM in their clinics, endorsed the need to treat MSM patients with high professional standards, and demonstrated sophisticated awareness of the social and behavioural risks for HIV among MSM. HCWs advocated for continuing the training and inviting more health professionals to participate, but cautioned that exclusively targeting MSM in the programme title could deter participation. HCWs also commented on the need for ongoing community dialogue about MSM, but recognized that community-level change will take time.

The attitudes and beliefs expressed by participants before versus after the training reveal many of the challenges to
service provision for MSM patients. In general, participants’ personal beliefs about MSM and their endorsement of stigmatizing attitudes appear to have transformed following the programme. However, participants expressed ongoing concerns about secondary stigma and the influence of their professional peers’ negative judgements towards MSM patient and, by association, towards themselves. Professional peers’ negative and stigmatizing attitudes can potentially dilute the effects of the training on HCWs. Efforts to train larger cohorts of HCWs, establish networks of trained HCWs across different health clinics and change of institutional norms towards MSM patients may be necessary to counter the effects of secondary stigma and achieve sustainable improvements.

Limitations to this research must be acknowledged. First, due to the nature of qualitative methodology, participants’ responses might be influenced by social desirability and peer influences. Second, the findings reported here do not permit temporal, causal, or quantitative inferences, but indeed correspond with programme evaluation data reported in a related paper [14]. Third, due to the voluntary nature of participation, attitudes expressed by HCWs in this sample might not be representative of their peers and colleagues. Fourth, due to the active role of Kenyan health administrators in supporting this programme, the findings might not be replicable in areas where such support is lacking.

Conclusions

This is the first known qualitative evaluation study of an MSM sensitivity training in Africa, which suggests that an online MSM sensitization training combined with group discussions can be a promising approach to improving health providers’ awareness, attitudes and beliefs about the health needs of MSM patients. Quantitative evaluation results, which show similar findings, are reported in a companion paper [14]. Further research is needed to evaluate the programme in a controlled study, and examine the implementation processes associated with successful programme delivery. Perspectives and service delivery outcomes from MSM patients would enhance understanding of the impact of this training on patient interaction. A particular strength of the intervention was the incorporation of two complementary training modalities - computer-facilitated training and group discussions – to provide didactic content as well as opportunities for group reflection, feedback and support. In general, participants noted a transformation in their personal attitudes and endorsement of stigma towards MSM following the training. However, their comments revealed the continued challenges to providing services to MSM in the context of broader societal homophobia and secondary stigma among their peers; their comments also highlighted challenges in recruiting larger groups of HCWs into the training due to anxiety around secondary stigma. Findings reported here can inform further adaptations of the training, particularly those domains that might influence HCWs’ willingness to participate and respond to the training (e.g., by emphasizing professional responsibilities of all health providers) and that diminish the effects of secondary stigma (e.g., by providing opportunities for ongoing support among trained HCWs). Findings underscore the need to view HCWs as an integral, but not absolute, component in addressing HIV and other health adversities among Kenyan MSM. Trained HCWs might benefit from continued opportunities for peer support, to counter feelings of professional isolation and motivate engagement in best practices. As participants noted, multi-component programmes and long-term commitments are necessary to achieve the goal of providing appropriate, effective services to MSM.

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Competing interests

The authors declare that they have no competing interests.

Authors’ contributions

EMvdE, EG, AO, JK, ZD, SMS, ADS, LS and DO conceived and designed the focus group discussions. EG, JK and EMvdE conducted the focus group discussions. EMvdE, MM, SS and DO analyzed the data. EMvdE, DD, MM and SS wrote this article. JK acted as the Study Coordinator. All authors have seen and approved the final version of this manuscript.

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References

Men who have sex with men (MSM) in sub-Saharan Africa where an estimated 18.9% of MSM are HIV-positive [1]. However, HCWs in Kenya, as elsewhere in the region, face challenges in serving MSM patients [8], with the aim to support more inclusive health services for MSM in their National HIV Strategic Plan [9].

Kenya’s National AIDS Control Council has prioritized HIV programming for MSM in their National HIV Strategic Plan [9]. This reflects the epidemiological evidence comes from studies in Kenya [4].

**Introduction**

Men who have sex with men (MSM) in Kenya are at high risk for HIV and may experience prejudiced treatment in their clinics [2]. This approach to improving health services for MSM patients will be explored using a participatory approach to identify facilitators and constraints in serving MSM patients [13]. Supplementing the computer-facilitated training programme with on-the-job training can offer a standardized and disseminable approach to improve HCWs’ knowledge and health service delivery skills for MSM patients [12], especially in settings where programmatic effects on patient and HCW outcomes using rigorous methodology are constrained. Therefore, the National AIDS and STI Control Programme’s (NASCOP) sensitivity training programme incorporated two learning modalities: a computer-facilitated training programme covering eight modules [MSM and HIV Healthcare Services for MSM], and a non-computer-facilitated sensitivity training module.

**Methods**

HCWs can potentially enhance the transfer of standardized learning to the workplace [13]. The computer-facilitated training programme incorporated two learning modalities: a computer-facilitated training programme covering eight modules [MSM and HIV Healthcare Services for MSM], and a non-computer-facilitated sensitivity training module.

HCWs can potentially enhance the transfer of standardized learning to the workplace [13]. The computer-facilitated training programme incorporated two learning modalities: a computer-facilitated training programme covering eight modules [MSM and HIV Healthcare Services for MSM], and a non-computer-facilitated sensitivity training module.

**Results**

Before participating in the training programme, HCWs described secondary stigma, lack of professional education about modes of HIV transmission, and personal and social prejudices as barriers to serving MSM clients. After completing the programme, HCWs expressed greater acknowledgement of MSM patients in their clinics, endorsed the need to treat MSM patients with high professional standards, and stated that the programme had helped them increase their knowledge and skills concerning MSM. Fifteen of the 16 focus group discussions were audio-taped and the transcripts were entered into a computer database.

**Discussion**

The findings provide support for this approach to improving health services for MSM patients. Further efforts are needed to promote the acceptance and implementation of this approach.

**Conclusion**

This study provides evidence for accelerating programming. It highlights the importance of training providers in HIV healthcare services for MSM, especially in settings where programmatic effects on patient and HCW outcomes using rigorous methodology are constrained. The study findings provide support for this approach to improving health services for MSM patients. Further efforts are needed to promote the acceptance and implementation of this approach.

**References**


Chapter 6

“The Green Shoots of a Novel Training Programme: Progress and Identified Key Actions to Providing Services to MSM at Kenyan Health Facilities”

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ABSTRACT

Introduction: Although men who have sex with men (MSM) in sub-Saharan Africa are at high risk for HIV acquisition, access to and quality of health and HIV services within this population are negatively affected by stigma and capacity within the health sector. A recently developed online MSM training programme (www.marps-africa.org) was shown to contribute to reductions in MSM prejudice among healthcare providers (HCPs) in coastal Kenya. In this study, we used qualitative methods to explore the provision of MSM healthcare services two years post-training in coastal Kenya.

Methods: From February to July 2014, we held 10 focus group discussions (FGD) with 63 participants, including HCP from 25 facilities, county AIDS coordinators and MSM from local support groups. Participants discussed availability, acceptability and accessibility of HIV healthcare for MSM. HCP also discussed changes in their health service practices after completing the training. FGD were recorded, transcribed verbatim and analyzed using Ritchie and Spencer’s “framework approach” for qualitative data.

Results: HCPs described continued improvements in their ability to provide service in a non-stigmatizing way to MSM patients since completing the training programme and expressed comfort engaging MSM patients in care. Four additional recommendations for improving MSM healthcare services were identified: 1) expanding the reach of MSM sensitivity training across the medical education continuum; 2) establishing guidelines to manage sexually transmitted anal infections; 3) promoting legal and policy reforms to support integration of MSM-appropriate services into healthcare; and 4) including MSM information in national reporting tools for HIV services.

Conclusions: Positive impacts of this sensitivity and skills training programme were reflected in HCP attitudes two years post-intervention. Scaling-up of efforts will rely on continued policies to include MSM in healthcare programmes to reduce stigma in health settings and guidelines for MSM STI service delivery.

Keywords: MSM sensitivity and skills training; healthcare provider; stigma; MSM; Kenya; HIV.

Introduction

Men who have sex with men (MSM) make up a large proportion of new HIV infections in sub-Saharan Africa (SSA) [1–6]. Yet MSM face challenges accessing HIV health services, and investment in targeted, knowledgeable and sensitive services is urgently needed [7–10]. Experiences of discrimination at health facilities – such as healthcare providers’ (“HCPs”) stigmatizing attitudes and reluctance to talk about sexual matters – often result in substandard healthcare provision and can intensify MSM’s fear of seeking healthcare [11–13]. In addition, polemic national debates about the morality of same-sex practices in Africa cast negative attention on MSM, raising barriers even higher for HCPs to provide quality healthcare to MSM and contributing to further difficulties in healthcare access among MSM [9,14–16]. Reports from the Global Commission on HIV and the Law seek to challenge stigma and promote inclusion in health policy for homosexuals, urging African governments and regional institutions to ensure access to HIV prevention, care and support for all people [17,18]. Implementation of recommendations from the commission remains a daunting task.

In Kenya, all citizens have the right to healthcare services in accordance with non-discrimination laws stated in the revised 2010 Kenyan national constitution [19], and the Kenyan Ministry of Health recently recognized MSM as a key population in their National AIDS Strategic Plan [20]. In 2013, the National AIDS and STI Coordination Programme (NASCOP) and the National AIDS Control Council committed to scaling-up equitable HIV services for MSM [21]. However, despite improvements in health policy, many Kenyan HCPs lack the training and skills to implement appropriate and non-discriminatory services to MSM patients in their facilities [9,22].

A recent pilot study conducted by NASCOP and researchers from the Kenya Medical Research Institute (KEMRI) sought to
implement and evaluate an online education programme on treatment of MSM patients, developed specifically for HCPs with a clinical role, such as clinicians and nurse counsellors, in SSA (www.marps-africa.org). The programme was called the MSM-Appropriate Services and Training, or MAST programme. It consisted of eight self-administered modules delivered via computer and involved group discussions to facilitate peer support among HCPs for providing appropriate and non-judgmental HIV and STI services to MSM patients [23]. Since the launch of the open-access, web-based programme in December 2010, 1150 Kenyan HCPs have completed the MAST online training programme [24].

In 2012, an initial evaluation of the programme was conducted among 71 HCPs, of whom 52 had a clinical role. Findings showed that at three months post-training, more HCPs had acceptable levels of knowledge of MSM sexual health issues and lower levels of homophobic attitudes compared to baseline; effects were strongest among HCPs with high homophobia scores at baseline [8]. However, questions remain regarding the longer-term effect of this brief training intervention upon attitudes and professional practices towards MSM patients among trained HCPs [25].

This paper explores attitudes and professional practices of a subset of the HCPs in clinical roles two years after completing the training. Qualitative methodology was used to explore HCP experiences with more patients, perceptions about gaps in service provision for MSM and beliefs about strategies to maximize the quality of care for MSM patients. Narrative experiences from members of the health policy sector and MSM community members also provided insight into health services for this population.

Methods

Participants and procedures

The study was conducted between February and July 2014 in Kilifi and Mombasa counties in coastal Kenya. Qualitative methods were used to collect narrative data about participants’ perceptions and experiences about the provision and quality of local health services for MSM. Three groups of respondents were recruited: 1) HCPs who completed the original MAST online training programme two years ago, presently providing clinical services to MSM in the study area; 2) MSM involved in local community-based MSM organizations (CBOs) and 3) local policymakers, referred to as county AIDS and STI coordinators (CASCOs), willing to discuss policy and health service practices for MSM. Due to small numbers of CASCOs, we conducted paired interviews each with two CASCOs from different districts; all others participated in focus group discussions (FGDs).

The study procedures were approved by the ethical review board at the KEMRI and all participants provided written informed consent. HCPs and CASCOs received 1000 Kenyan shillings (approximately US$12) for travel and time compensation, and MSM were offered lunch and 500 Kenyan shillings. Reimbursement amounts were determined based on previous studies with these groups and were deemed appropriate and non-coercive according to local standards.

Focus groups and interviews

Out of the 52 HCPs who had previously participated in the pilot study, 32 HCPs still provided clinical services in the study area and participated in five FGDs (six to eight participants per group). Twenty HCPs were considered lost to follow-up partly due to administrative transformation with the promulgation of Kenya’s new constitutions. HCPs either had migrated back to their home counties or were transferred outside the study area. Three FGDs were held with 31 local MSM community group members, known by their organizations to frequent sensitized healthcare facilities in the coast (9 to 11 participants per group). Four CASCOs from the administrative units along the coast were invited for paired interviews. The average age of the HCPs and CASCOs was 38 years, 50% were male, 20% Muslim and 80% Christian. The average age of the MSM participants was 26 years, 50% were Muslim, 84% unemployed and 55% had completed secondary education.

Following on from discussion of data from the pilot study’s focus groups, which elicited HCPs’ overall reaction to the sensitivity and skills training programme [9], discussion topics focused on participants’ experiences during the two years following delivery of the MAST sensitivity training programme. Themes included perceptions and experiences about local healthcare delivery for MSM and perceptions and experiences of healthcare services for MSM in terms of availability, quality and accessibility. Discussions were semi-structured and facilitated by a member of the research team, with a co-facilitator present to observe and take notes.

Discussions with HCPs and CASCOs were conducted in English; discussions with MSM participants were mainly in Kiswahili depending on preference and language skills. All discussions were audiorecorded, transcribed verbatim and entered into NVivo. FGDs conducted in Kiswahili were translated into English by two members of the research team.

Analyses of qualitative data followed the “framework approach” described by Ritchie and Spencer [26], which involves systematic coding to identify and define concepts emerging from the data, mapping the concepts, creating typologies, finding associations between concepts and seeking explanations from the data. Data were coded and triangulated by two colleagues independent of the interviews to ensure that interpretations of quotes were consistent and that data analysis was rigorous and transparent.

Results

Expanding the reach of MSM sensitivity training:

Professional transformations

Two years post-training, HCPs described how programme participation influenced their ongoing ability to provide non-judgmental health services to MSM patients. They described refraining from making professional judgments of MSM patients based on personal opinions and values, and they remarked on transformations in their ability to integrate new knowledge and skills about HIV and other STIs into their professional practice with MSM.
Before, I had a negative attitude towards MSM, but after the training I realized that they are human beings. I should accept them the way they are. I changed my attitude, and when the guys saw me they said, "So you went for that [sensitivity] training, are you ready to work with us?" I said "yes, don't worry..." [nurse, 38, Muslim, female]

After the training I realized it's my work to reduce harm. Now I can treat without discrimination... I told him [MSM patient] "if you are not comfortable, please come and see someone that you'll be free with, and be helped with ART adherence"... and he did come back and was started on medication. [nurse, 32, Christian, male]

As the latter quote suggests, increased capacity to provide non-stigmatizing and non-discriminatory services to MSM patients can contribute to critical HIV outcomes, including engagement in care and ART adherence.

HCPs noted that a key component of the MAST programme was the opportunity to share with colleagues their experiences in providing services to MSM patients and reflect on their challenges in providing effective care, as noted in this quote:

For the first time we were actually talking about giving services to homosexuals. So in a way, we stopped looking at them as people who are not in our thinking... and tried to reflect on the many times we may have misdiagnosed patients with anal pain assuming it's hemorrhoids. [clinician, 37, Christian, female]

Thus, not only did programme participants benefit from new knowledge and skills provided to HCP trainees, but they gained a safe context for discussion and reflection about the quality of their services to MSM.

Integration of MSM sensitivity training in medical education

HCPs recommended the inclusion of MSM sensitivity training as an integrated component of medical education in Kenya. They recommended that such training be integrated along the medical educational continuum, from undergraduate curriculum to postgraduate training and lifelong learning. There was recognition that MSM sensitivity training is particularly needed at the pre-service level:

We should lobby and ensure that MSM sensitivity training is incorporated in the curriculum at pre-service level. None of these things are in the syllabus of any medical school: these are things that come and you find them as you work. [Clinician, 35, Christian, male]

Participants remarked that integrating MSM sensitivity training into medical education would allow trained HCPs to more easily recognize the presence of MSM patients in their care and empathize with MSM patients who experience difficulty presenting their health concerns. For example, a participant commented on a tendency for MSM to speak about their same-sex behaviour using innuendo rather than direct language, which might confuse non-trained HCPs:

Someone [HCP colleague] was sharing with me that a patient came with an STI, but it took a while before that person could explain. The patient kept on saying: "You know I am not like you", and the HCP was like: "If you are not like me then who are you?", and he insisted "I am not a man like you", but the HCP still couldn't get it until we talked about it. Thank God it was after the training. [Clinician, 39, Christian, female]

Muslim HCPs and younger male HCPs

Providing training to HCP with Muslim backgrounds was highlighted as a particularly challenging part of scaling-up the training and integrating MSM sensitivity into local practice. For example, a young Muslim HCP expressed difficulty implementing new skills following participation in the MAST programme:

I was told, "Now you as a Muslim what is this you are bringing to us? Where will you begin here, yet you know we are in a Muslim neighborhood?" It wasn't easy, but since I had the MSM sensitivity guide I shared with them, okay, some Muslim HCPs picked it, but not all... some of them will never change no matter how you try... [Clinician, 32, Muslim, male]

Similarly, training young male HCPs is a challenge due to homophobia and fears of secondary stigma among young heterosexual men. This issue is reflected in two quotes from the perspective of an MSM community member and an HCP:

Then, there is something that we have come to realize, when we weigh the HCPs who are friendly to MSM. Young males are the most homophobic. I think it is because they [young male HCPs] have big egos, and fear of being labelled 'husbands of gays'. (MSM, 25, Muslim, unemployed, sec school)

When he [MSM patient] came to me, I didn't want him to be stigmatized, I walked out with him at the corridors and we sat and talked. But the way my co-workers looked at me until that procedure was over... at first I couldn't function. I talked to that guy and made sure he got his medication, but after he had left I was stigmatized, people didn't even want to come close to me. [Clinician, 29, Muslim, male]

Sustaining change and scaling-up the sensitivity training programme

Sustaining the outcomes from the MSM sensitivity training programme was a noted concern, because many of the original trainees had left the region in the two years since the programme ended. CASCOs remarked on understaffing, heavy workloads and lack of government support as factors that...
contribute to high staff turnover that, ultimately, can minimize long-term results:

The majority of the staff we trained went elsewhere. Some resigned, some joined other institutions and some went back to their mother county following the devolution (The term devolution refers to the statutory granting of powers from Kenya’s central government to a new subnational level of government. This administrative change took place in 2012 and caused the outmigration of HCPs, who returned to the counties they originated from). Then some were internally transferred. In line with this, who will be responsible to continuously keep the sensitivity training going? The national government, the county, HCPs themselves? (CASCO, 39, Muslim, male)

Efforts to expand the scope of MSM sensitivity training outside of the health sector were noted as a strategy to improve societal inclusion of MSM individuals. For example, the following quote suggests a need to provide MSM sensitivity training to law enforcement, policymakers and religious leaders, in order to truly broaden the reach of the programme:

In the training, we focused on the HCPs, but we need to identify other service providers MSM need their services from, like the police, local administration, or religious leaders and train them so that they can support MSM access of services and deal with stigma in the community. . . we need to bring a holistic approach in this access of services for MSM. (CASCO, 45, Muslim, female)

Need for national guidelines to manage sexually transmitted anal infections

HCPs described how the absence of guidelines on management and treatment of anal STIs limited their ability to correctly diagnose anal STIs.

You know, we have this syndromic management of STIs, but it focuses on the vagina and urethra, there is none that has treatment for anal conditions. That’s why the training was an eye opener, especially the way we ignore anal STIs. When a man comes in and says “naumwa huko chini” [I have pain down there] no one takes time to find out “chini wapi?” [down where?]. We all assume it is hemorrhoids and take him for surgery. (Clinician, 38, Christian, female)

Because of time pressure and staff shortages, some clinicians admitted to superficial discussion with MSM patients. In government facilities, where patient loads are particularly high, HCPs described lacking the energy or enthusiasm to ask about sexuality or STI symptoms, failing to take sexual history and declining sexual examinations. HCPs felt that clear guidelines on diagnosing and managing anal STIs would give impetus for increased attention to relevant symptoms. One clinician remarked:

. . . you know, some of our colleagues are very rough and they don’t follow the right procedures. They’ll be like “say your problem, and if you don’t want to . . . just go . . .”; They want to clear the queue and don’t have time for ‘particular sensitive clients’. If we could have procedures on how to go about sexual history, and physical examination, we’ll be able to identify anal STIs, and give effective medication. (Clinician, 35, Christian, male)

Need for legal and policy reforms

CASCOs called for a paradigmatic change, whereby the code of ethics stated in national policies needs to be embedded in a broader spectrum of HCP professional and personal competencies. They emphasized the constitutional mandate of HCPs with regard to offering healthcare services as a basic human right:

In our health sector strategic plan, we also have the code of regulations and codes of ethics. They are written all over in the health facilities. As the county health management team we are taking our staff through the new constitution with regard to health, but I think we need to have more forums to deliberate and have open discussions [to support provision of services to MSM]. (CASCO, 43, Muslim, male)

CASCOs remarked on the tension and legal uncertainty among HCPs with respect to providing healthcare to MSM — i.e. the fear of contravening the constitution, which criminalizes same-sex relationships, contrasted with the duty to obey legal mandates to provide non-discriminatory health-care services.

The constitution talks about same-sex as illegal, and then when you go to the same constitution it talks about provision of services without discrimination. . . “service to all” and “Nuduma bora ni haki yuko” [better services are your right]. What are we supposed to do? (CASCO, 38, Christian, female)

CASCOs called for both advocacy and paralegal educational programmes for health staff. Moreover, they felt that medical educators and chief healthcare officers and administrators have a distinct responsibility in implementing national policy:

You look at anything that happens in an institution . . . You see when you are in charge of a team it is something that transcends right from the big person, the person with authority who is a role model. (CASCO, 39, Muslim, male)

Inclusion of MSM in implementation and reporting tools

The lack of inclusion of MSM in service implementation and reporting tools proved to be an inhibiting factor to monitoring and evaluating MSM services. CASCOs recommended improving national reporting instruments by recognizing and including MSM:

. . . we can come up with a sample [monitoring and evaluation tool] that we use to report with NASCOP, then . . . eventually when they [superiors] see the need they can fine tune it for national usage. (CASCO, 38, Christian, female)
CASCOS also suggested conducting regular audits of the availability of comprehensive HIV packages for MSM, including lubricants and provision of proctoscopies at government and private healthcare facilities. To improve provision of appropriate services, CASCOS discussed creating specific standard operating procedures (SOPs) to monitor quality control and quality assurance when treating MSM patients:

We probably need to come up with SOPs. It can outline exactly what is needed and help with planning and quantification of commodities and equipment to be used (CASC0,43, Muslim, male).

Similarly, MSM community members remarked on the need to develop rating systems for healthcare facilities based on the experiences of MSM patients. Health service rating tools could assess MSM patients’ general appraisals of HCP skills as well as patient access to specific services such as anal STI screening:

There are praises we give out there about clinics. Without that, peers (MSM) won’t know about X (a MSM friendly health facility). (MSM, 26, Christian, unemployed, sec school)

According to the CASCOS, other changes must also be documented such as the emergence of MSM support groups led by trained HCPs:

We never used to have MSM support groups, but now we do. And the people manning these support groups are the nurses and some of the clinical officers who underwent the sensitivity training. They seem to be comfortable interacting with MSM and talking about HIV-MSM related issues. (CASC0, 45, Muslim, female)

Collecting information about MSM services in implementation and reporting tools thus allow for enhanced documentation of patient outcomes, which is essential for monitoring the ongoing effectiveness of HIV programmes for key risk populations.

Discussion

Lessons learned related to the general positive effect of training on HCP attitudes and competencies towards serving MSM patients and the need for additional work on operational policies at the national and decentralized levels. The two-year post-assessment was able to monitor progress, such as HCPs’ competence to openly talk about HIV- and MSM-specific issues, coupled with non-judgmental attitudes, and to also outline key actions necessary to ensure supportive policies, such as governmental catalysts recommending MSM pre-service and in-service curricula, and MSM non-discriminative policies throughout the public health system. Sustained impact of the MAST programme will rely on deliberate efforts and a continued collaborative approach to providing healthcare for MSM, based on the premise that teamwork among HCPs and learning from others were central to creating the conditions for culturally competent services. Institutional capacity building and sustainability were marked as essential to foster policy and programme development on a lasting basis, as were regular assessments (such as these) to continuously inform plans related to improvement.

A remaining challenge for HCPs is the confusion about developing and maintaining professional attitudes towards all patients, despite criminal laws making same-sex behaviour illegal in Kenya. Consistent with the findings on MSM health services in Malawi by Wirtz et al. [27], HCPs and CASCOS in coastal Kenya described a tension between the criminalization of same-sex practices versus the professional imperative to provide patient care and risk-reduction counselling. While it is unlikely that punitive laws will change in the near future, clearer guidance on this legal conflict should be provided by national programming initiatives. If non-judgmental health-care services for MSM are to become the standard of care, continuous reinforcement from higher authorities is needed to support appropriate service implementation by HCPs. Moreover, to promote tolerance and inclusion of MSM in the broader society, MSM sensitivity training must be provided to other sectors including law enforcement, religious institutions and local government. In addition, the results of this study underscore the importance of combining processes such as extension of sexual health education for HCPs, expansion of clinical guidelines and greater inclusion of MSM behaviour characteristics in reporting tools as addressed in a recently developed model (SPEND) by Ross et al. [28].

A systematic review of the published literature on MSM in Africa since 2011 identified remarkably few studies on community engagement with MSM [29]. How often, with whom and what precisely constitutes MSM community engagement should be a topic of research to enhance healthcare for MSM [29]. A range of strategies to raise awareness and sensitize the wider community about MSM experiences is also needed. A recent study from coastal Kenya suggests that watching a brief film about the experiences of MSM and participation in a follow-up discussion contributed to attitude change towards MSM in a diverse community sample [30]. Efforts to increase experiential learning, guided support and positive intergroup contact can bolster the community context for improved health and wellness among MSM.

Limitations to this research must be acknowledged. First, participants in this sample might have been prone to socially desirable reporting about their attitudes and experiences related to health services for MSM. In addition, selection bias of HCPs might have influenced findings, as HCPs were included on basis of their experiences serving MSM patients and they may have had favourable attitudes towards MSM. The same applies for the sample of MSM participants as selected; MSM CBD members might not have represented the views of MSM who are not members of a CBD. Furthermore, the findings reported here do not permit temporal, causal or quantitative inferences. Finally, because this study took place in a region where MSM research has occurred for over nine years, findings might not be generalizable in other areas in Kenya or SSA.

Conclusions

Incremental improvements in the ability to offer MSM health-care services were reported two years post-intervention.
Stigma towards MSM was still prevalent according to this diverse range of participants, and enhanced rollout of MSM sensitivity training was recommended for various cadres of healthcare staff, most notably superiors and managers, as well as young male HCPs. Interaction with the broader community was noted as a strategy to enhance general social inclusion of MSM. CASCOs advocated for reporting tools inclusive of MSM populations in terms of programme implementation highlighting the need for updated national guidelines to manage ANTs. Across groups, participants felt that the national government should endorse MSM sensitivity training in order for HCPs to provide appropriate professional conduct in healthcare and HIV services.

Authors’ affiliations

Competing interests
The authors declare that they have no competing interests.

Authors’ contributions
EMvdE, EG, AO, HM, SMS, ADS, EJS and DO contributed significantly to the study design. EMvdE and EJS conceived the study. BK conducted the FGIs and interviews. EMvdE and BK analyzed the data. EMvdE, DO, SMS and EJS discussed full texts. EMvdE drafted the manuscript. DO, SMS and ADS critically edited the manuscript. All authors read and approved the manuscript. DO is the guarantor of the paper.

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References
Chapter 6


Chapter 7

Emerging Themes for Sensitivity Training Modules of African Health Care Workers Attending to Men who Have Sex with Men: A Systematic Review

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Chapter 7

ABSTRACT
Sensitivity training of front-line African health care workers (HCWs) attending to men who have sex with men (MSM) is actively promoted through national HIV prevention programming in Kenya. Over 970 Kenyan-based HCWs have completed an eight-module online training free of charge (http://www.marps-africa.org) since its creation in 2013. Before updating these modules, we performed a systematic review of published literature of MSM studies conducted in sub-Saharan Africa (sSA) in the period 2011–2014, to investigate if recent studies provided important new knowledge currently not addressed in existing online modules; contested information of existing module topics; or added depth to topics covered already. We used learning objectives of the eight existing modules to categorise data from the literature. If data could not be categorised, new modules were suggested. Our review identified 142 MSM studies with data from sSA, including 34 studies requiring module updates, one study contesting current content, and 107 studies reinforcing existing module content. ART adherence and community engagement were identified as new modules. Recent MSM studies conducted in sSA provided new knowledge, contested existing information, and identified new areas of MSM service needs currently unaddressed in the online training.

Keywords: ART adherence, Community engagement, Healthcare worker, MSM sensitivity training, Sub-Saharan Africa

Introduction
Men who have sex with men (MSM) in sub-Saharan Africa (sSA) are at high risk for HIV and other sexually transmitted infections (STIs) and require urgent interventions to reduce acquisition and transmission. However, as a result of discriminatory legislation, many African countries do not recognise or address the needs of MSM in the context of national HIV/AIDS prevention and control programmes. Grass roots initiatives in several African countries, and stakeholder consultations, have started to shape comprehensive services and HIV preventive research agenda for MSM. Al though WHO recently provided consolidated guidelines on the Prevention, Diagnosis, Treatment and Care of Key Populations,
acceptance of MSM as equal citizens entitled to quality healthcare and prevention information is still in jeopardy in most African countries. As MSM are stigmatised in society and in healthcare facilities, they face substantial barriers to accessing healthcare services, and care seeking is often delayed. Front-line healthcare workers (HCWs) in sSA do not receive basic training on how to counsel MSM clients, or diagnose and treat rectal STIs. In Kenya, HCWs felt that they must be equipped with the knowledge and skills necessary to provide such services. Until recently, training guides providing information about MSM specifically addressing the needs of front-line HCWs in Africa were rare. In 2009, the Desmond Tutu HIV Foundation in South Africa

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Emerging themes for MSM sensitivity training in Africa

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181 HIV incidence: 10.9 (95% CI: 7.4 – 3.9). (A)

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ities for group reflection empowered HCWs to discuss MSM behaviour and anal sex. HCWs acknowledged the existence of MSM in their clinics and recognised their own professional responsibility to provide appropriate and effective services. Challenges in the context of broader societal homophobia called for the urgent scale up of such culturally adapted and specialised training programmes for African HCWs.11

As the training guide was last updated in 2011 and many studies in African MSM have since been published, we set out to assess if newly published literature on MSM and HIV prevention and care in sSA would require a training guide update. Additionally, by using the eight existing modules of the training guide as a framework we expected to identify new areas of MSM services needs that were unaddressed in the current training guide.

Methods

We conducted a comprehensive search in PubMed of peer-reviewed MSM studies conducted in sSA and published from January 2011 to March 2014. We used specific search terms and Medical Subject Headings (MeSH) such as ‘Africa South of the Sahara’, ‘sub-Saharan Africa’, ‘men who have sex with men’, ‘homosexuality, male’, ‘gay’ and ‘homosexual’. Figure 1 summarises the search and screening process. For an overview of the full electronic search see Supplementary File 1.

The full search included papers published between 1 January 2011 and 25 March 2014. Learning outcomes and objectives of the existing eight modules in the training guide are summarised in Box 1 and constitute our framework against which studies

MSM systematic literature review

and the Kenya Medical Research Institute in Kenya, in collaboration with the University of Oxford, developed the manual MSM: An Introductory Guide for Health Workers in Africa, based on expert opinion and the limited information available from African MSM studies. This manual was updated in 2011, using literature of MSM studies in sSA available until 2011. The revision received input from external reviewers who were experienced with MSM studies and services in sSA. Soon after revision of the manual in 2011, WHO released guidelines on the Prevention and Treatment of HIV and other Sexually Transmitted Infections among MSM and Transgender People.17

The training comprises eight modules: MSM and HIV in sub-Saharan Africa; Homophobia: stigma and its effects; Sexual identity, coming out and disclosure; Anal sex and common sexual practices; HIV and STIs; Condom and lubricant use; Mental health: anxiety, depression and substance use, and Risk-reduction counselling. The online version (http://www.marps-africa.org) of the second edition is frequently used in Kenya and over 970 HCWs, including over 420 government HCWs, have completed it, either through self-training or facilitated learning (E. Sanders, personal communication).

The effect of this training programme upon HCW knowledge and attitudes was evaluated in 71 Kenyan HCWs in 2012, and showed significant improvements in knowledge of MSM sexual health issues and reduced homophobic attitudes up to three months after the training.18 Didactic content as well as opportunities for group reflection empowered HCWs to discuss MSM behaviour and anal sex. HCWs acknowledged the existence of MSM in their clinics and recognised their own professional responsibility to provide appropriate and effective services. Challenges in the context of broader societal homophobia called for the urgent scale up of such culturally adapted and specialised training programmes for African HCWs.11

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MSM systematic literature review

Figure 1. Search and screening process of PubMed search, period 1 Jan 2011 to 25 March 2014. MSM: men who have sex with men; sSA: sub-Saharan Africa.
Emerging themes for MSM sensitivity training in Africa

Box 1. Review framework: learning outcomes and objectives of existing training modules, topics identified in literature requiring module updates, and new topics identified requiring new modules

<table>
<thead>
<tr>
<th>Module title, and learning outcome and objectives</th>
<th>Existing topics requiring update</th>
</tr>
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| Module 1: MSM and HIV in sub-Saharan Africa | 1. Defining MSM  
2. MSM and HIV risks in sub-Saharan Africa  
3. Epidemiology of HIV in MSM in sub-Saharan Africa  
4. Health service accessibility and health seeking behaviour of MSM |
| | Group sex  
HIV-1 incidence estimates  
Dual epidemics  
MSM population size estimation  
Frequency of same-sex behaviour |
| Module 2: Homophobia: stigma and its effects | 1. Defining stigma  
2. Defining homophobia  
3. The effect of stigma on MSM and their health |
| | Internalised homophobia  
Stigma, fear, and health care seeking  
Secondary stigma of HCW  
Training of HCW |
| Module 3: Sexual identity, coming out and disclosure | 1. Defining sexual orientation, sexual identity, and sexual behaviour  
2. Sexual behaviour of MSM  
3. Coming out process  
4. Prejudice, discrimination and stereotypes |
| | Gay identity  
MSW and anal sex with women  
Methods of risk assessment |
| Module 4: Anal sex and common sexual practices | 1. Defining anal sex and role taking  
2. Other sexual practices of MSM  
3. Risk levels of different sexual practices  
4. Discussing anal sex with clients |
| | Multi-drug resistance of NG  
WHO presumptive treatment recommendation for asymptomatic rectal infections  
Acceptability of PEP  
Adherence to PEP  
PMP for specific risk groups  
Health care seeking during AHF  
Clinical predictors of AHF |
| Module 5: HIV and STIs | 1. Common STIs amongst MSM  
2. Discussing STIs with clients  
3. STI transmission  
4. Treating STIs  
5. Link between STIs and HIV infection  
6. PEP and PEP for HIV  
7. Acute HIV infection and early access to HIV care |
| | Water-based lubricants and acquisition of HIV |
| Module 6: Condom and lubricant use | 1. Effectiveness of condoms for preventing HIV and STIs  
2. Male and female condoms  
3. Lubricants and their effect on the male latex condom  
4. Tailored condom promotion messages for MSM |
| | Water-based lubricants and acquisition of HIV |
| Module 7: Mental health: anxiety, depression and substance abuse | 1. Defining anxiety and depression  
2. Symptoms and signs |
| | Water-based lubricants and acquisition of HIV |

Continued
were assessed. To fulfill the inclusion criteria, studies were screened and evaluated to determine whether they: (A) provide important knowledge currently not addressed in existing modules; (B) challenge contents of existing modules; and (C) add depth to a topic covered already. If important new information emerged that was not covered in the eight existing modules, suggestions for new modules to cover this information were made.

It was agreed that studies classified under categories A and B would require a training guide revision, and that revisions related to those studies classified under category C would be discretionary.

Two independent reviewers (MD and EVdE) evaluated each citation for inclusion and scored citations according to the three categories. First, titles and abstracts were screened to make an initial categorization according to module topics. Then, all full texts articles were reviewed by the two independent reviewers. The final lists of citations provided for inclusion by the two reviewers were compared, and discrepancies between them were resolved by discussion with a third reviewer (EJS).

Results

We identified 192 published papers. After screening the abstracts, 50 studies were excluded (i.e., studies not conducted in SSA and studies not conducted with MSM populations); 142 full text articles met our framework criteria for this review. These included 34 articles in category A, one article in category B, and 107 articles in category C (Supplementary File 2). Table 1 presents the learning objectives of the existing modules, module topics requiring updates and new module topics identified. Table 1 summarises results of studies that will be used for module updates. These results are discussed below:

Module 1: MSM and HIV in sub-Saharan Africa

Module 1 includes learning objectives on ‘MSM and HIV risks’ and the ‘epidemiology of HIV in MSM’, but does not mention the size of MSM populations in SSA, HIV-1 incidence estimates among MSM in SSA, or that group sex is an independent predictor of HIV-1 acquisition, nor the extent to which MSM act as a bridging population of HIV transmission (Box 1). Two studies from Zanzibar and Kenya estimated that about 1-2% of the general male population has sex with other men.15,16 A large household survey conducted in South Africa found 5.4% (94/1705) of adult men reporting any consensual activity with another man in their lifetime, and 1.8% (28/1705) reported ever having had anal sex with a man.17

Four studies estimated the HIV-1 incidence among MSM in SSA. These include three studies conducted in Kenya from two cohort sites in the period 2006-2012, and one repeated cross-sectional pilot study performed in Senegal in 2013.16,17 The Kenyan HIV-1 incidence estimates range from 8.6-10.9%, and both populations included substantial numbers of male sex workers (MSWs).18,20,21 The Senegalese HIV-1 incidence estimate was 16%, but participation in sex work was not recorded.16,17 A remarkable finding is the stratification of HIV-1 incidence by sexual orientation in coastal
<table>
<thead>
<tr>
<th>First author</th>
<th>Year</th>
<th>Journal</th>
<th>Country of study</th>
<th>Type of study</th>
<th>n</th>
<th>New knowledge</th>
<th>Challenging content</th>
<th>Module updates</th>
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<tr>
<td>Peris-Grall</td>
<td>2012</td>
<td>J Acquir Immune Def Syndr</td>
<td>South Africa</td>
<td>Cohort</td>
<td>73</td>
<td>HIV incidence</td>
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<tr>
<td>Drama</td>
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<td>J Int AIDS Soc Senegal</td>
<td>Senegal</td>
<td>Repeated cross-sectional (quantitative)</td>
<td>40</td>
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<td>Dunkle</td>
<td>2013</td>
<td>Ros Med</td>
<td>South Africa</td>
<td>Cross-sectional (quantitative)</td>
<td>1705</td>
<td>HIV incidence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nalapane</td>
<td>2013</td>
<td>AIDS Res Hum Retravires</td>
<td>Senegal</td>
<td>Cross-sectional (phylogenetic analyses)</td>
<td>97</td>
<td>High prevalence</td>
<td>Subtype C</td>
<td>HIV incidence</td>
</tr>
<tr>
<td>Okoli</td>
<td>2013</td>
<td>Sex Trans Inf Kenya</td>
<td>Kenya</td>
<td>Size estimate</td>
<td>NR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sanderdyck</td>
<td>2013</td>
<td>AIDS Res Hum Retravires</td>
<td>Kenya</td>
<td>Cohort</td>
<td>449</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bezemer</td>
<td>2014</td>
<td>AIDS Res Hum Retravires</td>
<td>Kenya</td>
<td>Cross-sectional (phylogenetic analyses)</td>
<td>84</td>
<td>HIV incidence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Khalifa</td>
<td>2014</td>
<td>AIDS Res Hum Retravires</td>
<td>Zanzibar (Tanzania)</td>
<td>Size estimate</td>
<td>NR</td>
<td></td>
<td></td>
<td></td>
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<td>McHerron</td>
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<td>Sex Trans Inf Kenya</td>
<td>Kenya</td>
<td>Cohort</td>
<td>181</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Roy</td>
<td>2011</td>
<td>Module 2</td>
<td>Tanzania</td>
<td>Cross-sectional (quantitative)</td>
<td>527</td>
<td>MSM incidence</td>
<td></td>
<td></td>
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<tr>
<td>Adetayo</td>
<td>2012</td>
<td>Afr J Reprod Health</td>
<td>Nigeria</td>
<td>Cross-sectional (quantitative)</td>
<td>1125</td>
<td>HIV incidence</td>
<td></td>
<td></td>
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<tr>
<td>Vandero Elia</td>
<td>2013</td>
<td>J Int AIDS Soc</td>
<td>Kenya</td>
<td>Reported cross-sectional (quantitative)</td>
<td>74/71</td>
<td>HIV incidence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vandero Elia</td>
<td>2013</td>
<td>J Int AIDS Soc</td>
<td>Kenya</td>
<td>Qualitative (IDIs)</td>
<td>74</td>
<td>HIV incidence</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Continued.
## Table 1. Continued

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<th>Year</th>
<th>Journal</th>
<th>Country of study</th>
<th>Type of study</th>
<th>n</th>
<th>New knowledge (A) or challenging content (B) requiring module updates</th>
</tr>
</thead>
</table>
| Momeni²⁰     | 2014 | *J. Int. Afr.* | Tanzania         | Cross-sectional (quantitative) | 179/195 | GMW frequently engage in heterosexual anal intercourse: 65.7% (88/136) with female clients and 6-4.9% (3/15) with non-paying female partners (A)  
GMW interviewed by AGHS were more likely to self-identify as homosexual (odds ratio [OR] 3.9, 95% CI 1.2-11.8), to report multiple female partners (OR 7.2, 95% CI 1.5-38.0), and sex with women (OR 3.9, 95% CI 1.7-9.2), unprotected anal sex with women (OR 2.1, 95% CI 1.1-4.1), and STI symptoms (OR 2.9, 95% CI 1.2-7.0) compared to face-to-face interview methods. (A) |
| Mutua³⁶      | 2012 | *PLoS One.* | Kenya            | Case series     | 67   | Adherence to daily dosing PrEP regimens may be better than adherence to other regimens in a phase I trial of 4-month duration. (A)  
Two multi-drug resistant NT isolates described in GMW. (A)  
The majority (69%) of potential user groups (GMW, SDC, FSW, young women, and IDU) are willing to use PrEP. (A) |
| Lewis³³      | 2013 | *AIDS Behav.* | South Africa     | Cohort report   | 2    | None                                                                |
| Van der Elst³⁴ | 2013 | *AIDS Behav.* | Kenya            | Qualitative (FGDs / IDIs) | 51   | None                                                                |
| Waldman³⁵    | 2013 | *AIDS Behav.* | Kenya            | Cohort          | 64.1 | Revealed, symptoms (STI) fatigue, age 38-29 years, and discordant HIV test results were independent predictors of acute and early HIV-1 acquisition in high risk GMW. (A)  
Number needed to treat in WHO presumptive treatment recommendation for one asymptomatic NG/CT infection in GMW meeting criteria is 4. (A) |
| Sanders³⁷    | 2014 | *Sex Transm. Infect.* | Kenya          | Cohort          | 14.7 | None                                                                |

Continued
<table>
<thead>
<tr>
<th>First author</th>
<th>Year</th>
<th>Journal</th>
<th>Country of study</th>
<th>Type of study</th>
<th>n</th>
<th>New knowledge (A) or challenging content (B) requiring module updates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buchbinder</td>
<td>2014</td>
<td>Lancet Infect Dis</td>
<td>Brazil, Ecuador, Peru, South Africa, Thailand, USA</td>
<td>RCT</td>
<td>2499</td>
<td>RCT for unprotected RAI for HIV acquisition in MSM and transgender women was high (64%) and RHI for PrEP to prevent infection was relatively low (52%) (A)</td>
</tr>
<tr>
<td>Robin</td>
<td>2014</td>
<td>S Afr Med J</td>
<td>South Africa</td>
<td>Cross-sectional and qualitative analysis</td>
<td>NR</td>
<td>Many of the water-based sexual lubricants available in South Africa are hypoallergenic (B)</td>
</tr>
<tr>
<td>Mixdowski</td>
<td>2013</td>
<td>J Acquir Immune Def Sci</td>
<td>Cameroon</td>
<td>Cross-sectional and qualitative (OSA / RET)</td>
<td>45</td>
<td>Religious MSM reported to lie in a symptom management of guilt condition (A)</td>
</tr>
<tr>
<td>Tuckier</td>
<td>2013</td>
<td>AIDS Care</td>
<td>South Africa</td>
<td>Cross-sectional (quantitative)</td>
<td>316</td>
<td>56.6% of MSM had symptoms of at least mild depression, associated with increased rates of unprotected AI (aOR 2.54, 95% CI 1.56–4.15) (A)</td>
</tr>
<tr>
<td>Mahmoud</td>
<td>2014</td>
<td>J Int AIDS Soc Senegal</td>
<td>South Africa</td>
<td>Cross-sectional (quantitative)</td>
<td>22</td>
<td>Young, low-income MSM from religiously and culturally conservative background are especially vulnerable for minority stress (A)</td>
</tr>
<tr>
<td>Stephensohn</td>
<td>2013</td>
<td>AIDS Care</td>
<td>South Africa</td>
<td>Cross-sectional (quantitative)</td>
<td>449</td>
<td>89.3% (404/456) of MSM reported willingness to use couples-based HIV counselling and testing (A)</td>
</tr>
<tr>
<td>Stephensohn</td>
<td>2013</td>
<td>AIDS Behav</td>
<td>South Africa</td>
<td>Qualitative (FGDs / IDIs)</td>
<td>42/29</td>
<td>High levels of willingness to use couples-based HIV counselling and testing among MSM (A)</td>
</tr>
<tr>
<td>Graveman</td>
<td>2013</td>
<td>AIDS Behav</td>
<td>Kenya</td>
<td>Cohort</td>
<td>22</td>
<td>46% (20/0%) of MSM had poor adherence to ART (91%) and MSM had a robust on-treatment weight gain when compared to women (adjusted difference -5.5 kg/year) (A)</td>
</tr>
<tr>
<td>Wext</td>
<td>2013</td>
<td>Int J STD AIDS</td>
<td>Peru, Ukraine, Kenya, Thailand</td>
<td>Modelling</td>
<td>NR</td>
<td>Expression of ART among adults in combination with MSM interventions (e.g. outreach) may result in a 25% reduction in new infections among Kenyan MSM (A)</td>
</tr>
<tr>
<td>Ghebreyesus</td>
<td>2012</td>
<td>Sex Trans Inf</td>
<td>Kenya</td>
<td>Case series</td>
<td>425 / 442</td>
<td>Exposure to peer education (aOR 1.9, 95% CI 1.29–2.92) and ever having been counselled or tested for HIV (aOR 1.71, 95% CI 1.20–2.46) were associated with consistent condom use (A)</td>
</tr>
<tr>
<td>Drame</td>
<td>2013</td>
<td>Cull Health Dis</td>
<td>Senegal</td>
<td>Qualitative (OSA) and literature review</td>
<td>≤70</td>
<td>The importance of decentralisation and MSM organisations in relation to HIV prevention and treatment programmes (A)</td>
</tr>
</tbody>
</table>

ACI = audio computer assisted self-interview; aIRR = adjusted incidence rate ratio; aOR = adjusted odds ratio; ART = antiretroviral therapy; CI = Confidence interval; CT = Chlamydia trachomatis; CIP = cross-infection prevention; CIR = cross-infection risk; CTI = Chlamydia trachomatis; CSW = commercial sex worker; CSD = commercial sex work; CVD = country validation study; CTI = Chlamydia trachomatis; DDI = direct detection of infection; DHI = decentralised HIV testing; FGD = focus group discussion; FSW = female sex worker; HTV = healthcare worker; IDI = in-depth interview; IDU = injection drug user; IQR = interval; MSM = men who have sex with men; MMH = men who have sex with men and women; MSME = men who exclusively have sex with men; MSW = men who have sex with women; NCR = non-commercial sex work; NHA = non-humanitarian aid; NGO = non-governmental organisation; NR = non-randomised intervention; OS = osce; PCP = pre-exposure prophylaxis; PI = person-year; RAI = receptive anal intercourse; RET = randomised controlled trial; SDC = heterosexual men who have sex with men; SDA = sub-Saharan Africa.
Emerging themes for MSM sensitivity training in Africa

Results of the systematic review of MSM studies in SSA providing new knowledge (A) to, or challenging content (B) currently not addressed in ‘introductory guide for health workers in Africa’ First author Year Journal

Kenya: 5.8 per 100 person-years (PY) in men who had sex with men and women (MSMW), and 35.2 per 100 PY in men who had sex with men exclusively (MSME). Group sex was reported by 16.1% of MSM at cohort enrolment and was an independent predictor of HIV-1 acquisition in this cohort. Two phylogeny studies conducted in Kenya and Senegal are the first studies to suggest the existence of ‘dual epidemics’ in which HIV-1 transmission in MSM populations appear to be largely separate from ongoing HIV-1 transmission in the general heterosexual population.

Module 2: Homophobia: stigma and its effect

Module 2 contains topics on MSM and stigma, with learning objectives on ‘the effect of stigma on MSM and their health’, and ‘supporting stigmatised clients’, but includes no quantitative data on fear of healthcare seeking as a result of discrimination, information on internalised homophobia, or the effect of MSM sensitivity training on HCWs. Four studies were identified to provide new knowledge to the myriad of factors that influence stigma and its effect in SSA. A survey performed in Nigeria found high levels of internalised homophobia among MSM, defined as ‘self-hated and shame resulting from negative stereotypes, beliefs and prejudice about homosexuality leading to devaluation and internal conflicts’. Men who self-identified as bisexual and men who were HIV positive were twice as likely to experience internalised homophobia. A study conducted in Malawi, Namibia and Botswana showed strong associations between MSM’s experiences of discrimination and fear of seeking health care services. A two-day training intervention (i.e., the online course discussed in this paper) addressing knowledge and attitudes among Kenyan HCWs demonstrated a reduction in HCW homophobic sentiment, and significant sustained improvements in knowledge through the intervention. Qualitative data from Kenya revealed that HCWs who had undergone the MSM sensitivity training experienced secondary stigma from HCW colleagues who had not been trained.

Module 3: Sexual identity and coming out

Module 3 provides information on sexual orientation, sexual identity and sexual behaviour, but no information on gay identity is included. Two studies contributed to a deeper understanding of sexual identity and risk behaviours during sexual encounters between men. In the first study, Moon et al. described role taking in anal intercourse between MSM in Dar es Salaam. Role taking was seen as a fixed and enduring characteristic of a person, rather than a variable role or position in sexual intercourse. For the insertive partner, anal penetration was seen as a desirable practice irrespective of whether the partner was male or female. These authors concluded that gay identity in Africa may be a function of the ‘Western’ concept of gay identity. In the second study, Lane et al. described how South African MSM who self-identified as gay were over two times more likely to be HIV positive compared to bisexual-identified MSM, demonstrating the particular vulnerability of this subgroup of MSM.

Module 4: Anal sex and common sexual practices

Module 4 contains learning objectives on ‘anal sex and role taking’ and ‘different sexual practices’, but does not discuss frequency of heterosexual anal sex among MSM and their female partners or different methods to assess risk behaviours. A study conducted among Kenyan MSMs found unexpectedly high levels of self-reported anal sex with women: 65.7% (88/134) had recently had sex with a female client, and 62.9% (108/172) had recently had sex with a non-paying female partner. For risk assessment, Adebowo et al. demonstrated that MSM assessed by audio computer assisted self-interview (ACASI) were more likely to report high risk sexual behaviour and to self-identify as homosexual than those assessed by face-to-face interviewing.

Module 5: HIV and STIs

Acute and early HIV infection

Module 5 includes very limited information on acute HIV-1 infection, and no information on healthcare seeking around the time of HIV-1 seroconversion. While little is known about healthcare seeking around the time of HIV seroconversion in SSA, two studies from coastal Kenya added new information. One study revealed that 69% (50/72) of adults (of which most men were MSM) seek urgent healthcare when acquiring HIV infection. These individuals are often presumptively treated for malaria. A second study from coastal Kenya showed that six characteristics of a risk screening score (i.e., fever, diarrhoea, symptomatic STI, fatigue, age 18–29 years and discordant HIV test results) were independent predictors of acute and early HIV-1 acquisition in high risk MSM.

Pre-exposure prophylaxis

Module 5 includes very little information on the use of Pre-exposure prophylaxis (PrEP). Since 2011, four studies, including two conducted in Kenya, were published on the effectiveness, usage, and acceptability of PrEP in SSA. A phase I randomised controlled trial (RCT) assessing PrEP adherence in MSM and female sex workers (FSWs) over four months demonstrated that intermittent PrEP regimens, particularly cosely-dependent dosing, were more difficult to adhere to than daily dosing regimens. Conducting qualitative assessments of selected MSM and FSWs from the aforementioned trial, Van der Elst et al. reported high PrEP-acceptability among Kenyan MSM and FSWs, but described challenges in adherence and use. Acceptability of PrEP was also reported to be high among potential user groups (including MSM) in a large survey conducted in seven countries. A secondary analysis of a phase III multi-country RCT of PrEP efficacy displayed how PrEP would be most effective at the population level if targeted toward only those MSM and transgender women who report unprotected receptive anal intercourse.

Other STIs

Module 5 provides very limited information on what HCWs should do when MSM present with an STI, including treatment recommendations for urethral or rectal discharge. The emergence of drug-resistant Neisseria gonorrhoeae among MSM is also not mentioned. One case report from South Africa reported multidrug-resistant Neisseria gonorrhoeae isolates in two MSM. A study in coastal Kenya evaluated the value of the WHO recommendation for presumptive treatment of Neisseria gonorrhoeae and Chlamydia
Chapter 7

New module: MSM and ART

The training manual does not describe challenges of antiretroviral therapy (ART) initiation and adherence among MSM in a research clinic-based study involving FSWs, heterosexual men and MSM conducted in coastal Kenya. 40% (102/255) of MSM had poor adherence to ART (95%) vs. 29% (27/22) of heterosexual men and 12% (3/26) of women. 46 In addition, MSM had less robust on-treatment weight gain than women. Demonstrating the importance of ART, a modelling analysis in Kenya showed that the expansion of ART among adults would have an evident impact on the MSM population.

In combination with other interventions targeting MSM (e.g., ART initiation and adherence among MSM in a research clinic-based study involving FSWs, heterosexual men and MSM conducted in coastal Kenya. 40% (102/255) of MSM had poor adherence to ART (95%) vs. 29% (27/22) of heterosexual men and 12% (3/26) of women. 46 In addition, MSM had less robust on-treatment weight gain than women. Demonstrating the importance of ART, a modelling analysis in Kenya showed that the expansion of ART among adults would have an evident impact on the MSM population.

Discussion

This review of African MSM studies published in the period 2011–2014 identified 142 studies, of which 35 provided new data requiring an update of the online training manual ‘MSM: An Introductory Guide for Health Workers in Africa’. All eight existing modules would benefit from being updated. In addition, two areas—ART adherence and community engagement—emerged as new modules needed to update the training guide.

To our knowledge, only one study has ever assessed clinical outcomes of ART in HIV-positive MSM living in Africa. 48 The findings of this study suggest that focused approaches to increase ART adherence among MSM should be developed. We are aware of at least one such intervention that is currently in development.

Community engagement, under the principles respect, protect, and fulfil, including partnership between peer educators and HCWs and other community stakeholders to facilitate a safer environment for MSM to access healthcare, is an important area in its own right, and deserves recognition and involvement of local LGBT organisations.

New WHO guidelines on the Prevention, Diagnosis, Treatment, and Care of Key Populations, 49 and an online curriculum for health-care providers developed by the Global Forum on MSM and HIV (MSMForum) and Johns Hopkins University (http://www.msmforum.org/promotinghealth) (accessed 17 December 2014) were both released in advance of the AIDS conference in July 2014, Melbourne, Australia. Both recommend providing PEP to MSM as a component of a comprehensive HIV prevention package, including increased availability of condoms and lubricants, regular HIV testing, STI screening, and ART initiation at CD4 counts <500 cells/μl or immediately for specific conditions (i.e., a seronegative partner, active TB disease, hepatitis B virus infection with severe chronic liver disease). Kenya has adopted the recently revised WHO recommendation for ART initiation, 50 but will consider the provision of PEP to MSM only in the context of research. 51

While national HIV prevention strategies addressing MSM are an essential step towards improving access to care for MSM, HCWs experience tension if same sex practices remain criminalised. 52 In Malawi, service providers reported concerns of adverse repercussions related to the provision of services to the same sex sexual practices. 53 In coastal Kenya, HCWs who had taken the online MSM training experienced secondary stigma from
Emerging themes for MSM sensitivity training in Africa

Table 1. Results of the systematic review of MSM studies in SSA providing new knowledge (A) to, or challenging content (B) currently not addressed in

Men who have sex with men; an,
period Jan 2011 to 25 March 2014

New knowledge (A) or challenging content (B) requiring module updates

Module 1: MSM and HIV in sub-Saharan Africa

2012 J Acquir Immune Cohort
73 HIV incidence for Nair obi, Kenya 2006 – 5.4 – 27.4)/100 PY (MSM). (A) reported mutual masturbation; 1.8% (30/1705) thigh sex; (28/1705) did not specify. (A)

2013 AIDS Res Hum Retroviruses
Oka l 2013 Sex Trans Inf Kenya methods) (range: 10 000 – 449 Overall HIV incidence: 8.6 (95% CI 6.7 – 4.2 – 52.1)/100 23

2014 AIDS Behav
NR Estimated size for MSM population in Zanzibar: 0.9% of men 181 HIV incidence: 10.9 (95% CI: 7.4 – 21%) and HIV infection (aOR 1.8, 95% 1.2 – 52.1) among HCW and 80% of health care providers knew that gay or bisexual men, sex workers, and people who inject drugs were at higher risk of HIV. (A)

Conclusions
Recent studies on MSM conducted in SSA provided new knowledge, contested existing information, and identified ARF adherence and community engagement involving MSM as new topics for training. Given that the online training programme is regularly used, with over 970 Kenyan HCWs graduating since 2011, and is actively promoted by the National STI and AIDS Control Programme (NASCOP) in Kenya (http://nascop.or.ke), an update of training materials would be beneficial.

Supplementary data
Supplementary data are available at International Health Online (http://inthealth.oxfordjournals.org/).

References


36. Lewis DA, Srinussen C, Muller EE et al. Phenotypic and genetic characterization of the two first cases of extended-spectrum- 


39. Tucker A, Litt J, de Wardt G et al. An exploration into the role of depression and self-efficacy on township men who have sex with men’s ability to engage in safer sexual practices. AIDS Care 2013;25: 
1227-35.


42. Stephenson R, Rentsch C, Sullivan P. High levels of acceptability of couples-based HIV testing among MSM in South Africa. AIDS Care 2012;24:529-35.


Emerging themes for MSM sensitivity training in Africa

Table 1. Results of the systematic review of MSM studies in SSA providing new knowledge (A) to, or challenging content (B) currently not addressed in ‘introductory guide for health workers in Africa

<table>
<thead>
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<th>First author</th>
<th>Year</th>
<th>Journal</th>
<th>Country of study</th>
<th>Type of study</th>
<th>Module</th>
<th>New knowledge (A) or challenging content (B) requiring further action</th>
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<tr>
<td>Price</td>
<td>2012</td>
<td>J Acquir Immune HIV incidence for Nairobi, Kenya</td>
<td>2006</td>
<td>–</td>
<td>–</td>
<td>17.5)/100 PY (MSM). (A)</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>J Int AIDS Soc Senegal</td>
<td>2013</td>
<td>Repeated cross-sectional (quantitative)</td>
<td>27.4)/100 PY (MSM). (A)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>Plos Med</td>
<td>1705</td>
<td>Size estimation (several methods)</td>
<td>5.4% (94/1705, 95% CI 4.4–5.4). (A)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>Sex Trans Inf Kenya</td>
<td>2013</td>
<td>Size estimation (several methods)</td>
<td>22 222). (A)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>Sanders</td>
<td>2013</td>
<td>HIV transmission between MSM and heterosexual population is uncommon. (A)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Khalid</td>
<td>2014</td>
<td>Sex Trans Inf Kenya</td>
<td>2014</td>
<td>Repeated cross-sectional (quantitative)</td>
<td>10.9 (95% CI: 7.4–15.6)/100 PY (MSM). (A)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Malawi, Namibia, Zanzibar (Tanzania)</td>
<td>Size estimation (several methods)</td>
<td>NR</td>
<td>Estimated size for MSM population in Zanzibar: 0.9% of men</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Qualitative (FGDs)</td>
<td>537</td>
<td>MSM who had any interaction with healthcare had higher odds for HIV infection</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Case series</td>
<td>712</td>
<td>MSM interviewed by ACASI were more likely to self-identify as sexual (aOR 3.3, 95% CI 2.4–4.1). (A)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Case series</td>
<td>867</td>
<td>MSW frequently engage in heterosexual anal intercourse: 65.7% (88/134) with female clients and 42.9% (108/252) with young women, and IDU) are willing to use PrEP. (A)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>RCT</td>
<td>67</td>
<td>Adherence to daily dosing PrEP regimens may be better than adherence to other regimens in a phase I trial of 4 month</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Case report</td>
<td>181</td>
<td>HIV incidence: 10.9 (95% CI: 7.4–15.6)/100 PY (MSM). (A)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Case report</td>
<td>88</td>
<td>Adherence to daily dosing PrEP regimens may be better than adherence to other regimens in a phase I trial of 4 month</td>
</tr>
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MSM systematic literature review


Chapter 8

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

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ABSTRACT: This paper used qualitative methods to explore experiences of men who have sex with men and female sex workers in Nairobi and Mtwapa, Kenya, who used oral pre-exposure prophylaxis (PrEP) for HIV prevention as part of a four-month trial of safety, acceptability and adherence. Fifty-one of 72 volunteers who took part in a randomized, placebo-controlled, blinded trial that compared daily and intermittent dosage of PrEP underwent qualitative assessments after completing the trial. Analyses identified three themes: (i) acceptability of PrEP was high, i.e. side effects were experienced early in the study but diminished over time, however characteristics of pills could improve comfort and use; (ii) social impacts such as stigma, rumors, and relationship difficulties due to being perceived as HIV positive were prevalent; (iii) adherence was challenged by complexities of daily life, in particular post-coital dosing adherence suffered from alcohol use around time of sex, mobile populations, and transactional sex work. These themes resonated across dosing regimens and gender, and while most participants favored the intermittent dosing schedule, those in the intermittent group noted particular challenges in adhering to the post-coital dose. Culturally appropriate and consistent counseling addressing these issues may be critical for PrEP effectiveness.

Keywords Men who have sex with men · HIV pre-exposure prophylaxis · PrEP · Adherence · Kenya

Introduction

Pre-exposure prophylaxis (PrEP) refers to the use of antiretroviral medications (ARVs) by HIV-negative individuals to reduce risk of HIV infection, and to date, is one of the most promising strategies in the field of biomedical HIV prevention. Prophylactic use of ARVs in animal models has been shown repeatedly to reduce simian/HIV acquisition [1–4]. A phase III randomized controlled trial tested the efficacy of once-daily oral dose of emtricitabine–tenofovir (Truvada) versus placebo on HIV incidence among men and transgender women who have sex with men in Peru, Ecuador, South Africa, Brazil, Thailand, and the United States [5]. Results demonstrated a 44 % reduction in the incidence of HIV infection among participants who received PrEP. There were fewer infections among volunteers with higher
adherence to PrEP compared to those who had poor adherence, indicating the importance of following prescribed dosage schedules. Two other randomized controlled trials assessing the efficacy of PrEP in HIV-negative heterosexual men and women showed similar results. Partners in a PrEP study of 4,758 HIV-serodiscordant couples in Kenya and Uganda showed that those who took a once-daily oral dose of tenofovir demonstrated a 62% reduction in the incidence of HIV infection and those who took a once-daily dose of tenofovir in combination with emtricitabine demonstrated a 73% reduction in the incidence of HIV infection [6]. Similarly, the TDF2 study of 1,219 HIV-uninfected heterosexual males and females in Botswana showed that a once-daily dose of tenofovir and emtricitabine demonstrated a 63% reduction in the incidence of HIV infection [7].

Behavioral research can help to identify factors that might determine adherence to PrEP and therefore, drug effectiveness in real-world settings. Importantly, few studies have assessed acceptability and use of PrEP, and most are based on hypothetical scenarios presented to participants [8, 9]. Factors associated with intentions to use PrEP in a sample of men who have sex with men (MSM) in the United States included the efficacy, costs, and potential side-effects of PrEP [9]. Similar findings were observed in a study of female sex workers, male-to-female transgen-dered persons, and MSM in Peru [10]. A study of intentions to use PrEP among African American and Caucasian women in the United States found that individuals who had engaged in high risk behavior were more likely to find PrEP acceptable than those who had not [11]. Another study among truck drivers in India demonstrated that motivation to use PrEP was associated with intentions to engage in at-risk behaviors, drug efficacy, and source of information about PrEP (that is, a physician was perceived as a more legitimate source than a public service announcement) [12]. Relationship factors were also associated with improved adherence and thus, greater effectiveness. For example, partner support of PrEP use in discordant couples was understood as a function of the desire to reduce risk while preserving a partnered relationship [13]. Such intentions, however, may or may not equate to actual behavior among PrEP users.

Because PrEP represents a significant potential new addition to our arsenal of HIV prevention strategies, we need to better understand factors influencing PrEP pill-taking behavior that might determine real-world effectiveness. Little is known about acceptability and adherence to intermittent, or less than daily PrEP regimens which might be more feasible and affordable in some settings. Insight into social and behavioral factors that influence the acceptability, use of, and adherence to PrEP can inform the development of drug regimens and PrEP counseling strategies for individuals initiating a course of this prevention medication in the future. In this paper, we report on the first qualitative findings of PrEP acceptability and adherence among MSM and female sex workers who participated in a clinical trial testing safety and adherence to daily and intermittent oral PrEP regimen in Nairobi and Mtwapa, Kenya. Aims of analyses were to: (i) explore participants’ perceptions of PrEP acceptability; (ii) identify challenges associated with adherence to PrEP; (iii) examine factors that might facilitate or challenge PrEP use, such as side-effects and stigma, and (iv) offer recommendations for education and counseling targeting prospective PrEP users.

Methods

Data for this study came from a randomized, placebo-controlled blinded trial (Clinical trials.gov number NCT00971230) testing the safety, acceptability and adherence to two different dosage schedules of PrEP: daily use versus intermittent use. Intermittent use involved self-administering emtricitabine–tenofovir (Truvada) twice weekly on Mondays and Fridays, and within 2 h post-coital with a maximum of one dose per day. Qualitative approaches were used to improve understanding of the experiences in taking PrEP among at-risk populations in Kenya, a setting with a generalized HIV epidemic and an estimated national HIV prevalence of 7%. Research was conducted between October 2009 and April 2010 in two cities in Kenya, Nairobi (the capital city) and Mtwapa (a mid-size coastal town) in Kilifi District. The study was approved by ethical review boards at the Kenya Medical Research Institute, University of Oxford and Kenyatta National Hospital, Nairobi. All participants provided written informed consent for interviews and focus group discussions.

Study Population

MSM and FSW populations from existing HIV-1-at-risk cohorts in Nairobi and Kilifi, aged between 18 and 49 years, were eligible for the PrEP trial, if they were HIV-1 uninfected and reported any of the following in the past 3 months: transactional sex work, recent sexually transmitted infection (STI), or multiple episodes of unprotected vaginal or anal sex [14]. Although most sex partners of MSM were men, sex with both men and women was also reported [15]. Overall 72 volunteers were recruited into the PrEP trial across the two sites: 31 were MSM and 5 were female sex workers from Mtwapa, while 36 were MSM from Nairobi. The average age of the trial participants was 26 years (range: 18–46 years). All participants identified as Kenyan and had primary education or higher, with three participants reporting tertiary education. Across both sites,
47% of all PrEP participants reported drinking alcohol before sex, 67% reported transactional sex and 64% reported having receptive anal sex in the 28 days prior to PrEP trial enrolment [14].

The selection of volunteers for the qualitative component of the study was based on post-trial evaluation of completion and adherence rates i.e. a proportion of volunteers that took at least 80% of the expected doses of the investigational product, a proportion of volunteers that completed the trial with moderate adherence rates (between 50 and 80%), a proportion of volunteers with low adherence (less than 50%), and volunteers who terminated the study early. Volunteers who could not be reached because of change in circumstances e.g. outmigration and custody, were considered lost to follow up (LTF).

Clinical Procedures
At enrollment to the PrEP trial, participants completed face-to-face interviews using standardized questionnaires to record socio-demographic information, recent sexual behavior, and health status. A standardized physical exam was performed, and specimens were collected for STI screening. All participants received HIV prevention counseling, condoms and lubricants, basic information about PrEP adherence, potential side effects, and the dosage schedule. These procedures were repeated at monthly follow-up visits. Seventy-two eligible cohort participants were randomly assigned to either active drug or an identical placebo pill in one of two dosage conditions: daily or intermittent (one tablet taken every Monday and Friday and again within 2 hours after sexual intercourse on other days, with a maximum of one dose per day). Participants were instructed to follow the assigned dosage schedule for 16 weeks. Adherence was electronically monitored using electronic Medical Event Monitoring System (MEMS) caps on medication bottles. Sexual activity data were collected through daily electronic short message service (SMS). Adherence and sexual activity data were also collected by self-report using a monthly follow back calendar.

Qualitative Data Collection
Focus group discussions were held for those study participants who completed the trial. Study participants who discontinued the study prematurely or who had <50% adherence on monthly MEMS data were asked to participate in an individual interview soon after their final visit. Participants were not identified by name and were free to decline participation in the focus group discussion or in-depth interview. Focus group discussions and semi-structured in-depth interviews took place after the final week of study participation and included topics such as:

likes and dislikes of the study pill, study dosing scheduling and adherence measures, and experiences with study procedures. The discussion guides were piloted with a subset of PrEP trial volunteers before commencing the study to ensure coherence and flow of questions. Most discussions were conducted in Kiswahili and some in English based on participant preference. All discussions and interviews were audio-taped, transcribed, and those conducted in Kiswahili were translated into English. Discussion facilitators were Kenyan study staff familiar with the trial aims, who had received training in qualitative interviewing skills. Focus groups were held separately for those who used intermittent versus daily PrEP, and for men and women prior to unblinding. The only participant who became HIV-infected during the PrEP trial (at the last visit) was included in a focus group discussion.

Data Analysis
Analyses of qualitative data followed the ‘framework approach’ described in Richie and Spencer [16], which involved systematic coding to identify and define concepts, map the concepts, create typologies, find associations between concepts, and seek explanations from the data. NVivo 8 was used for coding data. Data were coded by two independent qualitative researchers at each site to ensure that interpretations of quotes were consistent and that data quality was rigorous and transparent; differences between coding were resolved by group discussion involving other members of the research team. Recurring issues, concepts and patterns were identified using both inductive and deductive reasoning. Analyses highlighted whether findings differed by dosage schedule, adherence rates, and/or gender.

Results
Of the 72 PrEP trial participants, 51 volunteers participated in the qualitative study: 23 MSM from Nairobi and 23 from Mtwapa, and 5 female sex workers from Mtwapa. As per protocol a convenient sample of ‘good adherers’, ‘moderate adherers’, ‘low adherers’, and volunteers who discontinued the trial were selected for participation. Overall 10 FGDs, with a range of 2–8 participants per group, and 7 in-depth interviews were conducted. Of these, one focus group discussion and one interview was conducted with female sex workers. A similar number of group discussions [5] and individual interviews [3] were conducted with participants on intermittent and daily regimens. The participants’ demographic and risk profiles were similar to the overall trial participants, as well as across dosing regimen, and type of discussion (that is, FGDs and IDs).
Acceptability and Adherence to PrEP

Overall, acceptability of PrEP was high in this group of participants accompanied by suggestions for how best to improve the pill characteristics to make it easy to take and make more nondescript to prevent potential misperceptions among, and discrimination from family members and peers. In addition, a number of barriers and facilitators to adhering to the PrEP regimen were identified, including concerns around stigma and discrimination, life styles, dosing regimens and possible side effects (although the last was noted as being easily overcome in time). Participants also mentioned that counseling and commitment to using the product enhanced their ability to adhere to the regimens despite the challenges.

Acceptability of Oral PrEP

Pill as Prevention Method Participants, regardless of dosage schedule, gender, or adherence rates indicated that oral PrEP is a feasible and acceptable form of HIV prevention. When asked, participants were in favor of PrEP being more widely available to the public should studies prove the medication efficacious in HIV prevention.

If [PrEP] really prevents [HIV] they should be available in plenty so that they may help us.

They should be in plenty and given to other people who did not participate in the study.

It’s easy to [use] PrEP. Because if it’s to work, then would be good to reduce the infections. Although at the beginning is hard but with time you catch up. We too were not sure if we would make it, but we did so.

I would encourage people to participate.

Participants were particularly in favor of promoting PrEP in at-risk populations. Because most participants were actively involved in sex work, and often faced challenges to HIV prevention including convincing paying partners to use condoms, PrEP offered them a more convenient, discrete, and controllable strategy for reducing HIV risk compared with regular condom use.

It is a good idea for people like us who have multiple partners, because some will accept condoms and others not, so a drug like this which is good and will help to prevent infection... it is mandatory to swallow, you can’t refuse to swallow.

Furthermore, participants in this highly religious setting, where Christian, Catholic, and Muslim faiths inform many cultural practices, also noted that PrEP might be more acceptable than other prevention methods due to the non-contraceptive nature of PrEP.

Churches like the Catholic don’t approve use of condom. So if such a drug is made available then it would be best and acceptable to such people because one would not be breaking any rules. So it will be very acceptable.

Physical Characteristics Although participants endorsed PrEP in principle, they offered several suggestions for improving its acceptability among potential users. One major theme for increasing acceptability focused on improving the physical characteristics of the pill that is, the size, shape, color, and taste, all of which affected comfort and ease of use. All participants noted that the pill was large, and associated some discomfort when swallowing. The angular shape of the pill may have contributed to this discomfort, with participants suggesting a rounded capsule shape. Despite these concerns, participants noted that over time, they grew accustomed to the slight discomfort of ingesting the PrEP pill.

At first I feared the pill, that it was big like a bean. But as I continued swallowing it I got used to it.

Well the size at first was scary, huge, but once you get used it gets easy.

When I used to swallow, it used to scratch the throat for some time when I started. But when I got used to it, was okay.

In addition, participants expressed concern over the blue color of the pill due to detectable discoloration of the mouth, and concerns that the color might lead others to misperceive the pills as illicit drugs (‘Bugizi’). There was also concern that people would think that the pills were ARVs.

In the morning I can’t take it without brushing, since it stained my tongue.

The color should be white. When people see you using a blue...you know blue is a unique color, so when they see you taking a blue pill they start thinking that you are sick [HIV].

Opinions on the taste of the PrEP medication varied among participants. While some noted that the pill did not have a taste, others thought that the pill had a smell and taste that induced nausea. Overall, these comments indicate that these characteristics would not pose significant barriers to the use of PrEP by similar populations in Kenya at-risk of HIV infection due to its potential to prevent HIV infection, discrete and personally controllable nature, and cultural tolerance of this form of preventative behavior. Recommendations to improve the size, shape, color, and taste of the pill could facilitate wide acceptance amongst potential users.
Chapter 8

**PrEP Adherence Barriers**

**Side Effects** Participants reported a number of side effects when using PrEP including: diarrhea, abdominal problems (gas or cramping), vomiting or nausea, headache, sleeplessness, joint pain, weight loss, dizziness, loss of taste, change in appetite, increase in body temperature, sweating, and decrease in sexual stamina. Many side effects abated over time, and participants expressed greater tolerance after the first initial weeks of discomfort and after consultations with study counselors.

At first I was worried when I was told about the side effects, but I continued swallowing them.

For me I may say that I liked taking them after some time. When I started taking them they actually affected me a bit. For the first week, there is that paper that we read saying that there were some things that were minor like diarrhea – so for me my first symptom I realized was diarrhea, and with time, when I continued swallowing it disappeared for good so I continued without any problems.

When I swallowed them, I had diarrhea for three days then my head started aching. But when I called, they told me to come but after the three days I was okay. I continued swallowing and I didn’t see any problem, but when I was swallowing. I was feeling hungry, now that was my problem.

Some participants, especially those on the daily schedule, mentioned being encouraged by the perceived positive side effects, including an increase in appetite:

It helped me coz at times I was not having any appetite to eat but when I started taking the pill, I was now eating a lot... It was an advantage to me because I was able to eat more and more.

...Again in the morning I would be so hungry that I required eating a heavy meal.

Participants on the daily regimen also noted an increased libido:

It was okay to me because when you go home, you feel like making love to your friend but when I stopped taking the pill, that morale faded.

Outside the context of a trial, there is a chance that PrEP users might discontinue use due to early side effects. However, participants acknowledged that the information provided at trial enrollment encouraged adherence and regular use:

The way the study was organized by protocols and it went through steps which were good... It taught me to organize myself and it also taught me to keep time. Keeping time in swallowing drugs.

Overall the comments indicate that side effects were not so severe as to deter participants from continuing with the PrEP regime.

**Intermittent Dosing** Most participants, regardless of which dosage regime they were assigned to, expressed a preference for intermittent use due to a less-burdensome schedule of pill taking. While most participants preferred intermittent dosage, those in the intermittent group reported more problems with adherence, particularly with the post-coital dose which was to be taken within 2h after sex.

Firstly, falling asleep inhibited adherence:

The difficult thing about it was, for me I used to swallow in the morning, sometimes you come from a date in the morning at 05.00am, and you go to sleep and the time passes by, and you have to swallow the drugs at 2.00pm or 3.00pm when you remember and go to swallow, but on the same day.

Two hours should be extended to 4-6 hours since after sex one relaxes and may oversleep.

Adherence was also a challenge if participants engaged in multiple sequential sex episodes, primarily because of fear of overdosing.

I was afraid because sometimes I could take overdose. I used to have a lot of clients over the week than Friday.

I used to swallow on Monday and Friday ... On Fridays I used to get a client. So sometimes I used to take two pills but later on, I saw that it would cause me problems. I was afraid because sometimes I could take overdose.

A few participants raised the issue of privacy as a potential deterrent to taking the post-coital dose within the prescribed 2h after sex.

Swallowing the drug on Monday and Friday was okay to me. I used to forget sometimes after having sex let’s say for like one and a half hours later that’s when I remember. Or sometimes the person I had sex with is still there so I have to wait for that person to leave or I just find a way of taking the pill. But remembering the days for taking the pill was not a problem.

The other thing is fear of the people you love. Like you’re with your girlfriend and after having sex, each time you take a pill, so she will start thinking, why is he taking the pill? You know it’s so “questionable”.

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...Overall the comments indicate that side effects were not...
Lifestyle Work, social schedules and substance use affected adherence, regardless of dosage schedule and gender. Many participants spoke about busy work schedules that delayed their returning home at a reasonable time leading to missed dosages.

Coming late from work …for example I was taking the drugs at 8:00PM so I was taking them as late at 9:00 or 10:00PM, and also if I had carried the drugs I was unable to take the drug in front of a crowd of people.

Other participants described how travel, including unexpected time away from home and resultant shortages in pills, impeded adherence.

It happened that we lost somebody and I had no time to go home but had to go on straight away. I went and there was some time I didn’t swallow the drugs due to that, it was only 4 days, and we came back.

There is a time I travelled and I only carried drugs for two days. So when I went there, I took more than two days and I could not come back for the pills. So I was forced to miss those days.

Participants also identified substance use as a barrier to adherence. For example, alcohol use was a reason for not taking pills on time or not taking them altogether:

Sometimes you are on blackout because of having taken alcohol so there is no way one can open the MEMS cap.

…after sex sometimes you know you get drunk and you forget. And you remember about five or six then your like should I get the pill or not. So the thing like two hours after sex…m I would prefer before sex.

Some participants mentioned the reason for not taking the pill was because they were unsure about the interactions of alcohol with the pill.

You should check whether the pills can interact with the alcohol because sex for most people especially the youth takes place during that time of partying with beer, khat (stimulant plant) and Bhangi (Cannabis) and if it will be 2 hours after sex it will be very hard for many people. The drug should go well with beer.

Stigmatizing Effects of PrEP Participants noted the potential social risks of taking PrEP, regardless of dosage regime, gender, or adherence rates, and pointed to instances of both experienced stigma and potential situations where stigma may occur. Some participants occasionally ingested PrEP in the presence of family and peers, which prompted curiosity about the use of the pills. Other participants described either having to conceal their PrEP pill taking or to disclose the reasons for their behavior which subsequently led to stigmatization:

So I feel we should be informed of the challenges to expect for those with family. We were informed about the challenges about the use of the drug but not the challenges to deal with the family while participating in research.

My friends would ask whether I am using ‘njugu’ [colloquial term for a local ARV] so to cut the long story short I had to admit I am using ‘njugu’. If it were possible it was better one taking the drugs alone when no one sees it. It was a secret and basically to many it is a burden. You wouldn’t want to be known in what research one is participating. Njugs/peanuts are ARV.

Notably, many participants expressed concern that taking PrEP medication could lead others to believe they are HIV positive and on ARV medications.

Another challenge is that the shape of the bottle is that of ARVs…others could not believe that I am not infected so it was a challenge to explain that I am not sick but in a study. Some people could not believe.

One participant attributed his spousal separation to his wife’s suspicions about his HIV/AIDS status, which she questioned after seeing him taking PrEP:

I stored [PrEP pills] in the bedroom and would swallow every morning so when my wife saw me taking drugs every morning she would question why I take drugs daily wanting to know if I am sick. In the process of explaining she was shocked and confused thus she ended up seeking more information elsewhere and got wrong information from friends. I think that is the reason my wife left me.

Other participants noted the potential for rumors to persist even if family and friends are informed about using PrEP as a prevention measure for reducing risk of HIV infection.

Because they would not understand they will probably think I am infected thus tell others. Well, they may believe you when you tell them [about PrEP] but once they go other places they could gossip I am HIV positive.

Fear was there, but I used to hide the drugs, and I used to swallow after making sure nobody sees me, since people used to know what the drugs were for, and they would say that you are infected, and people at home would fear you.
If suspected of being HIV-positive or having AIDS, PrEP users could be vulnerable to gossip, rumors, potential discrimination in the community and, for those engaged in sex work, loss of clients.

People may be wondering why you are taking drugs and may think otherwise. They may think you are taking ARVs, or you have TB or you are suffering from an abnormal disease… People are different, some may spread rumors that I am taking drugs and when you pass in front of people, they will be looking at you differently. Maybe you want a girlfriend. It becomes difficult to take the drug in front of people.

Participants used a variety of strategies to counter the potential stigma of using PrEP. A common practice was to use pills secretly:

If you are determined, you can swallow medicine even in the toilet, so that he doesn’t know, and some will understand when you tell them that these are for headache, and he is satisfied.

Others lied about the reasons for taking the pills, describing them as treatment for other health issues:

My boyfriend once opened [the medication holder] and questioned so I told him these are malaria tabs.

I have a wife and children… They would see me swallow. I would even send my small daughter to fetch them. When she [wife] questioned, I lied that they are for asthma. She said asthma drugs are not like the study drugs. That is when I had to explain I am in study and the drugs are study drugs. Still she never believed so we had to go to VCT centre for testing and we were both negative. I continued swallowing the drugs.

A few participants viewed these questions as an opportunity to educate and inform others about HIV risk.

People who saw me swallow thought I am sick so I would say… what about you? Do you know your status? It was so that I encouraged others to get tested in a VCT.

Indeed, these social challenges and likelihood of HIV-related stigma, particularly from family, friends, and significant others, suggest the need to understand and respond to the acceptability of PrEP not only among users but also amongst members of their social networks. These themes were particularly prominent in participants with low adherence or who discontinued the study, suggesting that these social factors may play a major role in both adherence and acceptability. Strategies for helping PrEP users inform and involve their significant others, family, and friends in pill taking and adherence might be helpful to minimize these social risks. Of note is the negative impact that perceived or experienced stigma has on a participants’ ability to adhere to a given dosing regimen. The discussions and interviews highlight how participants were delayed or skipped taking pills, and did not have access to pills (as the brother took them for “testing”), due to the fear and suspicion of family members and peers. Among high risk and often marginalized populations such as MSM and female sex workers in Africa who have unpredictable schedules and limited privacy and storage options, the fear or experience of stigma has implications on their ability to adhere to dosage regimens.

**PrEP Subversion** When queried about sharing of drugs, participants stated unequivocally that they did not share their PrEP medications with others who were not enrolled in the study. However, some reflected that PrEP subversion may potentially be an issue in future scale-up. One participant noted the following:

I explained to [my family that] it’s just a study and not cure so I warned them not to use my drugs. Once the study is through and drugs approved then we could share them.

**Increasing Sexual Risk Behavior** Risk compensation may be one potential negative side effect of PrEP. Although a few participants highlighted this issue, it was not discussed at length and very few mentioned increasing sexual risk behavior while in the study.

Now that we have been used to swallowing the drugs, to me I feel it is prevention… It gave me confidence, even when I was with a stranger, so long as I have the pill I was 100%.

More commonly, reduced risk behavior was mentioned as a result of participating in the study.

We were told that the study is to analyse adherence and not for prevention, so we were advised that once we enroll in study we should still carry on to protect ourselves by using condoms or other prevention. We should never have unprotected sex. That made me take precautions.

Similarly when asked if people will like the drugs once available on the market, one participant responded that PrEP would be perceived to have a 100% protective effect:

… because they will know the disease will have reduced and there will be no risk of infection. But
then again promiscuity will increase. Promiscuity will increase because there is a drug available.

**Facilitators of PrEP Adherence**

**Trial-related Procedures** Factors designed to facilitate adherence in this study—such as MEMScaps on the pill containers, reporting pill taking behavior, and provision of a keychain holder for carrying pills around—may not reflect real life settings. For example, one participant stated that he adhered to the prescribed dosage because of the knowledge that the research team would collect blood and hair samples to test for adherence, suggesting the likelihood for much lower adherence rates outside of a research trial context.

I was told there would take samples to prove if I had been taking the drug or not so yes I followed the advice to swallow daily so not to lie.

**Role of Counseling** In the light of these identified challenges, participants noted the importance of counseling on possible side effects and adherence. One participant commented on the role of counseling to forewarn users of any potential challenges associated with initial use, and expressed a local Kenya adage ‘signs of rain are clouds’ to underscore the need for early caution and advice:

The time we were given the counseling for what was coming… It was preparing us so that we agree with the challenges that we would get when we start, and to me it really helped me.

More specifically, participants described how counseling prepared them for the possible challenges of self-administering the pills and helped them to anticipate minor side effects:

Most of the challenges and side effects we experienced was as told earlier and we were alert, so it was not a shock. We were well prepared so we knew what to expect. So it was very helpful.

Counseling also assisted participants in adherence by emphasizing the themes of “being honest with yourself and the research team”, a message that resonated with participants:

What I found useful was the way they counseled me. The importance of taking the drugs, and the importance of being honest.

Counseling provided participants with education and prevention information to avoid risky sexual behavior, indicating a potential for behavioral effects of PrEP counseling that can extend beyond pill taking and adherence:

I was very active in anal sex but since joining study I have come to reduce. First I thought anal sex with male partner cannot give me any infections, but when I joined study I was counseled that I can surely get infected including impotency or other infection.

Counseling not only included education (that is, knowledge about the drug and the medication regimen) but also sought to establish a rapport between the participants and counselors, a strategy which facilitated adherence.

The counseling taught me to have the courage, to take the drugs without any fear, I felt it was okay to me cause it really helped me when joining…

Although participants reflected favorably on the information and counseling provided by the research, the rigorous measures taken to ensure safety might not be replicable outside the context of clinical trials research. For example, one participant reflected on having ongoing access to research study staff:

What was extremely useful is, for example, you are at home… we had been told by the counselor that if you notice anything odd such as problems with your eyes or ears we should telephone the clinic. This is one of the arrangements that impressed me, for you cannot give someone something and you are not sure whether it works or not. This requires you to be enquiring from this person about whether that this is working or not working or enquiring how he is feeling.

**Altruism and Support** Altruism was often stated as a factor in the decision to participate in this trial. Participants expressed the desire to help curb the spread of HIV:

There is no one who contributed to my joining this study I just decided on my own… but if they knew I would have told them that I am trying to make some research drugs for our country Kenya.

Participation in the study and regular contact with the counselors resulted in a strong commitment to adhere and was highlighted in participants’ reports of incorporating the pills into their regular routines as well as changes in the time to take the pills to match their schedules. As stated by this volunteer:

I used to remember cause of where I put my toothbrush and the alarm clock. Those two were always reminding me.

Even those participants who were on the intermittent dose spoke of using different strategies to ensure adherence such as taking the pill during the day instead of at night or when they ate a meal and so on.
While participants identified a number of factors that enabled adherence to the different regimens, most are unlikely to be replicable outside the trial context. Some participants did mention incorporating a number of strategies to ensure adherence highlighting their commitment to following the regimen. These actions might point to a commitment that could be followed outside a trial context and into their regular lives especially if there is strong motivation to prevent HIV infection. In addition, these issues can help to inform educational, outreach and clinic services for future roll-out.

In summary, the dosage schedule may be challenging due to high prevalence of unpredictable schedules and alcohol use. Intermittent dosing, particularly post-coital dosing, may not be feasible for at-risk populations with relatively high rates of transactional sex work. It is important to note that these challenges were reported despite the heavy research involvement among users throughout the trial (that is on-going counseling, MEMScap, and regular reminders via SMS). As such adherence outside the context of a research trial might be challenging if participants do not feel supported or accountable to others (e.g. researchers, physicians) for self-administering PrEP according to the dosing schedule.

Discussion

This paper presents some of the first qualitative data on acceptability and adherence to both daily and intermittent PrEP regimens in at-risk populations in Kenya. Although this study was initiated and completed prior to any PrEP efficacy data in human, the findings underscore the importance of behavioral adherence interventions to the success of PrEP. The adherence challenges identified in this study for both fixed intermittent dosing and post-coital dosing can help inform PrEP regimen choices for future efficacy studies. In particular, our findings clearly indicate the influence of social and individual level contexts on PrEP acceptance and adherence. Findings centered on three main themes. First, whereas acceptability of PrEP drugs was high due to the anticipated effects on HIV transmission, participants noted characteristics of the PrEP pills—such as size, color, taste—that, if altered, could further improve acceptability. Participants described side-effects that emerged shortly after initiating PrEP, but these diminished over time and did not deter them from taking the pills. Second, participants reflected on the social consequences of taking PrEP, which included relationship challenges, rumors, and experienced and perceived stigma, due to PrEP users being perceived as having AIDS or being illicit drug users. However, it bears consideration whether the roll-out of antiretrovirals for HIV prevention (as PrEP, and as earlier treatment to prevent transmission) may actually diminish stigma associated with these medications. Third, individual lifestyle issues in this at-risk cohort, such as alcohol use, work, transactional sex and travel presented significant challenges to adherence to both daily and intermittent regimens. In particular, post-coital dosing adherence appeared to be diminished by these factors.

Despite some potentially serious barriers to adherence, participants highlighted a number of creative and common place strategies to help them adhere to their assigned dosing regimen. The feasibility of doing so within the confines and conditions of everyday life as opposed to a controlled and consistent intervention such as the PrEP trial remains unclear. Because of the fluctuating nature of sex work, participants were not always able to anticipate if they would need to take pills with them when leaving home. Importantly, there remains strong stigma surrounding HIV/AIDS in Kenya as in many parts of the developing world, and being observed taking pills that have been associated with HIV/AIDS can result in discrimination. Strategies for educating the public about PrEP, ensuring regular ARV access for people living with HIV/AIDS, and for addressing HIV/AIDS stigma in the developing world more generally, are necessary concomitants of a broad public health scale-up of this approach.

Our data suggests that PrEP could be an acceptable and feasible preventive option for Kenyan MSM and female sex workers despite their unpredictable schedules and marginalized situation. Although intermittent could result in drug exposure and less cost, the success of cotally-dependent dosing is still unclear as there remain multiple structural, social and individual issues to post-coital dosing in this population. Some of these issues may not apply to other risk groups, such as stable, cohabiting, HIV discordant couples. More work needs to be done to explore pre-and post-coital dosing which offer different advantages for different at-risk populations.

These findings also have implications for designing education and counseling materials for individuals prior to initiating PrEP. Because participants noted the fundamental importance of drug efficacy findings in determining their decision to take PrEP, potential users must be informed of drug trial results in language that can be comprehended by lay-audiences. In our data there was limited discussion by participants of partial efficacy—that is, that PrEP will not always prevent against HIV infection—which is a crucial consideration in scale-up [17].

Future PrEP users must be made aware of the limitations in PrEP efficacy, and receive counseling on behavioral risk reduction strategies for HIV prevention such as condom use and partner reduction, and on the importance of regular testing, in order to bolster the effects of the drug.
It is also essential that pre-PrEP counseling provides information on both the physical and social risks associated with pill usage. Although this study protocol provided participants with information on minor side effects and discomforts due to the drugs, participants described not having adequate foregrounding about the potential social consequences of taking this drug—particularly the stigma associated with being perceived as having HIV/AIDS or being an illicit drug user. In addition to acknowledging these potential risks, pre-PrEP counseling can also provide users with skills, strategies, and support for minimizing adverse physical and social harms associated with taking oral PrEP medications. This may include suggestions for coping with side effects such as nausea or headaches, recommendations for discrete pill taking and for remembering their dose schedules, and strategies for educating and informing family and social network members about their use of PrEP.

Involving partners and significant others in pre-PrEP counseling and encouraging and training them to provide ongoing support to PrEP users can potentially improve adherence and clinical outcomes associated with PrEP, as has been observed in couples-focused interventions for ARV adherence among people living with AIDS [18, 13]. There are two other probable risks associated with large-scale implementation of PrEP for which we did not observe strong support in our data, but have been commented on elsewhere [17, 19]. Risk compensation—which refers to a tendency for people to increase health risk behavior if they assume they are less susceptible to illness—may be a hazard associated with PrEP scale-up. Four reasons may explain why few participants described increasing sexual risk behavior following enrollment. First, because the study was described as a safety, acceptability and adherence study, participants might have self-censored their behavioral risks due to social desirability effects. Second, individualized risk-reduction counseling may have reduced risk reporting during follow up. Third, because drug efficacy data had not yet been published at the time the current data was collected, participants were not yet certain that PrEP would protect against HIV infection and, thus, may have felt compelled to maintain low-risk behavior. Fourth, because the study was relatively short, participants might not have had enough time to relax their perceptions of susceptibility and increase at-risk behaviors. An additional consequence that might occur in large-scale implementation of PrEP is the misuse of drugs and subversion of drugs to people who were not prescribed the medication. This phenomenon has been observed with regard to sharing of ARV medication [20, 21] and other prescribed drugs [22, 23]. The controlled nature and limited duration of our pilot study may not have permitted this from occurring. There are several limitations to this study. First, participants were sampled from an existing cohort of participants who had received multiple sessions of HIV testing and risk reduction counseling, and might not reflect the experiences in research-naive participants or other populations lacking exposure to clinical trial research and strong HIV prevention infrastructure. Second, due to the overarching goal of this study on assessing PrEP safety, acceptability and adherence, participants might have succumbed to self-presentation biases. Third, due to the nature of qualitative methods, we cannot provide corroborating clinical data on the severity and duration of reported side effects. Fourth, the qualitative nature of the data limits the ability to generalize across similar populations and did not permit inferences about causality or temporal sequence. Fifth, due to the brief duration of the trial, we lack insight into experiences associated with long-term use of PrEP.

Conclusions

PrEP represents a core component in the future of HIV prevention. Our study of the experience of PrEP users provides support for the acceptability of PrEP in at-risk populations, however highlights a number of factors that might impede adherence and potential scale-up. Because social context and individual-level factors can substantially determine adherence and therefore drug effectiveness, PrEP cannot be considered a purely biomedical intervention. PrEP interventions must consider the synergies between the drug, the individual user’s behavior, the societal context, adherence, and social harms as a result of taking PrEP outside the research setting. Behavioral and social interventions that address the contextual realities of PrEP users will be fundamental in building effective and sustainable programs and policies for wide PrEP implementation.

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Conflict of Interest

Authors have no conflicts of interest.

References


Chapter 9  General discussion

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GENERAL DISCUSSION

Research undertaken for this thesis focused on engaging men who have sex with men (MSM) to facilitate their access to HIV/AIDS services in coastal Kenya. Delivering HIV/AIDS services to MSM in this region is typically challenging as male same-sex behaviours in this society and its health care facilities are highly stigmatised [1-5]. In Kenya, as elsewhere in sub-Saharan Africa (SSA), legal policy, social inequality, and discrimination by health care providers (HCPs) and the wider community have discouraged MSM from seeking health care and led to MSM’s further social isolation [2, 5-10]. In this context MSM health needs cannot be met through short-term measures. Instead, structural efforts must be made to ensure that the labour force will be expanded through the training of competent and nonjudgmental HCPs, and subsequent engagement of communities in antistigma education programmes. Specifically, HCPs’ multiple skills - including professionalism, strong dedication and ability to volunteer, and close ties with the community - position them extremely well to enable improved health care services for MSM and other sexual minorities. Community participation is particularly critical in this process, not only to ensure that MSM communities and local civil-society organizations are meaningfully engaged in the health care dialogue, but also to prevent negative impacts, especially in public media and in political and public health care debates [11, 12]. As the studies presented in this thesis demonstrate, engagement of MSM in biomedical research led to the development of a service model that facilitates both (i) ensuring MSM’s safe access to quality health care and (ii) engaging the wider community. MSM sensitivity training for HCPs, as well as engagement of communities, is therefore essential to guarantee MSM’s access to health care.

Data indicate that in Kenya today a larger population of MSM exists than has previously been acknowledged by policy makers; data also indicate that HIV prevalence rates in MSM are much higher than rates among the general population [2, 13-17]. While absolute numbers of MSM are small when compared to the general population, the overall contribution of MSM to Kenya’s HIV
epidemic may be disproportionately large. For this reason, representative studies of MSM are needed to provide a better profile and understanding of HIV transmission dynamics and to inform and advise policy makers on how MSM may be reached for services.

In 2005, our team started biomedical research with MSM in coastal Kenya, albeit unintentionally. Our team’s awareness of MSM emerged when men presumed to be heterosexual revealed that they had had sex with partners of the same sex. The fact that it had taken that long to measure HIV-1 infections in Kenyan MSM can perhaps be understood as a result of the interplay between an overwhelming amount of information about the severity of Kenya’s epidemic and a failure to recognize that HIV vulnerabilities might extend beyond women and children. Also, factors such as the persecution of men on the basis of their assumed homosexual orientation, discriminatory laws governing same-sex behaviour, the absence of supportive (i.e., no questions asked about anal sex) HIV-1 testing and counselling guidelines for MSM, and researchers’ hesitation to ask about African male same-sex practices significantly delayed recognition of the HIV infection among MSM, along with understanding of their role in the African HIV epidemic.

The first empirical chapters of this thesis primarily focused on novel strategies to identify and engage African MSM for HIV research and services. Due to issues related to stigma, discrimination and the illegality of homosexuality in most countries in SSA, statistics on HIV and MSM are scarce, yet they are prerequisites for prevention-programme efforts and for informed public-health approaches. In Chapter 2, we used a probabilistic calculation and showed that with the capture-recapture (CR) method, numbers of MSM at the Kenyan coast can be rapidly estimated. The study also showed that when respectful and considerate approaches are used to ensure safety, dignity and anonymity, MSM will come forward to work with public-health authorities and others to help improve their sexual health [18].
In Chapter 3 we assessed MSM’s sexual risk behaviours using the audio computer-assisted self-interviewing (ACASI) and showed, through a comparative analysis of enrolment responses between ACASI and face-to-face interviewing (FTFI), that ACASI captured a higher median number of regular and casual partners in the last week. Also, group sex, intravenous drug use and rape were reported more frequently in ACASI than in FTFI. As much as the overall findings indicated that ACASI could be a useful technique for screening eligibility in research settings, the accuracy of sexual risk assessments based on self-reported sexual behaviour continues to be a limitation.

In Chapters 4 and 5, the focus was on an intervention sensitizing HCPs on MSM issues. We showed that a relatively brief training programme for HCPs addressing their knowledge of MSM and their sexual health needs, combined with self-directed and facilitated group learning on non-judgmental service provision, was associated with increased knowledge and decreased homo-prejudice among HCP participants, who were assessed at baseline and three months post-intervention [3]. Although, focus group discussions indicated that reduction of secondary stigma in health facilities is vital to HCP’s ability to medically assist MSM and provide lifesaving information on how to prevent and treat HIV infection, interviews with the same HCPs two years post-intervention showed that sensitized HCPs providing services to MSM regularly suffered stigma from their unsensitised co-workers and superiors (Chapter 6). Expansion of the scope of the MSM sensitivity training across and outside the HIV health sector was noted as a strategy to eradicate secondary stigma and to improve societal inclusion of MSM individuals [19]. Moreover, an outcome from the systematic literature review in Chapter 7 prioritized broadening of the MSM sensitivity training to consider the roles of law enforcement, policy makers and religious leaders as foci for structural interventions to strengthen health care services for MSM.

Chapter 8, the last study included in this thesis, focuses on an important future direction in the field of HIV prevention for key populations: pre-exposure prophylaxis (PrEP). We evaluated the use of oral PrEP...
in MSM over a four-month period and concluded that PrEP can be hugely beneficial for those MSM who are most at risk for HIV infection. Truvada, the only pill presently approved for HIV prevention (U.S. FDA approval July 2012), is up to 92% effective against HIV transmission, however, if medication adherence is lacking, PrEP effectiveness will drop steeply [20]. Whether PrEP can be successfully implemented as part of Kenyan public-health policy and as a human-rights imperative for MSM will also depend on qualified HCPs whose collaborative work with PrEP users and the wider community will be fundamental to facilitate guidance on this approach.

This discussion chapter is organized into three main sections. First, I will review the main scientific contributions in this thesis. Then I will consider the social and political context that shapes HIV research and policy interventions with MSM. Finally, in the last section, I will review some specific recommendations based on the findings reported in this thesis, for strengthening HIV health care services for MSM in coastal Kenya and, potentially, elsewhere in SSA.

9.1 Methodological approaches

9.1.1 Engaging MSM communities in coastal Kenya: Application of capture-recapture method

The importance of reaching MSM with information, services and research engagement has intensified MSM mobilization. In the absence of a clear understanding of the magnitude of the MSM sex worker population in the Kenyan coast, we employed the capture-recapture method in 2006 to estimate the size of the MSM sex worker population in Mtwapa as approximately 740 [21]. In this study, as in other CR studies, the estimate was subject to a number of methodological limitations (e.g., captures may not have been totally random and independent, relatively high refusal rates) which could have affected accuracy and precision. However, the importance of this study was not so much about ensuring the estimate’s accuracy but, rather, identifying and enrolling hundreds of MSM selling sex in a country where the existence of homosexuality has been denied. The estimate also indicated a fairly large population of male clients willing to pay for the sexual services of these MSM,
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as well as pointed to the existence of a larger community of other MSM, since most MSM do not sell sex [18]. Data on MSM in Kenya are still limited, but a growing number of research activities are uncovering high numbers of MSM in the bigger cities. Soon after Kenya’s enumeration of coastal MSM, for instance, MSM populations subsequently were identified in Nairobi (i.e. 11,042 MSM with a plausible range of 10,000-22,222) [22].

It is widely assumed that there are thousands of male and female sex workers operating in Kenya, with especially large numbers in the larger cities such as Nairobi and Mombasa [23-25]. The extensive sexual networks of these sex workers—including male clients and male non-paying partners, as well as female partners [26]—indicate the existence of a much larger community of MSM in the Mombasa area. The Kenyan AIDS Indicator Survey (KAIS) missed these subgroups because their members often do not reside in homes that can be mapped and enumerated for the KAIS sampling scheme, and because their behaviours of interest are stigmatized and may have gone unreported during household interviews. Capture-recapture enumerations were conducted, however, among female sex workers in the central business district of Nairobi, where more than 7,000 female sex workers were estimated to be active [27], while another CR study estimated the number of FSWs active on the Mombasa-Kampala (Uganda) highway corridor to be 8,000 [28].

In 2007, the United Nations Office of Drugs and Crime, together with partner organizations, conducted population-size estimates of injecting drug users (IDU) in Nairobi and Mombasa, using a focus group multiplier method. This activity estimated more than 6,500 IDU in Nairobi and more than 5,500 in Mombasa [29]. Currently, there is a debate over the actual size of the IDU populations in Nairobi and Mombasa.

Based on these enumeration studies, we found that there are high numbers of MSM whose service needs for matters such as sexually transmitted infections, acute HIV infection, HIV counselling, and substance-use and mental-health counselling are not met [30]. Only a limited number of HCPs...
provide population-specific services, and while the Ministry of Health has defined a general package of services for sex workers, services to be provided explicitly for MSM specific needs are less clear. Based on work with both the MSM community and HCPs, we have seen that the primary barrier to health care uptake has been provider-driven stigma, a gap we intended to address via a multifaceted sensitivity training and engagement programme.

9.1.2 Collecting sexual risk data: ACASI practice

Our research in this area focused on monitoring cohort participants’ self-reported sexual risk-taking behaviours at enrolment. Concerns had been previously raised with regard to the accuracy of sexual-risk assessments based on self-reported sexual behaviour as discrepancies between the validity and reliability of self-reported measures and other outcomes as well as under- and over-reporting were noted [31]. Comparing and evaluating ACASI, with the more traditional method, FTFI, we found that ACASI elicited more frequent reporting of socially sensitive or stigmatized behaviours, including higher numbers of sex partners as well as sexual abuse and IDU. Interestingly, behaviours making MSM eligible for recruitment, based on standard inclusion criteria such as anal sex, sex work, and sex between males, were reported less frequently in ACASI [31].

Data from a systematic review comparing research from developing countries on the effects of questionnaire delivery mode reaffirmed that ACASI significantly reduced reporting bias, despite wide variation in geography and populations sampled [32]. Adebajo et al. demonstrated that MSM in Nigeria who were assessed by ACASI were more likely to report high-risk sexual behaviour and to self-identify as homosexual than those who were assessed by FTFI [33]. However, study findings have not always been unequivocal as research using ACASI in developing countries found ACASI to raise rates of reporting sensitive and stigmatised behaviours [34-38], while other studies, like the Vaginal and Oral Interventions to Control the Epidemic (VOICE) trial, found that ACASI did not offer any opportunity to identify miscomprehension or misinterpretation [39].
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Moreover, we also found that data entry errors were reduced when controlled by a computer programme. This finding corresponded with results reported elsewhere [40-42] and led us to conclude that, for research purposes, ACASI may be the preferred method for data collection as benefits include consistency and standardisation of data collection, fewer data transcription errors and facilitated entry of data directly into a database.

At our sites, ACASI has been introduced as part of the new research paradigm of ‘mixed methods’, [43], with the purpose of complementing existing sexual risk monitoring and HIV risk reduction in the counselling room. The “multiple ways of seeing and hearing” [44] enrich and contribute to, but are also a natural outlet for research.

MSM sensitivity training and stigma reduction among HCPs

9.1.3 Nonjudgmental health care provision

Until recently, clinical training guides providing information about MSM and addressing the needs of frontline HCPs in SSA did not exist. Yet, overt stigmatization among HCPs in the context of providing HIV testing and care toward MSM, including denial of service [26, 45] and harassment in clinic spaces [46], together with HCPs’ ignorance of HIV transmission routes in MSM, had been frequently reported as deterrents to service provision [47] and patient confidentiality [48]. This, together with lack of evidence of effective approaches to enhance the health and functional status of MSM with HIV infection or other STIs, prompted the initiative of the MSM sensitivity intervention for HCPs.

Data from the MSM sensitivity pilot phase indicated that trained HCPs were better informed and felt more confident and capable of delivering nonjudgmental MSM-specific health care services three months post-training [3, 49]. Furthermore, the training intervention demonstrated that the
combination of self-directed learning and facilitated group learning had a positive impact on HCPs’ attitudes toward MSM patients [3]. Data deriving from the two-years-post-intervention assessment indicated that HCPs needed to be encouraged to keep reflecting upon their own behaviors that might lead to stigma and discrimination [19].

9.1.4 HCPs’ reflection of competence in the process of change

The MSM sensitivity training was supported by reflection exercises based on principles of competence learning [50]. Units of new knowledge, skills, attitudes and behaviour were integrated to aid HCPs in becoming aware of their own learning processes and understanding the consequences of professional conduct. This learning process corresponds with work by Epstein and Hundert who wrote in JAMA the following about clinical professional competence “… reflection is at the heart of any educational or attitudinal transformation . . . and habitual, judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values and reflection in daily practice should be used for the benefit of the individuals and communities being served” [51]. In real-world scenarios, this means that in addressing the concerns of (MSM) patients, HCPs should be able to logically and morally reason and apply humanistic, caring qualities. As the MSM sensitivity training has shown, these skills are teachable and potentially can impact HCPs’ sensitivity toward (as well as their ability to identify) issues of MSM autonomy, beneficence and justice [52, 53].

Using Lukes and Faucoult’s theory of power, HCPs found themselves placed in a powerless–powerful dichotomy when dealing with MSM patients. They felt more heavily influenced by the standards and demands of the broader Kenyan society than by the “real needs” of their (MSM) patients and acknowledged feelings of powerlessness, such as when dealing with the secondary stigma of their unsensitized colleagues, as well as powerful feelings, such as believing that they are “in the right” in terms of their statutory powers, including denying MSM patients health care services because of
their “illegal” behaviour [49]. Clearly, the provision of health care services is innately political as power within society affects power within health care structures [54, 55]. This led to two main streams of thought about why HCPs should take issues of power into account when serving MSM patients. First, it is only with understanding of and knowledge about MSM issues that HCPs feel empowered to combat the negative effects of power differentials on MSM. Second, for HCPs to successfully challenge power structures that prevent change, they need to be part of the solution and take ownership.

The MSM sensitivity-training model provided valuable insights into the fluidity of the power processes between HCPs and MSM [49]. Central to the intervention was for HCPs to be self-consciously aware of the way in which their own powerful position either facilitated or inhibited the empowerment of MSM. Recognition of MSM’s right to nonjudgmental health care can potentially advance the ideal of a more pluralistic form of HCPs’ professional practice in providing health care services.

**Future HIV prevention for MSM**

**9.1.5 Challenges of implementing PrEP**

Amongst the newest available biomedical interventions for MSM is oral HIV pre-exposure prophylaxis (PrEP). PrEP is a key priority both internationally [56] and in the Kenyan national HIV strategic plan [57], as evidence and experience show that providing PrEP to those who are most at risk can be beneficial to a whole country’s approach to HIV and AIDS [58]. WHO estimates that, worldwide, 20-25% reductions in HIV incidence in MSM could be achieved through PrEP, averting up to 1 million new infections over ten years [59]. Furthermore, PrEP has shown efficacy in several trials, i.e. the iPrEx trial among MSM and transgender women with 44% relative reduction in risk of HIV acquisition [60]; 75% risk reduction among sero-discordant heterosexual couples in the Partners PrEP trial conducted in Kenya and Uganda [61]; 62% risk reduction among heterosexual men and
women in the TDF2 trial conducted in Botswana [62], and 49% risk reduction in the Bangkok Tenofovir study conducted among injecting drug users in Thailand [63]. The efficacy results recently released from the ‘IPERGAY on demand PrEP trial’ showed 86% reduced risk of HIV infection compared to placebo among MSM in France and Quebec, who took PrEP intermittently, or only around times of sexual activity [64]. Earlier results from the IPERGAY, based on rates of detected drug concentrations in plasma and hair samples, revealed that adherence to intermittent dosing regimens was high (median 84%) [65]. In contrast, results from our Phase-I PrEP study demonstrated that adherence to intermittent dosing regimens, fixed doses, and in particular coitally-dependent doses, may be more difficult than adherence to daily dosing [66, 67]. Our qualitative data showed that study participants found PrEP generally acceptable and easy to take, but also revealed that MSM had significant concerns about stigma and gossip. In addition participants experienced practical difficulties for instance, those who had been assigned to take an intermittent dose, found it hard to take the post-sex dose while being away from home [67].

The WHO has released new consolidated clinical guidelines on HIV prevention, diagnosis, treatment, and care for key populations (KPs) and strongly recommends PrEP as part of a package of prevention services for MSM [68]. PrEP is a remarkable scientific advance that increases the options for MSM to protect themselves from the HIV virus; by and large, however, it has only been offered in pilot projects in North America. A recent commentary by Beyrer et al. in the Lancet [56] gives courage “to all who are committed to the principle that all people have a right to effective HIV prevention and treatment. Now that PrEP has been proven to work, we believe that expanding access to PrEP is not only sound public health policy but also a human rights imperative.” However, some reservations congruent to experiences with the implementation of ART in SSA must be observed [69], as the social context and individual-level factors of populations in SSA are substantially different from populations in developed countries. Whether PrEP can be successfully implemented as part of Kenyan health policy will depend on the presence of qualified HCPs to prescribe and counsel MSM.
patients about PrEP adherence, as well as the broader inclusion of MSM seeking PrEP in health settings. As such, PrEP cannot be considered a purely biomedical intervention, because behavioural and social interventions that address the contextual realities of potential MSM PrEP users will be fundamental for achieving PrEP implementation in SSA.

9.1.6 HCPs’ role in the continuum of HIV prevention / care
When taking into account new advances such as PrEP in the continuum of HIV prevention-to-care for MSM, it is even more important that HCPs be aware of the power balance between themselves and MSM and within the health care structure. Provision of PrEP for MSM in SSA will only heighten the importance of rights-based responses. Considering the fact that there are not yet established guidelines for addressing homophobia, HCPs will have to actively and overtly incorporate nondiscriminatory attitudes into their day-to-day practice to achieve MSM’s trust and maintain integrity. For PrEP to be viable, new approaches are needed, such as inclusion of views from MSM community groups, and supportive relationships with HCPs needs to be built. Also, in order to monitor the effects of PrEP use among MSM both inside and outside the service structure, qualified and unbiased HCPs who are willing and able to collaborate with MSM communities are essential. Nondiscrimination policy statements, preferably disseminated from the top down, are more likely to ease nondiscriminatory service delivery [70]. We think, however, that each and every individual HCP with a positive attitude toward MSM can become a vehicle for change through asserting and supporting MSM’s legitimate claims on scarce resources such as PrEP provision.

9.2 Social and political considerations

9.2.1 Recent policy developments
Formative and qualitative studies in Mombasa led by Esu-Williams as early as 2003 [14], and observational studies in Nairobi conducted by Onyango-Ouma and Geibel in 2005 [71], suggested that MSM existed in Kenya in far greater numbers than previously believed. Sanders et al., who were
the first in Kenya to enrol MSM for biomedical research, confirmed that MSM constitute a significant
portion of Kenya’s epidemic [72]. Subsequent epidemiological studies demonstrated additional
scientific evidence, and findings were shared with policy makers at the national and local level [66,
73-81]. Together with Kenya’s “Mode of Transmission Analysis,” these findings made the connection
between KPs and HIV transmission [82] and have resulted in the inclusion of KPs in the current

In December 2013, NACC, in collaboration with Robin and Gelmon et al., presented a mathematical
cost-analysis model [83] that was used to assess the HIV needs and contexts of Kenya’s different
populations, including high-risk, medium-risk, and low-risk heterosexuals, sex workers, MSM, IDUs,
truck drivers, migrants, fishing communities and prisoners [83]. The model, presented in the “Kenya
HIV Prevention Revolution Roadmap, Countdown to 2030” [84], proposed a suite of interventions
including behaviour change, early ART, PrEP and male circumcision that can be applied in a tailored
fashion to different risk groups. Information on combinations of interventions, estimates of
resources and funding necessary to reach targets has been given to programme planners at the local
level. But, despite national recognition of the model, it was left to the programme planners in each
of the Kenyan counties to consider how MSM and other key populations are related to identifiable
populations, and how to subsequently target them. In these circumstances, identifying and including
MSM in health care programmes remains a huge challenge, especially as formal and informal
environmental factors—including governmental and legal restrictions as well as overt criminalization
of gender nonconformity in the wider community—contribute to MSM stigmatization and
discrimination. Even if MSM health care needs are considered, it cannot be assumed that good
policies for MSM HIV care will guarantee good outcomes for MSM. In some settings these policies
may help to create improvements in the health care environment, but they may be harmful in other
contexts. In the Kenyan coast, where homophobic cultural, religious and political forces still
dominate, for MSM, laws do not always seem enforceable [11, 85]. Here, vocal opposition to same-
sex behaviour has generated profound impacts across the spectrum of policies, even to the point that research programmes became targets of public attack [11, 86, 87]. The recent rise in antigay movements in Kenya, and elsewhere in SSA, could perhaps be explained by the fact that people increasingly are being open about their sexual orientation. Information technology has increased awareness of what is happening on other continents, making possible real-time discussions across SSA and the world. SSA’s conservative societies often react defensively to this perceived “moral decay”. In such societies, public and political efforts to change a society’s way of understanding its world has to come from internal discourses about gender and sexuality, and these can only take place in a manner that is recognized by members of that society. For example, the worldviews of African traditional religions, or Ubuntu, provide a strong ethic of community, family and respect that potentially could be a source of resistance to MSM sexual discrimination. Referencing Foucault: ‘Revisiting these old ideas and listening to people without an elitist bias can be helpful and relevant’ [88].

When looking at models of nondiscrimination policy in other developing countries, societies that are relatively tolerant toward MSM generally have a longer history of decriminalisation of homosexuality and sustained national commitment to inclusion of MSM in HIV prevention, treatment and care [89]. Brazil, for example, is a country that engages in structural interventions at the national level: by addressing social exclusions and homophobia nationwide, the environment for Brazilian MSM to come forward for HIV health services is enhanced [90, 91]. In countries such as Kenya, Uganda and Nigeria, where the current context for MSM policy reform may be difficult or even impossible in the near future, the MSM sensitivity-training model can potentially shift awareness in the workplace culture and the attitudes of professionals in the short term. In these SSA societies, engagement with and support from community stakeholders have been shown to be even more essential than in environments less hostile to MSM [92]. Forming coalitions with partners who
have the same aim is of utmost importance as a step toward making the upscaling of stigma-free MSM service delivery acceptable.

As the HIV epidemic in Kenya, like elsewhere in SSA, has brought the topic of sexuality into the public agenda [93, 94], gay identity has emerged as a particular discourse in these circumstances [95]. Unlike in the West, SSA’s countries have not benefited from a long history of gay and AIDS activism and gay and AIDS activists are often less well-educated and generally poorer. However, despite the many challenges these men face, including governments active engagement in minimising MSM’s basic rights and capacities, the national press magnifying homophobia, and ever increasing confrontations with hostile communities [96], there is a rise in the gay counter movement and advocacy in different SSA countries. In Kenya, a group of Civil Society Organisations (CSOs) under the umbrella of the CSO Reference Group has been spearheading a campaign that links advocacy for the health of sexual minorities to the achievement of health for all. The CSO Reference Group provides a conducive framework for engagement, referred to as “Act Change Transform,” or ACT! Also, other human-rights defenders such as the Kenya Human Rights Commission and the National Coalition of Human Right Defenders are examples of organised civil groups seeking to enforce “democracy and human rights” while defending the right to have same-sex relationships. Within this movement, the human rights perspective is not only relevant to sex, but also in the response to HIV/AIDS as the right to health would recognize the legitimate health needs of MSM who desire specific medical care and counselling. In this respect it has helped that the UN called for the removal of punitive laws, policies and practices that hamper access to health care services [97-100]. Also, the promulgation of WHO’s guidelines on the prevention and treatment of HIV and other STIs among MSM and transgender people [101] has underscored the importance of MSM health and human rights. However, despite the fact that “the right to health care” is protected in international human-rights laws and expert guidelines are increasingly made available, stigma and discrimination against MSM in SSA persist and may result in life-threatening situations that affect MSM in intensely
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personal ways [102]. The denial of health care after disclosure of sexual orientation to HCPs [1], clearly demonstrated the very direct impact that stigma and discrimination has beyond the law. In this context, our research aimed to design and test a highly applicable service model that would increase MSM access to mainstream STI/HIV prevention and care services already provided by HCPs in health facilities in the coast. With the inclusion of health care services for MSM in existing mainstream HIV health care, a first important step has been taken toward tackling MSM-related stigma and discrimination within the underlying structures of inequality in Kenya’s society.

9.3 Future perspectives

MSM-related stigma in health care facilities has been a symptom of an underlying power imbalance in Kenyan society, unconsciously reinforced and maintained by HCPs. For HCPs to counter such inequality requires that they recognize injustice and are willing to change their attitudes.

Our research has shown not only that changing HCPs’ perceptions of MSM requires great efforts, but also that if HIV-prevention efforts aimed at MSM are to work, future success relies on further stigma reduction among public health officials and in the community at large. Recommendations considered from this research reach across a range of levels: (i) integrating MSM sensitivity training as a principle of medical education, (ii) developing agency and power for sustainable safer sexual behaviour among MSM, (iii) training HCP as community facilitators to reach out to various stakeholders in the wider health care approach, (iv) tracking of utilisation of services by MSM, and (v) building national capacity to conduct MSM research.

9.3.1 Integrating MSM sensitivity training in medical education

From an epidemiological and public-health point of view, public-health structures that address the public-health needs of MSM are essential in mounting an effective HIV response [103]. HCPs
constitute one of the most critical components for translating this principle into meaningful and effective medical practice. Indeed, HCPs who underwent the MSM sensitivity training both tended to perceive the course to be of value and expressed the need for more and better education. By including MSM sensitivity training as an integrated principle of medical education, HCPs can bring about a paradigmatic shift in the conceptualization of health care provision and in their own professionalism. Moreover, adoption of MSM sensitivity training in all medical training syllabuses by professional associations, such as the Kenya Association of Physicians, the National Nurses Association of Kenya and Kenya Association of Professional Counsellors, can send a strong message in the context of health equity.

9.3.2 Developing agency and power

In the process of ongoing development of effective and supportive responses to MSM health care, the government has an exceptionally important role to play as the government’s directives can restrict and restrain, but also may strengthen and foster HCPs’ performance. Combating social ecologies in which homophobia, discrimination, same-sex criminalization, social exclusion, and denial of the right to health hamper MSM antistigma service delivery among HCPs at the local level should become top priority in MoH’s MSM-inclusive policies. It is within NACC and NASCOP’s mandate to train and support HCPs to address and develop MSM agency and power for sustainable safer sexual behaviour and to foster MSM’s individual agency and power for health-seeking.

9.3.3 Training HCP as community facilitators

The MSM sensitivity training was shown to empower HCPs to actively interact and effectively communicate with MSM. Through HCPs’ facilitation, MSM were able to access and participate in peer support, MSM-advocates increased their activity, and Kenyan LGBT organizations provided support services that enabled MSM to voice their needs and concerns. Synergies from partnerships between LGBT organizations, MSM community members, researchers and HCPs are encouraged for
ongoing collaboration and engagement, as they can potentially create unique possibilities for informing and transforming society. Especially, civil society has an important role in improving and/or accelerating innovation to close the gap in HIV prevention and the treatment cascade, including effective linkages to treatment, care and support services. One of our current intervention programmes uses specially trained HCPs and MSM peers with ART experience to help men starting ART for the first time or continuing ART long term [104]. The ‘Washikaji’ (peer navigators) liaise with and are supported by HCPs who underwent the MSM sensitivity training. Moreover, a good number of sensitized HCPs have hold regular MSM sessions and group therapy both for MSM living with, and MSM without HIV, providing information on the prevention, diagnosis, and treatment of HIV and distributing condoms and lubricants. Also, in a recently established Kenyan MSM consortium -involving research sites in Nairobi, Kisumu and Kilifi-, MSM civil society are partners in the design and development of a Mental Health and Addiction assessment. These initiatives and collaborations with civil society bring a new dimension to the ‘health care for all’ approach, as future MSM’s partnerships and involvement in intervention development not only empower MSM as leaders in the field, but also invest in their prosperity and sustainable growth, potentially having a (significant) stigma reduction effect vis a vis health professionals.

Furthermore, it is envisaged that, with time, educational transformation among HCPs will result in changes not only within the medical profession, but also in the society at large. Inasmuch as the sensitivity-training model provided forums that brought together HCPs, policy makers and members of the MSM community, it also drew together HCPs who formed patient support groups, and other community stakeholders, including religious leaders and village elders. Through this extended involvement, the sensitivity-training model may serve as a community-engagement strategy that promotes social change for health equity, aiming to integrate MSM community members into the broader community, while keeping focused on sustained HIV prevention and care outcomes for MSM and the community at large.
9.3.4 Tracking of utilisation of services by MSM

In order to improve the quality of services for MSM for inclusion in the operations of public and private health facilities in SSA, service-delivery guidelines, standardized training curricula and implementation frameworks need to be instituted. Also, indicators will be needed to determine the extent to which MSM make use of the targeted services, and to provide answers to a set of measurable questions. Central to the development and standardization of a “culturally capable, non-discriminatory service” is NASCOP’s role promoting the MSM sensitivity training for HCPs, and encouraging HCPs forming “meaningful” professional partnerships with LGBT organizations, in order to learn from these groups’ experiences and expertise [52, 105].

9.3.5 Building national capacity for MSM research

Planning for HIV intervention studies raises a host of complex and challenging issues for social and behavioural sciences. These issues cluster around two overarching questions: first, how to ensure that any participant, including MSM are recruited into and retained within trials/studies for the requisite period of time and second, how to institute trials/studies that conform to the highest quality standards and leave (MSM) participants and the wider communities better off as a result [106]. In addition to these questions intrinsic to trial/study preparation and design, extrinsic sociobehavioural questions should explore community preparation for potential forthcoming trials and how to prevent wider communities from hampering MSM research and provision of health care to MSM [107].

Building capacity requires finances, and sustainable funding is a prerequisite for further progress. Above all, researchers need to be increasingly vigilant about the needs of MSM and should encourage MSM to articulate their vision, especially where services and communication can be improved. MSM taking part in research should be reassured that research involving them will help to
improve health care policies, creating greater access for a wider MSM community, not exposing them to threats or discrimination.

9.4 Future implementation science and operations research

Engagement of MSM populations and buy-in of various stakeholders and the wider public is critical in ensuring effective translation of MSM HIV research findings into policies and practices. In this respect, research with focus on strengthening collaborations at the institutional level and forming effective partnerships with LGBT organizations is needed and should be part of a future MSM/LGBT public health agenda and programming.

As an extension of the stigma reduction intervention for HCPs described in this thesis, research into the effectiveness in sensitizing community leaders (police and religious leaders) and government to reduce targeted violence towards the MSM community and potentially improve MSM’s access and utilization of HIV prevention and care services, should be conducted. Based on a similar framework of dynamic learning, a sensitivity training intervention for the wider public could be designed to better understand the importance of reducing high rates of HIV transmission among MSM. Such could be integrated as part of a broader HIV prevention approach, and may touch upon understanding of the impacts of community stigmatization, and the critical role of social support. Operations research emphasizing quality of care and prevention approaches for MSM should include uptake of PrEP and other bio-medical interventions. In a conceptual model that was adapted from an access-information-motivation-behavioral (IMB) skills model proposed by Simoni et al. [104], we posited that stigma’s effects would be moderated by peers’ psychosocial support, including trust in providers. Assigning MSM patients to a trained peer could provide support to the uptake and acceptability of ART, possibly immediate ART for MSM with an acute or early HIV infection, and PrEP. Surveillance of MSMs’ uptake and frequency of HIV- and STI testing, partner testing, PrEP- uptake and adherence are additional operational research area of importance.
Conclusions

Our research has shown that changing HCPs’ perceptions of MSM is possible yet requires great effort. The studies presented provided relevant information for frontline HCPs on how to serve MSM better and how sensitised HCPs can strengthen nonjudgmental health care provision. Technical guidance on establishing operational frameworks for engaging and assessing MSM’s sexual risk behaviour were presented, including vital information that helped break down personal barriers to interact with and cover services for MSM. Through guided support, HCPs were able to deliver an increasingly complex array of nonjudgmental services to MSM. This led us to conclude that standardization of the MSM sensitivity training in medical education can achieve a paradigmatic shift in HIV care and health care provision. Moreover, HCPs can play an essential role in widely disseminating and discussing human sexualities needs to further enhance health equity for MSM (and other sexual minorities). We also found that achieving sustained improvements in HIV care and health services for MSM requires addressing stigma among public health officials and in the community at large. The natural synergy for collaboration between MSM community members provided an opportunity for both, HCPs as well as MSM to interact and increase the likelihood that needs, preferences and opinions of the MSM community would be incorporated in future service delivery. Empirical evidence of the MSM sensitivity training for HCPs brought attention to the promise that sensitized HCPs were also able to achieve wider understanding on the importance of engaging MSM in health care more broadly. By stressing and helping to ensure equitable and sustainable access to health services for MSM and other sexual minorities, HCPs became ‘agents of change’ for inclusion of MSM in HIV prevention and care across communities.

Regarding the integration of MSM health care services, the training model has shown to benefit from local input and (local) government ownership. Provided as part of our research findings, the
MSM sensitivity intervention for HCPs has laid the groundwork for the scale-up of MSM services to government and private clinics. Raising public awareness and understanding the importance of MSM health care is a crucial part of efforts to reduce stigma and National policy should put public education at the heart of their efforts. By increasing the power of de-stigmatizing awareness campaigns, MSM’s acute health care needs and their right to health should be advocated and explained to the wider communities, using a broad range of communication methods. Accordingly, establishing a set of foundation documents to provide policy guidance, regionally relevant best practices and evidence for action will strengthen high quality, evidence-based MSM HIV prevention and care interventions across SSA. Finally, HIV and health are not simply biomedical issues but social and political phenomena, which require efforts to change the social and political landscape of inclusion and justice for MSM. With careful planning and coordination, HCPs have the potential to transform the lives of people affected by MSM HIV stigma and discrimination.
REFERENCES


PrEP is a remarkable scientific advance that increases the options for MSM to protect themselves from the HIV virus; by and large, however, it has only been offered in pilot trials, i.e. the iPrEx trial among MSM and transgender women with 44% relative reduction in risk of HIV acquisition [60]; 75% risk reduction among sero-discordant heterosexual couples in the Partners PrEP trial conducted in Kenya and Uganda [61]; 62% risk reduction among heterosexual men and adolescents in rural Malawi: an evaluation of the effect of interview mode on reporting. *Sex Transm Infect* 2006, 82:368-371.

9.1.5 Challenges of implementing PrEP

Although the results of the studies conducted so far are promising, PrEP has not been widely adopted as a prevention strategy. There are several challenges to implementing PrEP, including:

- **Feasibility**: Ensuring that PrEP is accessible and affordable for all who need it.
- **Acceptability**: Ensuring that PrEP is acceptable to individuals and their partners.
- **Adherence**: Ensuring that individuals take the medication as prescribed.
- **Coverage**: Ensuring that PrEP is available in all settings where it is needed.
- **Sustainability**: Ensuring that PrEP is sustainable in the long term.

In order to overcome these challenges, it will be necessary to involve a wide range of stakeholders, including policymakers, health care providers, and community leaders. It will also be necessary to conduct further research to better understand the barriers and facilitators to PrEP implementation.


degenerated


General discussion


PrEP is a remarkable scientific advance that increases the options for MSM to prevent HIV acquisition. The World Health Organization (WHO) has endorsed the use of PrEP for all men who have sex with men (MSM) and transgender individuals, highlighting the urgent need for HIV prevention strategies to reach these populations.

In a recent qualitative study, researchers explored the empowerment of MSM and the role of healthcare providers (HCPs) in addressing power differentials. The study emphasized the importance of awareness of the power dynamics between HCPs and MSM, advocating for the self-empowerment of MSM to combat the negative effects of power imbalances.

The study also underscored the necessity for HCPs to be knowledgeable about MSM issues to feel empowered in their work. It highlighted the need for understanding the ways in which power within society affects power within healthcare structures. The research identified two main streams of thought about why HCPs should consider issues of power when serving MSM.

First, there is a need for HCPs to understand why it is only with understanding of and knowledge about MSM issues that they feel empowered to serve them effectively. Second, HCPs need to be aware of the ways in which their own powerful position either facilitates or inhibits the processes between HCPs and MSM.

The study concluded that recognition of MSM’s right to nonjudgmental health care can potentially empower MSM to combat the negative effects of power differentials on their health. It emphasized the need for healthcare systems to address power dynamics to ensure equitable care for all patients.

PrEP has been shown to be effective in reducing HIV acquisition. A phase I trial of intermittent and daily PrEP in at-risk populations in Kenya resulted in a 62% risk reduction among heterosexual men and 49% risk reduction in the Bangkok Tenofovir study conducted among injecting drug users in Thailand. The efficacy results recently released from the IPERGAY on demand PrEP trial showed an 86% reduced risk of HIV infection, demonstrating the potential of PrEP in reducing HIV transmission.

As evidence and experience show that providing PrEP to those who are most at risk is crucial, implementing PrEP as part of a comprehensive HIV prevention strategy must be observed. The implementation of PrEP, especially in settings like Botswana, requires careful consideration of the integration of PrEP into existing service structures.

The success of PrEP strategies will depend on the presence of qualified HCPs to prescribe and counsel MSM. The ongoing challenges of adherence, particularly to intermittent dosing regimens, highlight the necessity for innovative approaches to support MSM in taking PrEP effectively.

In conclusion, PrEP is a key priority both internationally and in the Kenyan national HIV strategic plan, as evidenced by the endorsement by the WHO. The implementation of PrEP requires a consistent and concerted effort to ensure its success in reducing HIV transmission among MSM and transgender individuals.
General discussion


78. Papo JK, Bauni EK, Sanders EJ, Brocklehurst P, Jaffe HW. Exploring the condom gap: is supply or demand the limiting factor - condom access and use in an urban and a rural setting in Kilifi district, Kenya. AIDS 2011, 25:247-255.


89. Rowe AK, Kachur SP, Yoon SS, Lynch M, Slutsker L, Steketee RW. Caution is required when using health facility-based data to evaluate the health impact of malaria control efforts in Africa. Malar J 2009, 8:209.


61. The solution training model provided valuable insights into the fluidity of the power structures between HCPs and MSM and take ownership. Successfully challenge power structures that prevent change, they need to be part of a more pluralistic form of HCPs' professional practice. Second, for HCPs to be empowered to serve their clients' right to nonjudgmental health care, they must consider their own power dynamics, which may be shaped by cultural, societal, and institutional factors. This understanding can help HCPs recognize and mitigate the potential for bias and discrimination in their interactions with MSM.


63. Spronk R. "Intimacy is the name of the game": Media and the praxis of sexual knowledge in Nairobi. *Anthropologica* 2011, **53**, 145-158.


SUMMARY

Men who have sex with men (MSM) in Kenya, as elsewhere in sub-Saharan Africa, are highly stigmatized by prevailing attitudes and laws against same-sex behaviour. As a result, specific and appropriate strategies to providing HIV health care services for MSM in this region are severely lacking. Until recently, MSM in Kenya had no access to health care facilities at which they could reveal their sexual orientation, or receive treatment. In 2005, the Kenya Medical Research Institute (KEMRI), in collaboration with the International AIDS Vaccine Initiative (IAVI), started to enroll MSM in the Kenyan coast for biomedical research and services were initially provided in the context of research. Following an attack on the research clinic in 2010, in which community members expressed their ignorant anger of services being provided to MSM, the idea was born to develop an education programme to strengthen health care providers’ skills around non-judgmental counselling and specific HIV health care services for MSM in sub-Saharan Africa. In light of this, this thesis includes a series of MSM-related studies conducted in coastal Kenya in the period 2006-2014.

Chapter 2 reports on the results of a capture-recapture estimation of the number of MSM who sell sex in and around Mombasa. Seventy-seven MSM contact locations were identified, including public streets and parks, brothels, bars and nightclubs. Thirty-seven MSM peer leader enumerators extended a recruitment leaflet to MSM who were identified as ‘on the market’, that is, a man who admitted to selling sex to another man. Men were captured on two consecutive Saturdays, while a record was kept of when, where and by whom the invitation was extended and received, and of refusals. The total estimate of MSM who were willing to sell sex deriving from the first capture included 284 men, while the second capture included 484 men of which 186 were recaptures from capture 1. This resulted in a total estimate of 739 MSM (95% confidence interval: 690–798) sex workers in and around Mombasa, representing a population that urgently needed to be targeted by HIV prevention strategies.
Summary

Chapter 3 reports on a feasibility study comparing responses of female and male sex workers on sexual risk behaviour using two methods; the audio computer-assisted self-interview method (ACASI) and the face-to-face interview method (FtF). Study participants, including 259 men and 139 women, most of whom reported sex work in the previous three months enrolled in cohort studies in our clinic in Mtwapa in the Kenyan coast and completed identical risk assessment questionnaires in both modes of delivery. ACASI was able to capture higher median numbers of socially sensitive behaviours, including regular (2 versus 1, p<0.001, both genders) and casual partners in the last week (3 versus 2, p=0.04 in women; 2 versus 1, p<0.001 in men). Group sex (21.6 versus 13.5%, p<0.001 in men), intrajecting drug use (IDU; 10.8 versus 2.3% p<0.001 in men; 4.4 versus 0%, p=0.03 in women), and rape (8.9 versus 3.9%, p=0.002 in men). A surprisingly high number of women reported via ACASI that they had paid for sex (49.3 versus 5.8%, p<0.001). The majority of women (79.2%) and men (69.7%) felt that answers given with ACASI were more honest. This led to the conclusion that ACASI appeared to be a useful tool for high risk behaviour assessments in the African context.

Chapter 4 evaluates the effect of a web-based, self-directed sensitivity training on MSM issues (http://www.marps-africa.org) combined with facilitated group discussions on knowledge and homophobic attitudes among health care providers (HCP) in four districts of coastal Kenya. A formative phase preceded the research and consisted of a preliminary test of the intervention and a training-of-trainer session for National AIDS and STI Control Programme (NASCOP) coordinators. A repeated measure study design was used to evaluate the training, i.e. at baseline and 3-months following completion of the sensitivity training. Seventy-four HCP from 49 anti-retroviral therapy (ART) providing health facilities took part in the online 'self-directed learning', supported by group discussions, focusing on MSM sexual risk practices, HIV prevention and health care specific needs for MSM. At baseline, few HCP reported any prior training on MSM specific sexual practices, and most HCP had limited knowledge of MSM sexual health needs. Homophobic attitudes were most pronounced among HCP who were male, under 30 years of age, who worked in clinical roles in...
government facilities. Three months after the training, more HCP had adequate knowledge compared to baseline (49% vs. 13%, McNemar’s test p≤0.001). This was most prominent in those with clinical or administrative roles from government facilities. Homophobic attitudes had decreased significantly three months after training compared to baseline, particularly among HCP with high homophobia scores at baseline. There was some evidence of correlation between improvements in knowledge and reduction in homophobic sentiment.

**Chapter 5** describes the findings deriving from eight focus group discussions (FGD) with health care providers, prior to and three months after completion of the on-line computer-facilitated MSM sensitivity training. Discussions aimed to characterize health care providers’ challenges in serving MSM patients and impacts of programme participation on health care providers’ personal attitudes and professional capacities. Before participating in the training programme, health care providers described lack of professional education regarding MSM, and personal and social prejudices as barriers to serving MSM patients. After completing the programme, health care providers expressed greater acceptance of MSM patients in their clinics, endorsed the need to treat MSM patients with expected professional standards and demonstrated sophisticated awareness of the social and behavioural risks for HIV among MSM. These findings provided support for the sensitivity training to help health care professionals overcome their prejudicial, homophobic and transphobic attitudes in order to improve the health care services for MSM patients.

**Chapter 6** reports on qualitative methods exploring the provision of MSM health care services two years post the MSM training programme in coastal Kenya. Ten focus group discussions with 63 participants, including the initial trained health care providers, county AIDS coordinators, and MSM from local support groups, were held. Health care providers described continued improvements in their ability to provide non-stigmatizing service provision to MSM-patients since completing the sensitivity training programme, and expressed comfort engaging MSM patients in care. Positive
impacts of this sensitivity and skills training programme were reflected in health care providers’ attitudes two years post-intervention, while four additional recommendations for improving MSM health care services were identified: 1) expanding the reach of MSM sensitivity training across the medical education continuum; 2) establishing guidelines to manage sexually transmitted anal infections; 3) promoting legal and policy reforms to support integration of MSM-appropriate services into health care, and 4) including MSM information in national reporting tools for HIV services.

Chapter 7 presents the results of a systematic review of published literature of MSM studies conducted in sub-Saharan Africa in the period 2011–2014 with the aim to update the on-line sensitivity training (http://www.marps-africa.org) of front-line African health care providers attending to MSM. To investigate if recent studies provided either, important new knowledge currently not addressed in existing online modules, contested information of existing module topics, or added depth to topics covered already, we used learning objectives of the eight existing modules to categorise data from the literature. If data could not be categorised, new modules were suggested. Our review identified 142 MSM studies with data from sub-Saharan Africa, including 34 studies requiring module updates, one study contesting current content, and 107 studies reinforcing existing module content. ART adherence and community engagement were identified as new modules. An adapted set of internet-based MSM sensitivity training modules is currently under development.

Chapter 8 reports on the experiences of MSM and female sex workers in Nairobi and coastal Kenya who used oral pre-exposure prophylaxis (PrEP) for HIV prevention as part of a four-month trial of safety, acceptability and adherence. Fifty-one of seventy-two volunteers who took part in a randomized, placebo-controlled, blinded trial that compared daily and intermittent dosage of PrEP underwent qualitative assessments after completing the trial. Analyses identified three themes: (i) acceptability of PrEP was high, i.e. side effects were experienced early in the study but diminished
over time, however characteristics of pills (shape, colour and size) could improve comfort and use; (ii) social impacts such as stigma, rumours, and relationship difficulties due to being perceived as HIV positive were prevalent; (iii) adherence was challenged by complexities of daily life, in particular post-coital dosing adherence suffered from alcohol use around time of sex, mobile populations, and transactional sex work. These themes resonated across dosing regimens and gender, and while most participants favoured the intermittent dosing schedule, those in the intermittent group noted particular challenges in adhering to the post-coital dose. Culturally appropriate and consistent counselling thoroughly addressing these issues may be critical for PrEP effectiveness.

Chapter 9 discusses how HIV health care services for MSM in Kenya can be strengthened in the context of reported studies. For African MSM, HIV and health are not only biomedical issues but social and political phenomena, requiring huge efforts to change in society. In Kenya, adoption of the MSM sensitization training in all medical training colleges, and by professional associations, including the Kenya Medical Association, National Nurses Association of Kenya and Kenya Association of Professional Counsellors is a first step in sending a strong message in the context of health equity. Whilst inclusion of the MSM sensitization training in health education alone will be insufficient to close the gap in the broader context of cultural, religious, and political anti-MSM sentiment, it may, with careful planning and coordination, achieve a paradigmatic shift in HIV health care and become part of a broader social evolution. Engaging MSM for HIV health care services requires collaborative and participatory approaches in which health care providers across Kenya and beyond have an essential role to play. In conclusion, the MSM-training of HCP in Kenya, as described in this thesis, demonstrated that sensitized HCP in rights constrained environments can strengthen HIV health care services for MSM. Sensitized HCP in this part of the world have the potential to become ‘agents of change’, striving for and enhancing health equity for MSM and other sexual minorities in sub-Saharan Africa.
SAMENVATTING (DUTCH SUMMARY)

Mannen die seks met mannen hebben (MSM) in Kenia worden, net als elders in sub-Sahara Afrika, gestigmatiseerd door diepgewortelde opvattingen over en wetten tegen homoseksueel gedrag. Hierdoor ontbreken specifieke en speciaal op MSM gerichte strategieën voor HIV gezondheidszorg in deze regio. Tot voor kort hadden MSM in Kenia geen toegang tot gezondheidszorg waar zij konden uitkomen voor hun seksuele geaardheid of in aanmerking konden komen voor behandeling. In 2005 is het Kenya Medical Research Institute (KEMRI), in samenwerking met het International AIDS Vaccine Initiative (IAVI), begonnen met het werven van MSM voor biomedisch onderzoek en werd gezondheidszorg aanvankelijk in de context van het onderzoek verstrekt. Echter, als gevolg van een aanval op de onderzoekskliniek in 2010, waarbij mensen uit de gemeenschap hun woede uitten over de aan MSM aangeboden diensten, werd het plan opgevat een onderwijsprogramma voor zorgverleners op te zetten. Dit programma had tot doel vaardigheden voor niet-veroordelend counsellen te bevorderen en specifiek op MSM gerichte HIV gezondheidszorg in sub-Sahara Afrika te versterken. In het kader hiervan, bevat dit proefschrift een aantal MSM-gerelateerde, aan de Keniaanse kust uitgevoerde, studies over de periode 2006-2014.

Hoofdstuk 2 rapporteert over de resultaten van een “vangst-hervangst methodiek” (capture-recapture) waarbij een schatting gemaakt werd van het aantal MSM dat voor geld seksuele diensten verleende in en rond Mombasa. Zevenenzeventig contact locaties voor MSM werden geïdentificeerd, waaronder openbare straten en parken, bordelen, kroegen en nachtclubs. Zevenendertig MSM “peer leaders” gaven een wervingsbrochure aan MSM die de indruk maakten ‘op de markt’ te zijn, dwz een man die toegaf bereid te zijn tegen geld seksuele diensten te verlenen aan een andere man. De mannen werden op twee opeenvolgende zaterdagen geteld. Tevens werd bijgehouden wanneer, waar en door wie de uitnodiging was gegeven en ontvangen, of afgewezen. De totale schatting van MSM die bereid waren om voor geld seksuele diensten te
verlenen, afkomstig uit de eerste vangst, bestond uit 284 mannen, terwijl de tweede vangst 484
mannen bevatte, waarvan 186 ‘recaptures’ waren van de eerste vangst. Dit resulteerde in een totale
schatting van 739 (95% betrouwbaarheidsinterval: 690 - 798) MSM sex werkers in en rond
Mombasa, en daarmee was duidelijk dat dit een doelgroep was waar dringend HIV-preventie
strategieën voor ontwikkeld moesten worden.

Hoofdstuk 3 rapporteert over een haalbaarheidsstudie (feasibility study) die antwoorden op vragen
over seksueel risicogedrag, gegeven door vrouwelijke en mannelijke sexwerkers, vergeleek met
behulp van twee methoden; de “audio computer-assisted self-interview” method (ACASI) en de
“face-to-face interview” methode (FtF). Van de 259 mannen en 139 vrouwen die aan het onderzoek
meededen, rapporteerde een meerderheid sexwerk in de voorafgaande drie maanden en
participeerden allen in het cohort onderzoek in onze kliniek in Mtwapa aan de Keniaanse kust.
Deelnemers aan de haalbaarheidsstudie beantwoordden identieke vragen over risico-gedrag zowel
met ACASI- als met de FtF methode. ACASI legde een hoger gemiddelde van maatschappelijk
gevolge gedragingen vast, zoals reguliere partners (2 versus 1, p<0.001, mannen en vrouwen) en
niet-reguliere partners in de laatste week (3 versus 2, p = 0,04 bij vrouwen; 2 versus 1, p<0.001
bij mannen), groepssex (21,6 versus 13,5%, p<0,001 bij mannen), injecterend drugsgebruik (IDU;
10,8 versus 2,3 %, p<0.001 in mannen; 4,4 versus 0 %, p = 0,03 bij vrouwen), en verkrachting (8,9
versus 3,9 %, p = 0,002, bij mannen). Een verrassend hoog aantal vrouwen rapporteerde via ACASI
betaald te hebben voor seks (49,3 versus 5,8 %, p<0.001). De meerderheid van de vrouwen
(79,2%) en mannen (69,7 %) meende dat antwoorden met ACASI eerlijker waren. Dit leidde tot de
conclusie dat ACASI voor het evalueren van hoog risicogedrag in Afrikaanse context een bruikbare
methode is.

Hoofdstuk 4 evalueert het effect van een “web-based, zelf-sturende sensitivity training”, dat erop
gericht is de kennis van zorgverleners omtrent gezondheidszorg voor MSM te vergroten
(http://www.marps-africa.org). Tegelijkertijd werd, door middel van groepsdiscussies in vier
districten aan de Keniaanse kust, gesproken over kennis en homofobe houdingen van de
Samenvatting

Zorgverleners. Een formatieve fase testte de interventie en trainde trainers in een sessie voor coördinatoren van het National AIDS and STI Control Programme (NASCOP) voorafgaand aan het onderzoek. Om de training te evalueren werd de onderzoeksopzet herhaald (repeated measure), dwz de meting bij baseline werd 3-maanden na voltooiing van de sensitivity training opnieuw uitgevoerd. Vierenzeventig zorgverleners, afkomstig van 49 ART behandel-klinieken, namen deel aan het zelfsturend online leren. Het online leren, ondersteund door groepsdiscussies, was toegespitst op MSM seksueel risicogedrag, HIV-preventie en de specifieke behoeften van MSM op het gebied van gezondheidszorg. Bij aanvang van het onderzoek maakte slechts een paar zorgverleners melding van enig voorafgaand MSM specifieke training en de meeste zorgverleners hadden slechts beperkte kennis van MSM seksuele gezondheidsbehoeften. Homofobe houdingen waren het meest uitgesproken onder de mannelijke zorgverleners, jonger dan 30 jaar met een klinische functie in overheidsziekenhuizen. Drie maanden na de training hadden meer zorgverleners voldoende kennis in vergelijking tot de baseline (49% versus 13 %, de McNemar test p<0.001). Dit was vooral prominent in zorgverleners met klinische en administratieve taken in overheidsziekenhuizen. Homofobe houdingen waren drie maanden na de training sterk afgenomen ten opzichte van baseline, met name onder zorgverleners met hoge scores van homofobie bij aanvang. Er was enige aanwijzing voor een verband tussen verbeteringen in kennis en vermindering van homofobe gevoelens.

Hoofdstuk 5 beschrijft de resultaten van acht focusgroep discusses (FGD) met zorgverleners, vóór- en drie maanden na de voltooiing van de online computer-gefaciliteerde MSM sensitivity training. Discussies richtten zich op het typeren van uitdagingen die zorgverleners in het aanbieden van gezondheidszorg aan MSM patiënten hadden ondervonden en de invloed die deelname aan de training had gehad op de persoonlijke houding en de professionele capaciteiten van de zorgverlener. Vóór deelname aan het trainingsprogramma, kenschetsten zorgverleners gebrek aan professionele educatie met betrekking tot MSM problemen, alsmede persoonlijke en sociale vooroordelen, als...
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barrières voor het verstrekken van goede gezondheidszorg aan MSM patiënten. Na het voltooien van het programma accepteerden zorgverleners MSM meer in hun klinieken, werd de noodzaak om MSM patiënten professioneel te behandelen benadrukt en hadden zorgverleners betere kennis van het HIV sociaal en -gedragsrisico onder MSM. Deze bevindingen onderstrepen het belang van de sensitivity training dat tot doel heeft zorgverleners hun homofobe en transfobe (angst voor transgenderisme en transseksualiteit) houdingen ‘af te leren’, ten einde de gezondheidszorg voor MSM patiënten te verbeteren.

In Hoofdstuk 6 werden kwalitatieve methoden gebruikt waarmee onderzoek werd gedaan naar het aanbod van de gezondheidszorg voor MSM twee jaar na aanvang van het MSM trainingsprogramma in de Keniaanse kust. Tien focusgroep discussies vonden plaats met 63 deelnemers, waaronder de eerst opgeleide MSM zorgverleners, provinciale AIDS coördinatoren en MSM-leden van plaatselijke supportgroepen. Zorgverleners beschreven in toenemende mate niet-stigmatiserende zorg te kunnen verlenen aan en meer vertrouwen te hebben in het betrekken van MSM patiënten in de gezondheidszorg sinds het voltooien van het sensitivity trainingsprogramma. Twee jaar na de interventie waren positieve effecten van het sensitivity training- en vaardigheidsprogramma terug te vinden in de attitudes van de zorgverleners, waarbij vier extra aanbevelingen voor verbetering van MSM gezondheidszorg werden geïdentificeerd: 1) het uitbreiden van het bereik van de MSM sensitivity training in het hele medisch onderwijs 2) het maken van richtlijnen voor seksueel overdraagbare anale infecties; 3) het bevorderen van juridische en politieke hervormingen ter ondersteuning van de integratie van MSM diensten in de gezondheidszorg, en 4) het opnemen van MSM informatie in nationale HIV rapportages.

Hoofdstuk 7 presenteert de resultaten van een systematische literatuurevaluatie van MSM studies uitgevoerd in sub-Sahara Afrika over de periode 2011-2014. Doel van dit review was het updaten van de online sensitivity training (http://www.marps-africa.org) om vervolgens actuele informatie te kunnen verschaffen aan eerste lijns Afrikaanse zorgverleners die MSM patiënten behandelen. We
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maakten gebruik van de acht bestaande, uit de online sensitivity training afkomstige, modules om vast te stellen of recente studies a) belangrijke nieuwe kennis naar voren brachten (momenteel niet gedekt in bestaande online modules), b) de bestaande inhoud ontkrachtten, of c) extra inhoud toevoegden aan reeds beschreven thema’s. Ingeval data niet konden worden ingedeeld, werden nieuwe modules voorgesteld. We identificeerden 142 MSM studies met data van sub-Sahara Afrika, waaronder 34 studies die een moduleverbetering vereisten, één studie die de huidige inhoud ter discussie stelde, en 107 studies die de bestaande modules bekrachtigden. ‘ART adherence’ (therapietrouw) en ‘maatschappelijke betrokkenheid’ werden geïdentificeerd als nieuwe modules. Aan een aangepaste set van de internet-based MSM sensitivity training modules wordt op dit moment gewerkt.

Hoofdstuk 8 doet verslag van de ervaringen die MSM en vrouwelijke sexwerkers in Nairobi en de Keniaanse kust hadden met het gebruik van orale “pre-exposure prophylaxis” (PrEP) - een medicijn ter preventie van HIV-infectie - als onderdeel van een vier maanden durend onderzoek naar de veiligheid, acceptatie en therapietrouw. De studie vergeleek dagelijks PrEP gebruik met een periodieke dosering (dwz twee keer per week en binnen één uur na geslachtsgemeenschap op dagen dat geen PrEP a priori werd genomen). Het onderzoek, waaraan tweeënzeventig vrijwilligers meededen, was gerandomiseerd, placebo-gecontroleerd en geblindeerd. Na afloop van het onderzoek, werd eenenvijftig deelnemers gevraagd naar hun ervaringen. Analyse van deze evaluaties bracht drie thema’s naar voren: (i) acceptatie van PrEP was hoog, dwz bijwerkingen werden ervaren in het begin van de studie, maar namen na verloop van tijd af, maar het uiterlijk (vorm, kleur of grootte) van de pillen zouden gemak en gebruik kunnen verbeteren; (ii) sociale effecten zoals stigmatisering, roddels en relatieproblemen deden zich voor als gevolg van het feit dat PrEP-gebruik werd gezien als een teken dat men HIV-positief was; (iii) therapietrouw werd bemoeilijkt door de complexiteit van het dagelijks leven, in het bijzonder therapietrouw mtb de post-coitale dosering werd negatief beïnvloed door alcoholgebruik tijdens seks, mobiliteit en
Discussies richtten zich op het typeren van uitdagingen die zorgverleners in het aanbieden van baseline, met name onder zorgverleners met hoge scores van homofobie bij aanvang. Er was enige gezondheidszorg aan MSM patiënten hadden ondervonden en de invloed die deelname aan de Hoofdstuk 5 gevoelens.


LIST OF PUBLICATIONS


2. Van der Elst EM, Kombo B, Gichuru E, Omar A, Musyoki H, Graham SM, Sanders EJ, Operario D. "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


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ABOUT THE AUTHOR

The author of this thesis was born in Beverwijk, the Netherlands on September 23, 1960. After graduating from secondary school (Dr Moller College, Waalwijk) she trained as a teacher/remedial teacher at pedagogische academie Mariënburg/Concordia in ’s-Hertogenbosch, and taught children with learning disabilities and behavioural difficulties at schools in Den Helder and The Hague, until 1986. For two years, she worked in Washington D.C. affiliated with the Royal Netherlands Embassy, and Embassy of Belgium. In 1988, she founded an art gallery ("Le Bibelot de l’Hérault) in the French region of the "Languedoc-Roussillon" near Montpellier. In 1989, she joined KLM, as an assistant purser and trainer of staff. In 1996, she graduated with a master degree in Education from the Open University (Milton Keynes), while she lived in Kenya and Puerto Rico (now with her partner Eduard Sanders and two sons, Maxime, born in 1995 and Richard, born in 1997). During the subsequent period, the family expanded with a third son (Reinout, born in 1999) and moved to Ethiopia where their daughter Philine was born in 2001. In 2003, the family moved back to Kenya and settled in Kilifi, on the Kenyan coast. Elise resumed her interest in people with vulnerabilities, she became instrumental in setting up community engagement for men who have sex with men, a particularly stigmatized, and largely invisible group in Kenya. Since 2005, she has been conducting her own research with the aim to strengthen health care for men who have sex with men in the Kenyan coast, of which the results are presented in this thesis.