Uptake Of Hiv Self-Testing Among Undiagnosed Msm In Starehe Sub-County, Nairobi City County

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Abstract: HIV continues to be a significant global public health challenge. Recent estimates indicate that approximately 38 million individuals (95% CI: 31.6–44.5 million) are living with HIV worldwide, of whom 81% (95% CI: 68–95%) are aware of their HIV status. Although the overall prevalence of HIV has declined significantly, key populations—such as men who have sex with men (MSM), female sex workers, and people who inject drugs—remain disproportionately affected by a high incidence of HIV infections. HIV testing serves as the critical entry point for both treatment and prevention. As of 2020, data indicated that HIV testing coverage among men who have sex with men (MSM), excluding those already diagnosed with HIV/AIDS, was approximately 45%. However, the proportion of MSM who engage in self-testing remains unknown. This study aimed to establish the proportion of HIV self-testing among undiagnosed MSMs in Nairobi County and to examine the behavioural, psychological, and health care utilization factors influencing HIV self-testing among undiagnosed MSMs in Nairobi County. A cross-sectional study design utilizing a mixed-method approach was employed in this study. The snowball sampling technique selected three hundred and forty-seven study participants. A structured questionnaire was administered to selected respondents. Research assistants with a public health background with research experience involving key populations were hired to collect data. The questionnaires were entered into EPI info version 7 and then exported to STATA version 15 for analysis. Frequencies and percentages were used to describe categorical data, while the chi-square test of independence. Associations were considered significant at $p<0.05$. Ethical approval was sought from the Kenyatta University Ethics Review Committee. Findings show that 75.8% of respondents had ever self-tested for HIV. Among those who had not self-tested, 42.9% were unwilling to self-test. There was no statistically significant association between alcohol use χ^2 *(0.325, df=1, N* =154 *p=0.569)*, smoking χ^2 *(0.5981, df=1, N* =154), *p=0.439*), willingness to pay for self-test kits, anxiety χ^2 *(0.7389, df=1, N* =154), *p=0.854*), depression *(Fisher's exact p=0.56)*, and HIV self-testing. This study recommends that given the high acceptability of self-test kits, the Ministry of Health should implement ways of increasing the availability and accessibility of HIV self-tests. HIV self-test kits should be subsidized to encourage uptake.

Index Terms: MSMs, HIV-Self-testing, uptake, utilization.

I. INTRODUCTION

HIV is still a significant public health problem worldwide. Recent statistics (UNAIDS, 2020) show that 38 million people (C.I 31.6m–44.5m) globally live with HIV, and 81% (C.I 68–95%) of PLHIV are fully cognisant of their HIV status. Over seventy-five percent of the total population and more than 50% of people living with HIV who do not know their status reside in Africa (Njau et al., 2021). In 2014, UNAIDS established a set of ambitious fast-track targets aimed at curbing the HIV epidemic. These goals included ensuring that 90% of individuals living with HIV would know their status, 90% of those aware of their status would receive treatment, and 90% of those on treatment would achieve viral load suppression by 2020. Over the past decade, HIV prevalence has declined substantially. Nevertheless, there has been a marked rise in new infections among key populations. Recent Kenya National population-based HIV statistics in Kenya show a prevalence of 4.9%; across gender, women (6.1%) are disproportionately affected compared to men (3.1%). Per county, Nairobi County reports an HIV prevalence of 3.8% (NASCOP, 2019) and the highest incidence of new infections of 127 per 1000 populations. The HIV prevalence among men who have sex with men (MSM) in Kenya is estimated at 18.2%, four folds higher

than the national HIV prevalence (NASCOP, 2014). Available data on HIV testing coverage among MSM, excluding those living with HIV/AIDS as of 2020, was estimated to be 45% (NASCOP unpublished program data 2020). Sub-counties disaggregate limited data on MSMs' HIV testing estimates. The proportion of those who self-test is unknown; this falls short of the desired HIV testing targets and compounds efforts to mitigate the HIV epidemic due to many undiagnosed MSM. Although HIV self-testing is reported to be widely acceptable, behavioural, psychosocial, and healthcare utilization patterns among men may significantly influence its uptake among men who have sex with men (MSM). (Tun et al., 2018). To this end, this study seeks to determine the factors influencing HIV self-testing among undiagnosed MSM in Nairobi County

2. METHODOLOGY

This study adopted a cross-sectional design and was conducted in Starehe Sub- County, Nairobi County, which has a significant population of men who have sex with men (MSM). Nairobi County, the capital city of Kenya, was chosen due to its high number of identified MSM hotspots, with Starehe Sub-county alone having an estimated MSM population of 1,474. The study population targeted undiagnosed MSM aged 18 years and above who had lived in the area for at least six months and had engaged in anal or sexual intercourse with another man within the past year. Those under 18, living with HIV, or unwilling to participate were excluded. The dependent variable was the uptake of HIV self-testing, categorized as a binary outcome (tested vs. not tested). Independent variables included socio-demographic, psychological, behavioral, and healthcare utilization factors, all measured categorically. A snowball sampling technique was employed due to the hidden nature of the MSM population. Using Yamane's formula, a sample size of 315 participants was calculated from the target population. Data were collected through interviewer-administered structured questionnaires, which included both closed- and open-ended questions, and were divided into five sections aligned with the study objectives. Trained research assistants with public health and HIV testing backgrounds facilitated data collection using paper-based forms. Data were entered into Epi Info 7, exported to Excel, and analyzed using STATA version 15. Descriptive statistics (frequencies and percentages) summarized the data, while Chi-square tests assessed associations between variables, with significance set at $p < 0.05$. Ethical approval was obtained from Kenyatta University and relevant national and local authorities. Participants gave informed consent, and strict confidentiality measures were applied, including the use of non-identifiable codes and password-protected data access.

3. RESULTS

Socio-Demographic Characteristics

Table 1 presents the socio-demographic characteristics of study participants. By age, 54.8% of study participants were between 19 and 26 years, and 39% were between 27 and 34. Most study participants had secondary school education (47.1%), 32.7% had college-level education, and only 5.2% had a primary level of education. Regarding occupation, 24.3% were formally employed, and 38.5% were not. By marital status, 44.4% reported being entirely single, 23.2% were committed to a man, and 17.9% reported being formerly committed to a man. Regarding sexual orientation, 63.2% identified themselves as gay, 32.9% identified as bisexual, and 2% reported being transgender.

Table 1: Socio-Demographic Characteristics of Study Participants

Age	Freq.	Percent
19-26 years	80	54.8
27-34 years	57	39.0
35-42 years	7	4.8
43-50 years	2	1.4

Total	146	100
level of education	**Freq.**	**Percent**
Primary	8	5.2
College	50	32.7
Secondary	54	47.1
University	23	15.0
Total	153	100.0
Occupational Status	**Freq.**	**Percent**
Formally Employed	36	24.3
Not employed	57	38.5
Self-Employed	55	37.2
Total	148	100.0
Description of marital status	Freq.	Percent
Currently committed to a man as if married	35	23.2
Currently married or committed to a woman as if married	12	8.0
Entirely Single Never married or committed to a woman or man as if married	67	44.4
Formerly committed to a man as if married	27	17.9
Formerly married or committed to a woman as if married	10	6.6
Total	151	100
Sexual identity	**Freq.**	**Percent**
Bisexual	50	32.9
Transgender	3	2.0
Decline to answer	3	2.0
Gay	96	63.2
Total	152	100

Proportion of HIV-Self-testing among undiagnosed MSMs in Starehe sub-county, Nairobi County

Table 2 illustrates that 75.8% of study participants have self-tested for HIV, and 24.2% have not.

Table 2: Proportion HIV Self-testing among undiagnosed MSMs in Starehe County, Nairobi County.

Self-Tested for HIV	**Freq.**	**Percent**
No	37	24.2
Yes	116	75.8
Total	153	100

Willingness to self-test for HIV

Among respondents who had never self-tested for HIV, 57.1% expressed willingness to self-test for HIV. 42.9% were not willing to self-test, as illustrated in table 4.3.

Table 3: Willingness to self-test for HIV.

Willingness to self-test for HIV	Freq.	Percent
No	15	42.9
Yes	20	57.1
Total	35	100

4. Discussion

The present study has established that many participants have self-tested for HIV. This significant proportion highlights the acceptability of HIV self-testing in most at-risk groups. About a quarter of respondents reported not to have self-tested for HIV. Results in this study concord with (Ndungu et al., 2023), who established that 55.9% of MSMs in the study had self-tested for HIV. The difference could be attributed to the different data collection periods wherein the latter (Ndungu et al.) collected data between 2018 and 2019. Among those who did not self-test, 57.1% expressed willingness to self-test for HIV; regrettably, 42.9% were unwilling. A qualitative study by (Sircar & Maleche, 2022) corroborates the high proportion of HIV self-testing among MSM in this study. In their study, Sircar et al. found that the relative ease of obtaining an HIV self-test kit at local pharmacies was encouraging and guaranteed some level of confidentiality.

On the contrary, a section of the respondents were apprehensive about the use of the kits, claiming that it may lead to depression in the event one finds out that, they are positive. These assertions could be a plausible reason why a fraction of study participants in this study were not willing to self-test for HIV in the near future. (Knight et al., 2017) aver that study participants found that HIV self-test kits were easy to use, with some imploring that it be provided without cost. A recent meta-analysis revealed that a significant proportion of men who have sex with men (MSM) had not had HIV testing during the last 12 months, with approximately 62% falling into this category. Furthermore, nearly half of the MSM population included in the analysis had never undergone HIV testing.

5. CONCLUSION

HIV Self-Test is widely used among MSM in Starehe Sub-County, although challenges in access and willingness persist. Targeted health communication and subsidized test kits are needed. Further qualitative studies are recommended.

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