Ministry of Health

VIRTUAL MAPPING

Harnessing online social networks to reach men who have sex with men in Kenya

Men who have sex with men (MSM), in Kenya, face a disproportionate HIV disease burden with a prevalence (18.2%) three times higher than in the general population [1]. MSM in Kenya meet their sexual partners in a variety of hotspots including homes, massage parlours, road/truck stops, sex dens, beaches, streets and venues (i.e. clubs, bars and hotels) [2]. MSM increasingly use communication technologies, such as mobile and web, to seek their sexual and social partners and connect with their peers [3]. Many

MSM no longer need to come to the hotspots or cannot be reached at other physical venues or homes, thus excluding them from programmes and services. Therefore, new approaches are necessary to map and estimate the actual size of the MSM population including those who do not solicit or cruise in the hotspots and operate in virtual spaces. This brief describes the approach of 'Virtual Mapping' of MSM and findings from the mapping study from three counties in Kenya.

What is Virtual Mapping?

Virtual Mapping (VM) is a method for identifying and estimating the number of MSM, who use mobile and web based technology applications for discreet, social and sexual networking. Geosocial networking mobile applications such as Grindr, and dating sites, specifically for male same-sex introductions, such as Adam4Adam, Gay Exchange, Buddynet and Manhunt are popular among MSM in Kenya. Social networking sites such as Facebook and Twitter, and messenger applications like WhatsApp are widely used by the MSM community. The VM method navigates the virtual communities of MSM, for mapping and estimating hard to reach or hidden MSM, to conduct online outreach and promote prevention and testing services.

Why Virtual Mapping?

Traditionally, key population (KP) estimation and subsequent planning for provision of HIV services were based on mapping of KPs in hotspots and physical venues. However, MSM increasingly use social networking sites and mobile phones to access partners. The anonymity offered by these technologies has seen MSM, who earlier used physical sites, also turning to virtual medium to find each

other. Hidden community members now locate preferred sexual partners with ease through these technologies. Virtual mapping helps to map and estimate the MSM population that use virtual spaces and are unlikely to be reached by venue-based or hotspot based programmes. This can provide new opportunities to effectively engage the hidden or hard to reach MSM for HIV prevention, testing, treatment and care services.

What did the study investigate?

The study mapped websites, applications and online groups, where MSM from Kisumu, Kiambu and Mombasa counties in Kenya, connected with their sexual partners. Specifically, the study looked at MSM in these virtual sites to:

- map the sites and estimate the number of MSM operating in these sites
- explore the overlap between the virtual and physical sites, where they congregate and look for sexual partners
- characterise the profiles of MSM who access the virtual sites
- assess the current HIV testing practices and their unmet needs
- understand the acceptability and feasibility of delivering HIV self-testing services

⚙ Method

This community led mapping study was led by MSM researchers, called as Virtual Mappers, to list global and county specific sites used by their peers to meet with their sexual partners. They gathered information on the websites/apps specific to geography and cities, expected number of registered users, and geo-locations for picking up other MSM. For this, they used either own existing registered online profiles or created new profiles.

The Mappers validated the number of active sites, and gathered geolocation (sub county) specific information. This included day and time of visit to the site, total number of registered users, and the number online at the particular time of login. These helped to estimate the size of the MSM using the identified websites/apps. The Mappers then chose a random sample of 15 virtual sites per county from the list of all validated sites and 10 respondents from each site for individual, face to face interviews.

The study interviewed a total of 435 MSM from Kisumu, Mombasa and Kiambu. It collected information on websites/apps that they are registered with, including multiple user IDs, number of MSM friends on each website, and HIV testing practices; their unmet needs, preferred approach for service delivery and use of geo-locations for accessing other MSM.

The mapping was conducted from June to July 2018.

Number of MSM respondents across counties

KISUMU	MOMBASA	KIAMBU
172	144	119

◎ What did the study find?

A. USE OF VIRTUAL SITES

Notable number of virtual sites are used by a significant number of MSM to meet other MSM

23 internet apps, 18 Facebook accounts and 21 WhatsApp groups were listed, across the three counties, where MSM meet other men. Highest number of sites were listed for Kiambu (43) followed by Mombasa (34) and Kisumu (29). Facebook followed by internet apps and WhatsApp were the preferred platforms for finding partners. A total of 6672 MSM used virtual sites across the three counties.

Number of MSM who used virtual sites by county

KISUMU	MOMBASA	KIAMBU
1567	1469	3635

Three-fourths of MSM in virtual sites also visited physical sites

Approximately 75% of MSM in virtual sites, across three counties, also visited physical sites. MSM who used WhatsApp groups, as compared to other virtual sites, were more likely to visit physical spots. This means that 25% of the MSM, who use only virtual sites and not physical sites, may not be reached by programmes.

Proportion of MSM in virtual sites who visited physical sites by county

KISUMU
80%

MOMBASA
74%
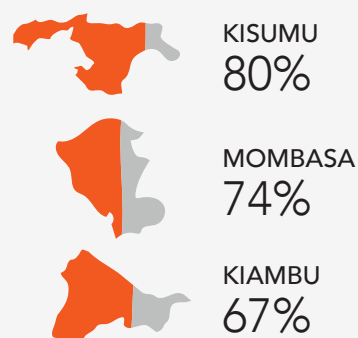
KIAMBU
67%

Multiple virtual sites used by MSM to source partners

Overall, 37% MSM used more than three virtual sites. In Kisumu, 62% of MSM sourced partners from more than three virtual sites as compared to 26% in Kiambu and 16% in Mombasa.

B. GENDER IDENTITY

Most MSM who used virtual sites were young

In all three sites, most MSM who used virtual sites were less than 25 years old with mean age being 24 years.

MSM had anal sex and exchanged money with connections from virtual sites

On an average, each respondent connected with 17 people through these sites in the one week prior to the study. This was highest in Kiambu (23) followed by Kisumu (20) and Mombasa (8). Out of the 17 people with whom connections were made in the previous week, respondents had anal sex with an average of two people and exchanged money with three, highest being in Kisumu.

MSM using virtual sites more likely to be gay and preferred being top

Over two-third of the MSMs using virtual sites self-identified as gay (69%) followed by 30% as bisexuals. Those using Facebook groups were more likely to be gay (77%) as compared to internet apps (68%) and WhatsApp (60%) users. About 42% of the MSM using virtual sites preferred to be on the top followed by bottom (29%) and versatile (25%).

C. SEX SEEKING BEHAVIOUR

Weekends, evenings and nights preferred for partner sourcing

Most MSM went online and sought male partners on Friday, Saturday and Sunday, and during evenings and nights in all the sites.

### MSM using virtual sites had a high number of sexual partners whom they charged money

34% of MSM using virtual sites had more than five male sexual partners in the last month. 59% of MSMs in virtual sites also charged money for sex, highest being in Mombasa (70%) followed by Kisumu (60%) and Kiambu (45%).

D. HIV SERVICES & TESTING UPTAKE

Most MSM received HIV services from peer educators and at physical locations

Overall, 59% of MSM had received HIV services from peer educators (PE) or outreach workers (ORW) in the three months prior to the study. Among these, 49% received services at physical sites followed by 20% at home. Only 28% of WhatsApp users, as compared to 56% of Facebook and 46% of internet app users, visited a clinic or a drop-in-centre for availing services.

Proportion of MSM who received HIV services from peer educators or outreach workers

FACEBOOK	INTERNET APP	WHATSAPP
69%	58%	33%
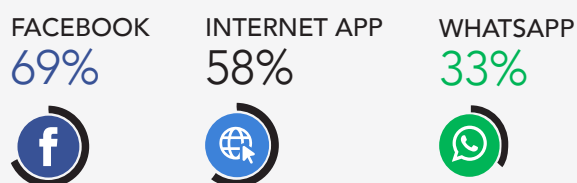
Majority of MSM had tested for HIV

Majority of MSM (83%) had tested for HIV in the last 12 months, highest being in Kiambu (94%) followed by Mombasa (89%) and Kisumu (70%). In Kisumu, majority of the MSM who underwent a HIV test (94%) used a government facility, as compared to those in Kiambu or Mombasa, who did not show a specific preference for a government, private or MSM friendly clinic.

### Fear of breach of confidentiality, the strongest barrier to HIV testing

Nearly half (48%) of the MSM reported concerns regarding the confidentiality of the HIV test and subsequent exposure to stigma as the reason for not getting tested. Fear of positive test results (37%), time required for testing (34%) and lack of perceived risk of HIV (22%) also prevented them from undergoing a HIV test.

E. HIVST AWARENESS & ACCEPTANCE

Few MSM have heard of HIV self-testing

Overall, only 29% of MSM had ever heard of HIV self-testing (HIVST). MSM who used Facebook (33%) and website (31%) were more likely to have heard of self-testing as compared to those in WhatsApp groups (10%).

Proportion of MSM who had ever heard of HIV self-testing

KISUMU	MOMBASA	KIAMBU
44%	35%	14%
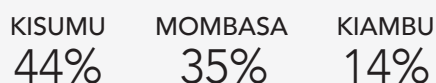
Most MSM expressed willingness to use HIV self-testing kits

A very large proportion (83%) of MSM are more likely to test for HIV using self-testing kits. Three-fourth of MSM would retest for HIV once every three months, if kits are made available.

MSM reported privacy (82%), convenience (64%) and the chance to avoid a visit to the health facility (32%) as the main benefits of self-testing. Peer educators or outreach workers were the most preferred distribution channel for the kits followed by the NGO or the programme (64% vs. 59%).

Proportion of MSM willing to use HIV self-testing kits

KISUMU
90%

MOMBASA
90%

KIAMBU
61%

⚑ Conclusion

Previous MSM estimations were based on programmatic mapping and estimated the size of MSMs in physical locations. For the first time, Kenya has used the novel approach of virtual mapping to identify the virtual sites and estimate the MSM population using these sites.

The virtual mapping estimates suggest that a mapping of MSM in physical locations underestimates the total MSM in counties, as almost a quarter of all MSM do not visit physical locations. Therefore, they are unlikely to receive services regularly through the existing key population programmes. Identifying the hidden MSM through virtual sites will provide an avenue to reach them with HIV prevention and care services.

This study also for the first time assessed the testing needs of MSM including their preference for HIV self-testing. HIV self-testing that can ensure the privacy, convenience and confidentiality for HIV testing offers the potential to reduce the burden of undiagnosed HIV incidences among MSM in Kenya.

🔖 References

1. NASCOP, 2010-2011 Integrated Biological and Behavioural Surveillance Survey among key population in Nairobi and Kisumu, Kenya. Nairobi: Government of Kenya, Ministry of Public Health and Sanitation

2. NACC and NASCOP (2012) Geographic mapping of most at risk populations for HIV (MARPs) in Kenya, National AIDS Control Council and National AIDS and STI Control Programme

3. Stefan Baral, Rachael M Turner, Carrie E Lyons, Sean Howell, Brian Honermann, Alex Garner, Robert Hess III, Daouda Diouf, George Ayala, Patrick S Sullivan, and Greg Millett, Population Size Estimation of Gay and Bisexual Men and Other Men Who Have Sex With Men Using Social Media-Based Platforms JMIR Public Health Surveill. 2018 Jan-Mar; 4(1): e15.