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# "Even Though He Had Expressed Willingness to Take PrEP, He Declined When He Noticed the Drugs Were Packed in a Container Like That of ARVs": Exploring Barriers to HIV/AIDS Risk Reduction Among Long-Distance Truckers in Kenya

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## Abstract

**Abstract: Background:** Due to high-risk sexual networks along their transit routes, Long-distance truckers' (LDTs) risk of HIV is known to be high, as evidenced by prevalence rates of 14.34% in the region. Besides, the spaces in which LDTs operate are often marred with a multitude of barriers to HIV/AIDS risk reduction. However, there is limited evidence on the barriers encountered by LDTs in Kenya, hence the need for the current study.

**Methods and Methodology:** We used nine key informants and 18 in-depth interviews from purposively sampled participants, such as nurses and LDT peer educators at Kenya's Busia and Namanga international border points. We used semi-structured interview guides to collect data through audio records. Interviews were transcribed, coded, and thematically analysed using the QDA-Miner software to generate themes and sub-themes around barriers to HIV/AIDS risk reduction among LDTs.

**Findings:** Overall, three themes, namely, health system, individual-level, and trucking career-related barriers emerged. The sub-themes under health system barriers included the location of healthcare facilities far from transit routes, long durations of hospital waiting time, and lack of targeted health facilities for LDTs, among several others. Under trucking career-related barriers, the sub-themes comprised tight work schedules, unfavourable trucking career policies, and insecurity along transit routes. For individual barriers, some of the sub-themes were language barriers and lack of awareness of current HIV/AIDS risk reduction services.

**Conclusion:** Alongside health system factors, individual level and trucking career-related factors were highlighted as the barriers to HIV/AIDS risk reduction among LDTs in Kenya. The existence of these barriers may complicate the fight against the pandemic in this hard-to-reach population, given their already known vulnerability to HIV infections.

## Keywords

barriers, HIV & AIDS, long-distance truckers, risk reduction, qualitative

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## Introduction

Over the last decade, Kenya, among other sub-Saharan African (SSA) countries, witnessed tremendous progress in scaling down the HIV pandemic.[1] Here, according to the most recent Joint United Nations Programme on HIV/AIDS (UNAIDS) report, 56% fewer new HIV infections occurred in the year 2023 compared with 2010, this being the steepest reduction in the globe.[1] While this reflects key milestones made in curbing new HIV infections in the region, pertinent disparities and contextual inequalities experienced in certain groups may postpone or make it impossible to actualise the global goal of ending new infections.[1,2] Specifically, Long-distance truckers (LDTs) are one key population among which a multitude of barriers to HIV risk reduction have been linked to a disproportionately high burden of the disease. Most recent evidence shows that the burden of HIV among LDTs is 3.86% globally and 14.34% in SSA, which is multiplefold compared with that of other migrant groups.[3]

Barriers to HIV risk reduction among LDTs are primarily health system and trucking career-related.[4–9] First, the nature of LDTs' trucking career highly delineates them from routine access to risk screening services like HIV testing.[5] This way, LDTs may find it challenging to meet clinic appointments through which several other HIV prevention services, such as initiation to pre-exposure prophylaxis (PrEP) and screening of sexually transmitted infections (STIs), occur. Thus, LDTs' utilisation of HIV risk reduction services is relatively low.[10,11] Furthermore, in most developing nations, hard-to-reach populations like LDTs face chronic neglect of HIV risk reduction services from mainstream healthcare.[12] As such, targeted HIV risk reduction services are mostly unavailable along various transit routes.

When away in transit and far from their usual places of residence, LDTs often find themselves less restrained from local cultural and social norms to engage in high-risk sexual activities.[13] That way, they freely indulge the equally most at-risk female sex workers (FSWs).[6,7,14] This creates a systemic series of high-risk sexual networks along their transit routes, characterised by poor or lack of condom use and alcohol and drug abuse, among many others.[8,15,16] Also, evidence has shown that most LDTs don't perceive themselves as vulnerable to HIV infections.[17–20] As such, their knowledge and awareness of the current risk reduction services is deficient.[18–20] Ultimately, this multitude of barriers creates an enabling environment through which HIV infections persistently thrive between LDTs and their casual and regular sexual partners, including their spouses. However, evidence of the actual barriers encountered by LDTs in the Kenyan transit routes is limited or doesn't exist.

Consequently, it is imperative to understand the existing barriers among LDTs through their lived experiences or from those who are routinely tasked with providing preventive services to them to bridge the gap on the limited evidence around this area. The study outcomes will inform the formulation of targeted HIV/AIDS risk reduction interventions for the LDTs in the future. Besides, this study will create more insight into how best such barriers can be mitigated to enable more positive outcomes, such as curbing new HIV infections and instituting better follow-up mechanisms to trace those who may have been lost to care and treatment. Eventually, this will play a critical role in realising the global goal to stop new HIV infections and end AIDS by 2030. Therefore, the current study aimed to explore barriers to HIV risk reduction among LDTs in Kenya.

## Methods and Methodology

### *Study Setting, Design, and Population*

The study was conducted at Kenya's Busia and Namanga international border points. The two towns are located at the western border points of Kenya/Uganda and Kenya/Tanzania. While the towns are among the busiest transit gateways between Kenya and the rest of East African countries, they are also key stopover points for LDTs who seek accommodation, and FSWs' services that are abundant here.[21,22] As a result, the two towns were purposively sampled for the current study. In addition, LDTs transiting through the Namanga and Busia towns constitute the larger population of truckers whose HIV prevalence is 14.34%, almost five times that of the general population in the region, according to current evidence.[3]

As part of a larger concurrent triangulation mixed methods design, this study specifically entailed the qualitative arm. Briefly, the larger study involved a baseline quantitative arm on HIV risk assessment and a qualitative arm on exploring barriers to HIV/AIDS risk reduction and existing behaviour change communication strategies targeting LDTs. The baseline study would later inform formulation of a targeted mobile-phone-based HIV/AIDS risk reduction intervention and eventually an evaluation phase. The study is anchored on a subjectivist ontology with an interpretivist epistemology. Thus, the study sought to gain a deeper understanding of the barriers to HIV/AIDS risk reduction through the lenses of relevant healthcare providers and LDTs themselves. As such, the study population entailed nurses, LDT community healthcare mobilisers, a pharmacist, select leaders for a truckers' welfare organisation, and LDT peer educators who offered HIV/AIDS risk reduction services to the LDTs within Busia and Namanga towns. For the current study, the risk reduction services were

defined as the services that lowered the risk of contracting HIV or progressing to AIDS for those who were already living with HIV. The risk reduction services include the use of PrEP, post-exposure prophylaxis (PEP), HIV testing, condom use, sexual partner reduction, avoidance of drug and substance use before or during sexual interactions, and antiretroviral therapy (ART) care and treatment, among many others. Also, LDTs at moderate (30-39%) and high-risk (≥40%) levels of HIV based on the Denver HIV Risk Assessment Score (DHRS) tool in the quantitative arm were purposively sampled to participate in the in-depth interviews.[23] The DHRS scores are based on an individual's reported sexual behaviours, drug and substance use, and utilisation of risk reduction services such as PrEP, among several other parameters. Other healthcare workers who were not directly involved in offering HIV/AIDS preventive services to LDTs, like health record officers, were excluded.

## Sample Size and Sampling

Initially, it was projected that 10–15 key informant interviews (KIIs) and 20–30 in-depth interviews (IDIs) were to be conducted. However, the actual sample size of 9 KIIs and 18 IDIs was informed by the point of saturation. Key informants were purposively sampled from among healthcare workers working with key healthcare facilities at the two study sites. Initially, participants who took part in a quantitative arm of the larger study and had demonstrated a moderate and high risk of HIV/AIDS, based on the DHRS risk assessment tool were purposively sampled and invited to participate in the qualitative study.[23] Briefly, as highlighted above, the DHRS tool categorises individuals at risk scores of low (<30%), moderate (30-39%) and high-risk (≥40%) based on an individual's reported sexual behaviours, drug and substance use, and utilisation of risk reduction services such as PrEP, among several other parameters.

## Data Collection Tools

A KII guide was utilised to gather qualitative information on barriers to HIV/AIDS risk reduction among LDTs. Just like the KII guide, an in-depth interview (IDI) guide was used to gather additional qualitative data on barriers to HIV/AIDS risk reduction among the LDTs. The KII guide mainly focused on exploring key informants' experience with HIV/AIDS risk reduction services such as PrEP, PEP, HIV testing, ART care and treatment, and the impediments they faced toward offering the services to the LDTs. On the other hand, the IDI guide focused on exploring LDTs' experience with the utilisation of HIV/AIDS risk reduction services and the obstacles around utilising them. Prior to the commencement of data collection, one KII guide and one IDI guide were pre-tested at Mlolongo town in Machakos County, Kenya. The KII and IDI guides are given in Supplementary File 1.

## Data Collection

Prior arrangements were made regarding a suitable site where the interview was to be conducted based on the preferences of the key informants. A consent form was given to the key informants detailing the protocol and assuring them of confidentiality and that the process would be voluntary. The KIIs were conducted in either English or Swahili, depending on the language best understood by the key informants. The principal investigator was accompanied by at least one research assistant during the KIIs. While the principal investigator took the participants through the KII guide, the research assistant was tasked with taking shorthand notes and audio recordings. Approximately the KIIs lasted between 30 to 45 min. The KIIs were concluded once a point of saturation was reached. Here, the point of saturation was deemed to have been reached when no more significant insights on the themes and sub-themes emerged from the interviews. Initially, it was estimated that 10 to 15 KIIs were to be conducted. However, by the time the ninth KII was conducted, the principal investigator established that the saturation point had already been achieved and, therefore, there was no need for more.

Given the hard-to-reach nature and constant mobility of the LDTs, the IDIs were deemed suitable to generate an in-depth understanding of LDTs' experiences in barriers to HIV/AIDS risk reduction. The language of choice for the IDIs was either English or Swahili, depending on what the interviewee understood best. Initially, it was estimated that 20 to 30 IDIs were to be conducted. However, by the time the principal investigator had conducted the 18$^{th}$ IDI, saturation was deemed to have been attained. The participants of the IDIs were purposively sampled from among the LDTs registering high HIV risk scores from the main questionnaire in the quantitative arm of the current study. An appropriate venue for the IDIs was sought according to the interviewees' preferences. The interviewees were taken through the study protocol and made aware that the process was voluntary and that their identities would be kept confidential. Approximately, the IDIs lasted between 30 min to one hour. While the principal investigator took some shorthand notes, the interview session was audiotaped for record keeping.

## Research Team and Reflexivity

More importantly, the principal investigator was primarily responsible for conducting all the KIIs and IDIs. The principal investigator was of male gender and a doctoral student with background training in a bachelor's degree in nursing and public health and a master's degree in international health. As such, the principal investigator's

background is likely to have influenced various aspects of the information shared by the participants. First, having no prior connection to the study participants may have made the participants less inclined to share in-depth lived experiences on barriers to HIV/AIDS risk reduction with someone new to them. To mitigate this, the principal investigator started the interviews by creating rapport with the participants to ensure that they felt free to participate and had trust in the conversations. Also, being of the male gender may have facilitated rapport with some LDTs, considering that long-distance trucking is a male-dominated profession where discussions on certain masculine social norms like risk-taking behaviours may be openly shared among men. Nonetheless, the participant's unfamiliarity with the principal investigator may have made them only share the socially desirable responses. To mitigate this, we used open-ended questions to ensure that participants felt at ease to share their authentic experiences throughout the interviews. Furthermore, some LDTs may have been more comfortable discussing issues such as condom use sexual partner dynamics and sexual behaviours with a male principal investigator, hence enriching the discussions during the interviews.

The data collection exercise was supported by two research assistants who had background training in nursing and public health and were both of female gender. The presence of two female research assistants may have introduced an important contrast in the participant interactions. Here, the female gender may have enhanced openness on sexual partner relationship topics. However, chances are that the presence of female research assistants may have made some participants withhold some information due to the cultural perceptions around men sharing sexual health with women.

Being aware of the above potential sources of bias, we took various actions to minimize their effect throughout data collection and analysis. First, while in the field, we took reflective notes to document how our thoughts and assumptions were likely to affect interpretation of the research findings. Moreover, the principal investigator engaged in frequent debriefing sessions with the research team to cross-check and compare responses and interpretations on barriers to HIV/AIDS risk reduction from different participants. Lastly, during analysis, we used triangulation to compare qualitative findings from participants and different interveiwers. Detailed information on the study purpose, objectives, benefits, and risks was shared with the study participants before the start of the actual interviews. The consolidated criteria for reporting qualitative research (COREQ) checklist is given in Supplementary File 2.[24]

## Data Management and Analysis

Data analysis followed a mixed inductive and deductive thematic analysis approach. Here, while some themes were identified in advance, others were derived during the analysis. This approach sought to organise and describe the qualitative data into themes and sub-themes.[25] As such, the analysis followed six steps, namely data familiarisation, generating child and parent codes, clustering the child and parent codes to generate themes and sub-themes, reviewing the themes and sub-themes, defining and naming the themes and sub-themes, and reporting.[25]

The principal investigator, assisted by one research assistant, transcribed and translated the audio-recorded data verbatim. A transcript was generated for each KII and IDI. All transcripts were exported into the QDA-Miner statistical software version 2024.0.5 for analysis.[26] Subsequently, child codes were developed by going through the transcripts and identifying items related to each research question. After the child codes were generated, the researcher categorised them into their respective research questions. The categorisation involved screening the child codes for similarities and differences. Thereafter, the child codes were retrieved and saved in an MS Excel sheet in preparation for clustering to generate parent codes. Child codes that appeared closely related were clustered and merged to form parent codes in the QDA Miner software. From the parent codes, themes and sub-themes were generated.

Afterwards, the principal investigator retrieved an MS Excel sheet from the QDA-Miner software comprising the initial child codes, parent codes (themes and sub-themes), number of mentions for each theme, and number of cases (participants with respect to the themes). A second coder repeated the coding process to verify if the codes aligned with the themes and sub-themes. A third researcher supervised the coding process while resolving disagreements between the two coders during the analysis. Triangulation of the qualitative findings from both the KIIs and IDIs was done.[25] The aim was to complement and compensate for the weaknesses in either of the data collection methods. Here, a comparison of findings from KIIs and IDIs was done to compare and contrast outcomes on barriers to HIV/AIDS risk reduction among the LDTs. Lastly, the essence of each theme and the embedded narrative was captured in the form of a text.

## Ethical Considerations

Ethical approval was granted by the ethical review committee of Jomo Kenyatta University of Agriculture and Technology (JKUAT), under reference number (Ref: JKU/ISERC/02317/1256). Written informed consent was sought and granted from all participants before the start of the interviews. The anonymity and confidentiality of the study participants were ensured by data collection, analysis, reporting and archiving.

**Table 1.** Socio-Demographic and Socio-Economic Characteristics of Key Informants.

| Variable | Category | N = 9 (%) |
|---|---|---|
| Age in years | 18–24 | 1 (11) |
| | 25–34 | 4 (44) |
| | 35–44 | 2 (22) |
| | Above 44 | 2 (22) |
| Gender | Male | 4 (44) |
| | Female | 5 (56) |
| Study Site | Busia | 8 (89) |
| | Namanga | 1 (11) |
| Profession | Nurse | 3 (33) |
| | Pharmacist | 1 (11) |
| | Peer-educator | 1 (11) |
| | Community mobiliser | 2 (22) |
| | Trucker's Association Leader | 2 (22) |
| Years of Experience | 1–4 | 2 (22) |
| | 5–9 | 3 (33) |
| | Above 9 | 3 (33) |

**Table 2.** Socio-Demographic and Socio-Economic Characteristics of In-Depth Interviewees.

| Variable | Category | N = 18 (%) |
|---|---|---|
| Age in years | 18–24 | 4 (22) |
| | 25–34 | 3 (17) |
| | 35–44 | 9 (50) |
| | Above 44 | 2 (11) |
| Study Site | Busia | 10 (56) |
| | Namanga | 8 (44) |
| Profession | Truck Driver | 15 (83) |
| | Assistant trucker | 3 (17) |
| Years of experience | 1–4 | 1 (6) |
| | 5–9 | 8 (44) |
| | Above 9 | 9 (50) |

## Results

### *Characteristics of Study Participants*

The study comprised nine key informants and 18 in-depth interviewees. Almost half of the key informants, 4 (44%), were aged between 25 to 34 years. Most of the key informants were female gender 5 (56%) and were from Busia site 8 (89%), Table 1.

Of the IDIs, half of them were aged 35–44 years. Slightly above half of the in-depth interviewees were from Busia 10 (56%), whereas the majority 15 (83%) of them were truck drivers, Table 2.

### *Barriers to HIV/AIDS Risk Reduction Among Long-Distance Truckers*

The themes identified from data relating to barriers to HIV/AIDS risk reduction were health system barriers, long-distance trucking career-related barriers, and individual barriers. Moreover, sub-themes were also generated. For the health system barriers, the sub-themes included distance of health facilities from transit stopovers, health facility operation hours, hospital waiting time, lack of targeted health facilities for LDTs, cost of healthcare services, inadequate staffing, inadequate infrastructure, use of over-the-counter medication and frequent stockouts of drugs and equipment. The trucking career-related barriers had sub-themes such as tight work schedules, unfavourable long-distance trucking career policies, and insecurity along transit routes. The individual barriers included a lack of awareness of HIV/AIDS risk reduction services, hard-to-convince LDTs, language barriers, stigma, and unsafe sexual interactions with female sex workers. Participants were also asked to recommend possible ways to mitigate the barriers.

## Theme 1: Health System Barriers

The most prominent barriers to HIV/AIDS risk reduction among LDTs were health system factors, as highlighted in the following section. A summary of the themes, sub-themes, codes, and illustrative text is given in Table 3.

### *Distance of Health Facilities from Transit Highways/ Stopovers*

The location of health facilities far away from the main transit corridors used by the LDTs was stated as a barrier to easy access to HIV/AIDs risk reduction services.

Participants felt that the distance in which key health facilities were located along various transit routes made it difficult for them to access key services in time of need easily. Given the nature of the goods they ferry from one location to another and the size of their trucks, participants expressed that they found it hard to leave and access such services, especially the mainstream hospitals. Regarding this, one IDI had the following to say;

> "*You know, not so many of the hospitals are situated near the highway such that you can quickly rush, get the HIV preventive services you want, and come back*." *(IDI015)*

To address this barrier, one participant had the following recommendation;

> "*…if we can have hospitals along the places we stop and park our trucks to rest, and are open for some hours during the night, like until midnight, this can help us access such services". (IDI01)*

**Table 3.** Summary of Barriers to HIV/AIDS Risk Reduction Among LDTs in Both Namanga and Busia Study Sites.

| Theme | Sub-theme | Codes | Illustrative Quote |
|---|---|---|---|
| Health system barriers | Distance of health facilities from transit highways/ stopovers | Distance Far away | *"…not so many of them (health facilities) are situated near the highway such that you can quickly rush, get the HIV preventive services you want, and come back." (IDI015)* |
| | Health facility operation hours | Closed at night Not open | *"Again, some of the private health facilities you will find them closed at night and that is when we have time to attend such services like health checkups. So when we find them closed, we have no other option." (IDI18)* |
| | Hospital waiting time | Slow Wait for long | *"The attendants were friendly but slow. I had to wait for longer than I expected for me to get all the services. I would have preferred if they did it quicker." (IDI07)* |
| | Lack of health facilities targeted for LDTs | No hospital No health facility | *"I have not found any hospital or health facility that is handling truck drivers' health concerns along this route." (IDI16)* |
| | Cost of healthcare services | Expensive Not affordable | *"Some of those private facilities are very expensive, and we don't have so much money with us. You know this job doesn't pay very well." (IDI8)* |
| | Inadequate staffing of healthcare workers | Few Shortage of staff | *"Peer educators and community mobilisers are also very few and cannot handle the huge workload you see here. So the issue of inadequate staffing is a serious challenge." (KI008)* |
| | Inadequate infrastructure | Small space No laboratory | *"Look at our facility there; the space is too small, we don't even have labs. Yes, we are giving STI treatment, but imagine there are no laboratories for screening the actual STI." (KI008)* |
| | Over-the-counter medication | Chemist | *"We just go to the chemist and say our signs and symptoms, and then we are given some drugs." (IDI01)* |
| | Stocks outs and unavailability of drugs | Out of supplies No drugs | *"Sometimes, we run out of supplies. Sometimes, the county delays with supplies. Actually, without the NGOs, we would be highly affected. About PrEP, some truckers are using them, but they may run out of them." (KI002)* |
| Trucking career-related barriers | Tight work schedules and delays | No time Strict deadlines | *"Most of the time, I am very busy trying to compete against time so that I can deliver my cargo in time. I can say I only go to the hospital when I feel sick." (IDI07)* |
| | Insecurity along transit routes | Theft Valuable goods | *"There is a huge challenge of insecurity along the way; there are places where you can't even stop, you have to keep on driving; in such a situation, how I can even access any type of health services." (IDI02)* |
| Individual-level barriers | Lack of awareness/knowledge | Don't know Not aware | *".Remember, we also don't have the IEC materials to share with these truckers. Most of them don't even know about the event-driven PrEP. And remember, the PrEP is very helpful. We are giving those who know about it a whole tin of PrEP so that they can use them when in need."(KI002)* |
| | Language barrier | Can't understand Swahili/English Can't communicate | *"As you have seen with one of my clients, he is a Burundian, and it's his first time here in Kenya; he doesn't understand English and Swahili. He doesn't even understand what we mean when we tell him about HIV testing and PrEP, and we also don't know his home language." (KI006)* |

(continued)

**Table 3.** Continued.

| Theme | Sub-theme | Codes | Illustrative Quote |
|---|---|---|---|
| | Stigma | Shame Fear of being seen as HIV positive | *"Even though he expressed willingness to take the PrEP with him after educating him about it, he resisted the drugs when he saw they were packed in a container like that of ARVs. He said, 'No, but why do the PrEP drugs look like this? No, I won't have them; I am okay without them. I don't want them; even my fellow truck drivers will think I am sick and using ARVs." (KI006)* |
| | Unsafe sexual interactions with FSWs | No condom Risky | *"A sex worker will offer the services you need based on the amount of money you have. They can even be willing to allow you to have sex with them without condom protection as long as you offer something extra above what the normal charges. And you know that can be risky? You may end up contracting some illnesses like HIV." (IDI03* |
| | Hard to convince LDTs | Rushed away Don't want services | *"You see that driver over there? I just talked to him, and he rushed away; he says that he had left his cabin door unclosed, but it's not true. You can see it is closed, so it is the services he didn't want." (KI007)* |

## *Health Facility Operation Hours*

Respondents expressed that the hours in which most health facilities along the transit routes operated didn't align with the timing when most LDTs made a stopover and were free to access the HIV/AIDS risk reduction services. They stated that most health facilities only operated during the daytime and not nighttime hours. They felt that this limited them in accessing key HIV/AIDS risk reduction services given that it is at early and mid-night hours that most of the LDTs make a stopover to have a rest and attend to their personal needs like seeking routine healthcare checkups. Two respondents noted that hospitals remained closed, especially at odd hours, hence likely to miss certain HIV preventive services in time of need;

"*Look at how most of these hospitals operate; you know most are not always open during the day or night. And you know this is when most of us stop to rest and maybe find time to go to the hospital."* (IDI01)

"*At night, most of the health facilities that are close to the highway are closed. Unless you are in a big and busy town like this one, you will not find anywhere to seek the services you want." (IDI16)*

Another respondent felt that some private hospitals had limited time to operate and were not always accessible during the night;

"*Again, some of the private health facilities are closed at night, and that is the only time we have to attend services like health checkups. So when we find them closed, we have no other option." (IDI18)*

## *Hospital Waiting Time*

Participants also felt that the waiting time, especially in public hospitals, highly inhibited them from going for key HIV/AIDS risk reduction services from such facilities. One participant expressed discouragement from having to spend an entire day queueing for services, only to end up being told that the services he was seeking were not available;

"*There (in public hospitals), you know the lines are long. Sometimes, you may have to wait for a day to be treated. So I will not waste time going there; I will look for a pharmacy and go and explain myself and get drugs in less than five minutes and continue with my transit journey." (IDI15)*

Another respondent had an experience of slow healthcare providers contrary to his expectations;

"*The attendants were friendly but slow. I had to wait for longer than I expected for me to get all the services. I would have preferred if they did it quicker." (IDI07)*

## *Lack of Health Facilities Targeted for LDTs*

Participants lamented the lack of healthcare facilities specifically targeted for LDTs along the transit routes or even at some of the international border points as a key

barrier to accessing HIV/AIDS risk reduction services. One IDI felt that having to seek healthcare services in facilities that didn't consider the unique trucking career needs was a key impediment to accessing the required services;

"*When we lack hospitals that are for our needs, and we are to seek services in the ordinary hospitals, we may not always feel that we are being served well; you know we must keep in a hurry." (IDI10)*

Another IDI had an experience of completely not getting any hospitals along specific transit routes;

"*As you can see, I am taking this cargo to South Sudan. It is a very long destination; reaching it will take three weeks. Along the way, there are no hospitals, leave alone those addressing our healthcare needs as LDTs, especially when you get to the south-Sudan side." (IDI02)*

Another IDI shared a slightly different assertion that HIV/AIDS risk reduction services for LDTs were only available at a cost in certain cross-border points and not in between the transit corridors;

"*The only other place I can say these services are available in the cross-border to Tanzania and Zambia at a place called Tunduma. But there you are required to pay for them; they are not for free." (IDI18)*

One key informant recommended the establishment of a healthcare facility targeted for LDTs at the Namanga border point where such a facility was missing;

"*I would say first we get a health unit for truck drivers somewhere here at Border Customs, to provide HIV prevention services for the truck drivers. You know, even the way it is, there is no privacy. Even if we started providing HIV prevention services, there is no safe space where truck drivers can open up about their experiences and even get tested for HIV and get PrEP and PEP. The way HIV preventive services are, a safe space is first needed. Then, they can access the HIV prevention services with some privacy, which would enhance confidentiality among them." (KI009)*

## Cost of Healthcare Services

Participants expressed that a high cost of healthcare services especially in private health facilities was likely to inhibit them from accessing HIV/AIDS risk reduction services from such facilities. One participant had the following to say;

"*We get these services mostly from private facilities. Now the problem is that some of those private facilities are very expensive. You know this job doesn't pay well, and we are also not given a good mileage allowance; it's just some little money." (IDI8)*

A key informant expressed a closely similar challenge. One key informant stated that due to limited resources, they were not able to sustain an adequate number of peer educators for the outreach services;

"*And you know the current organisation can't accommodate more peer educators due to inadequate resources. We also have a problem with inadequate pay for our workers. They get very little. Again, also the pay for the clinicians is not good."* (KI008)

Another key informant highlighted that some Non-governmental organisation (NGO) based health facilities that used to provide LDTs' targeted services had since ceased to operate due to lack of donor funding;

"*We had an NGO called North Star Alliance. They used to be in a blue container over there, but they are no longer around. You know, recently, NGOs have been affected by budget cuts from major funders like USAID. So I think they were affected by that in one way or another, though not so sure, but I know they are no longer in operation." (KI009)*

In addition, some participants highlighted the challenge of inadequate funds to meet healthcare expenses while in transit, such as delayed salaries, lack of transit allowance enough to meet medical expenses, and lack of health insurance coverage. One participant lamented, as stated below;

"*Another challenge we face is delayed salaries. I have depleted all the mileage allowance I had been given at the start of the transit journey. It's tough; thank God I am healthy and not on any medications. Imagine if I were using some drugs for a chronic illness. How would I use them on an empty stomach? Remember, employers also don't provide us with health insurance coverage. If I fell sick in this situation, trust me, I couldn't afford any health services?" (IDI003)*

The following was recommended to address the barrier on the cost of healthcare services by one participant;

"*I wish we had a union for truck drivers so that issues like salary delays could be solved and we can afford treatment services." (IDI03*

## Inadequate Staffing of Healthcare Workers

Inadequate staffing was stated as a key barrier to HIV/AIDS risk reduction among the LDTs. One of the key informants had the following to say;

"*Again, the outreach workers like peer educators and community mobilisers are very few and cannot handle the huge workload you see here. The issue of inadequate staffing is a serious challenge; you see when the truck drivers come and see that the clinicians are few, especially during the outreaches, they will not get the services, and they feel discouraged and go on with their journey because you know they don't have a lot of time to waste around. Only a few clinicians are hired during the outreaches that is why there is the issue of understaffing also in the outreaches." (KI008)*

Another key informant expressed the lack of a counterpart to standby when one of them was on leave, which left them overburdened and unable to deliver HIV/AIDS prevention services effectively in such situations;

"*We are only two of us here, so staff shortage is an issue; that way, we can't even operate at night even if we wished to. Imagine if one of us is on leave, the one left behind finds it hard to even provide services efficiently throughout the week because there is no relief." (KI002)*

To address this barrier, one key informant highlighted the need for more support from peer educators;

"*Yes, if we can get more stakeholders coming in, then they can support more peer educators who are very important in spreading the risk reduction messages among the truck drivers." (KI004)*

### *Inadequate Infrastructure*

Inadequate space in some of the healthcare facilities and lack of essential facilities like laboratories for STI screening was mentioned as a barrier to HIV/AIDS risk reduction. One key informant highlighted the problem of inadequate space as follows;

"*We have a very small space; just see the size of the port health unit. For us to provide HIV risk reduction services, we would need a larger space. Unlike the Busia customs border site, there is no designated health unit specifically targeting truck drivers here." (KI009)*

Besides the inadequate space, another key informant also highlighted the lack of laboratories for STI screening;

"*Like, if you look at our facility here, we don't even have labs. Yes, we are giving STI treatment, but imagine there are no laboratories for screening the actual STI. We need a fully equipped laboratory with STI screening equipment to be sure of what we are treating." (KI008)*

### *Over-the-Counter Medication*

It was mentioned that on some occasions, participants sought over-the-counter medication, somewhat neglecting the procedural screening for accurate diagnosis and treatment. One participant had to say the following;

"*When I talk to my friends who have had such a problem (STI infection), they tell me they go to the pharmacy and explain their signs and symptoms, and they are given treatment. Leave alone the STIs, even when we have other health problems, you know, like I have a fever, or I have a headache, we go the pharmacies around the highway and explain ourselves, and then we are given medication." (IDI15)*

### *Stocks Outs and Unavailability of Drugs*

On the issue of medications, frequent stockouts and unavailability of drugs were expressed as a barrier to HIV/AIDS risk reduction. One key informant expressed a problem with the shortage of STI and PrEP drugs;

"*Sometimes, we run out of supplies. Sometimes, the county delays with supplies. Actually, without the NGOs, we would be highly affected. Some dispensaries and health centres run for a long without supplies like STI treatment drugs. About PrEP, some truckers are using them, but they may run out of them sometimes." (KI002)*

Another key informant highlighted a shortage of oral HIV test kits;

"*We have had a problem with oral HIV test kits; for long they have been out of stock, they just brought more the other day." (KI008)*

Another key informant mentioned that they didn't provide PrEP and PEP for LDTs in their facility as part of the HIV risk reduction services, except for condoms, which they also ran out of stock sometimes;

"*Here we don't do HIV testing, we don't give PrEP and PEP, just some condoms, and we are not always stocked with them." (KI009)*

## Theme 2: Trucking Career-Related Barriers

The long-distance trucking-related barriers had the following sub-themes: tight work schedules, timing and delays at various spots when in transit, insecurity and extortion from highway police traffic, and unfavourable policies.

### Tight Work Schedules, Timing, and Delays

The problem of being delayed along transit routes, especially at international border points awaiting clearance, operating under strictly tight work schedules, and the timing of transit journeys were widely cited as key barriers to HIV/AIDS risk reduction among LDTs. Furthermore, when LDTs are faced with tight work schedules, they may be forced to forgo clinic appointments or fail to have enough time to schedule their HIV/AIDS risk reduction services, such as PrEP refill. One participant felt that strict deadlines left him with little or no time for risk reduction services due to exhaustion;

> "*We have strict deadlines. And when you don't meet those deadlines, you will have problems with your employer. The only time we have is in the evenings when we have parked to rest, and you know we are exhausted then. Like me, I rest in my cabin. Driving long distances is not easy, and you will get exhausted at the end of the day." (IDI16)*

Another participant had a problem with unforeseen delays owing to bureaucratic reasons, especially at international border points;

> "*The other big problem is the delays we sometimes experience at the international border points like here. Sometimes, when your papers are not in order, you can stay here longer than usual while waiting. And sometimes some of these places don't even have health facilities. So getting any form of health services becomes very hard." (IDI02)*

Further, the key informants had more to add to the issue of delays, timing, and tight work schedules. One key informant had an experience with LDTs who missed their drug refill owing to delays in foreign countries or even sometimes due to long queues;

> "*Sometimes the truckers will get delayed in other countries. So, they may miss their drug supplies like ART or PrEP for some days. When there are long queues, like sometimes the queues go all the way to Bumala, you will find that a trucker who wanted to have their refill at a particular time will come and find we have closed. And this is due to the delay. Sometimes the queues will last for two days, and you know we are not operating in the nighttime. So some will still miss the refill or even fail to find us in the odd hours." (KI002)*

Another key informant expressed that the constant mobility and the strict work deadlines unique to LDTs' trucking career were key barriers to accessing HIV risk reduction services;

> "*The main barrier, I think, is the nature of the trucking career. You know truckers are constantly in transit and don't even have enough time to rest and access health services. They have very strict deadlines to meet. I see them rushing to compete against time and get cleared to move on. They will tell you they have only one day to deliver the goods to their destination. So tell me when such a person will find time to access the HIV risk reduction health services." (KI009)*

### Unfavorable Long-Distance Trucking Policies

Participants lamented that the existence of punitive or the lack of policies that addressed their unique needs as LDTs highly affected their ability to access HIV/AIDS risk reduction services. For instance, some participants felt that the lack of a policy that compels employers to recruit truck assistants made it hard to leave their trucks unsupervised to attend to HIV risk reduction services like getting PrEP, PEP, STI screening and treatment, and HIV testing. One IDI expressed the following on the issue of lack of truck assistants;

> "*One challenge I see among fellow truck drivers is them being alone. At least my company has given me an assistant, but that is not the case in every company. You know we need someone to help you. When you want to go for a health service, you will not go because you cannot leave the truck and the loaded goods alone." (IDI08)*

Another IDI stated the following on the issue of the wealthy political class failing to institute policies that compelled the recruitment of truck assistants;

> "*You know these trucks belong to the wealthy people, some who are the politicians and in the position to make policies that force the truck companies to employ both truck drivers and truck assistants. But they will not do that; they want to save more by not employing many people in the companies. So they will not make such policies to avoid extra expenditures on salaries, and when we raise these concerns, no one wants to listen to us." (IDI15)*

Participants also stated that when in foreign countries, they had limited eligibility to access HIV risk reduction services. This was orchestrated by the lack of policies that made it easy for them to do so. One of the participants had this to say;

> "*You know, like for me, who is not Kenyan, I don't mostly go for the Kenyan hospitals when I am here in Kenya. I fear being asked many questions. But you see, when we are here at the customs border point, that facility over there gives us most of the HIV preventive services you may need". (IDI11)*

Participants also lamented that trucking career policies did not allow travelling with their regular partners or wives. This made it hard for them to meet their sexual needs when away in transit. Consequently, to meet their sexual needs, they had to look for FSWs or casual sex workers who are abundantly available along transit stopovers. This is what one participant had to say;

"*As you travel in these trucks, you must be insured in case of an accident. So they can't insure your wife. If an accident happens, they won't compensate her. Again, with the technology nowadays, they have CCTV cameras installed here; if you try having someone unauthorised here, they will dismiss you immediately." (IDI03)*

Another participant felt that political interference made it hard to have policies that eased access to HIV/AIDS risk reduction services;

"*There is a lot of politics. For issues that affect us truck drivers, you will find that politicians are interfering. After all, they also own most of these trucking companies. They don't want any policies that will better our working conditions fearing they could have to spend extra money." (IDI17)*

### *Insecurity Along Transit Routes*

Long-distance truckers ferry valuable goods across diverse transport corridors. This was a primary factor that attracted insecurity along transit routes and stopovers. Participants lamented that it was hard to leave their trucks unsupervised to attend HIV risk reduction services during their routine transit journey. One participant highlighted certain places where it was impossible to access HIV preventive services due to insecurity reasons;

"*There is a huge challenge of insecurity along the way, like places where you can't even stop, you have to keep driving. Should you try to stop, they will steal everything in the truck, and they can also harm you. So, tell me now, in such a situation, how I can even access any health services even if I was severely sick, let alone the HIV preventive services." (IDI02)*

Another IDI had a unique experience with female sex workers who, besides offering transactional sex, had ill intentions of robbing LDTs when drunk;

"*Yes, but nowadays, the highway girls will approach you on this route. You will think they are coming for those other services (transactional sex), and then they will offer you something to take, like a drink. What you don't know is that they have added some drugs to the drink; when you drink, you sleep, and you will wake up two days later when they have robbed you." (IDI14)*

## Theme 3: Individual-Level Barriers

Several individual barriers likely to inhibit HIV/AIDS risk reduction were highlighted. These include lack of awareness/knowledge on existing preventive services/strategies, lack of condom use, stigma, language barrier to foreign truckers, unwilling/hard to convince truckers and female sex workers.

### *Lack of Awareness/Knowledge*

It was expressed that participants lacked knowledge of the most current HIV risk reduction services available, like event-driven PrEP and how to utilise it. One key informant had the following to share;

"*Most of them don't even know about the event-driven PrEP. And remember, the PrEP is very helpful; we are giving those who know about it a whole tin of PrEP so that they can use it when they need it."(KI002)*

### *Hard to Convince LDTs*

It was also mentioned that some LDTs were hard to convince for them to utilise the HIV/AIDS risk reduction services available. This is what some participants had to say;

"*We must convince the truck drivers, but it is not easy. Others will tell you they are coming, but they won't. Like you see that driver over there, I just talked to him, and he rushed away. He says he had left his cabin door unclosed, but it's not true; you can even see it is closed, so it is the services he didn't want." (KI007)*

### *Language Barrier*

Language barrier was highlighted as a key impediment to access to HIV/AIDS risk reduction services, especially for LDTs from outside the country. It was stated that such LDTs could not understand either English or Swahili, and thus difficult for them to be offered available services. A key informant had this to say;

"*We have the language barrier issue, as you have seen with one of my clients. He is a Burundian, and it's his first time here in Kenya. He doesn't understand Swahili or English, so it's challenging to communicate with him. He doesn't even understand what we mean when we tell him about HIV testing and PrEP, and we also don't know his home language." (KI006)*

### *Stigma*

Participants lamented that some LDTs declined to carry condoms when offered them, claiming that they would be labelled as unfaithful. Also, the packaging of PrEP

was said to make LDTs resist using them, claiming that they looked like ARVs, and people would say that they were HIV positive. In particular, one key informant expressed the following on condom stigma;

> "*..As we approach them, we also give them condoms. But you know others will resist picking them; they say they don't want to carry those things, they fear; it's like they have a stigma on them. They will say, when someone sees me with these condoms, they think I am having many female sex partners along the way" (KI005)*

Another key informant had an experience with an LDT who declined to carry PrEP because the drugs were packaged like other ART drugs for HIV treatment;

> "*Even though he expressed willingness to take the PrEP with him after educating him about it, he resisted the drugs when he saw they were packed in a container like that of ARVs. He said, 'No, but why do the PrEP drugs look like this? No, I won't have them; I am okay without them. This will bring problems at home, with my wife. She will think that I am using ARVs. He went further to say, 'If they were packed like normal drugs, I would have taken them, but this way, no, I don't want them; even my fellow truck drivers will start to think I am using ARVs." (KI006)*

### *Unsafe Sexual Interactions with Female sex Workers*

Participants also mentioned the issue of sexual interactions with FSWs without the use of condoms as likely to enhance the risk of HIV and STI infections. A key informant had this to say;

> "*Some truck drivers will spot a beautiful lady, and then they will easily want to engage them for sex, and you find that they don't even have condoms, and in that situation, they can't find anywhere nearby to buy them. So, they will go ahead and have unprotected sex, and then they get in risk of contracting HIV and other STIs." (KI008)*

It was also mentioned that some FSWs were willing to compromise safe sex for some extra charges above the standard rates, elevating the risk of contracting HIV. A participant had this to say;

> "*A sex worker will offer the services you need based on the amount of money you have. They can even be willing to allow you to have sex with them without condom protection as long as you offer something extra above the normal charges. And you know that can be risky? You may end up contracting STIs like HIV." (IDI03)*

To mitigate the challenge of having to seek sexual services from FSWs, a participant suggested the need to be allowed to travel with their spouses;

> "*..If we could be allowed to travel with our spouses, then this issue of female sex workers would not be a problem to us." (IDI03)*

## Discussion

The participants in this study highlighted several pertinent issues that they felt were key barriers to HIV/AIDS risk reduction among LDTs at Busia and Namanga border points in Kenya. These factors fall into themes ranging from health system trucking career-related to individual barriers. While some factors, such as health system and individual barriers, may cut across the LDTs and the general population, others are unique to the LDTs' trucking career, like tight work schedules and delays along transit routes. Therefore, there is a need to formulate HIV/AIDS risk reduction interventions with the barriers unique to the LDTs in mind for optimal health outcomes.

In regards to health system barriers, participants stated that distance to health facilities, hospital operation hours, lack of or insufficient targeted healthcare facilities, inadequate staff, and inadequate space/infrastructure are the main factors that largely inhibit smooth access to HIV/AIDS risk reduction services among LDTs. Generally, limited access to essential healthcare services, including HIV/AIDS risk reduction services among LDTs, is often attributed to their constant mobility when in transit.[12] Due to changing socio-economic dynamics and the surfacing of new trading blocs in the region, new highways far from the traditional healthcare facilities have emerged.[27] Other studies have concluded that the location of healthcare facilities far from highways may adversely affect LDTs' access to healthcare services.[10,12,28] To address this problem, several NGOs have put efforts to locate targeted healthcare facilities closer to highways for easy access to LDTs.[27] However, as alluded to by the participants in the current study, only a handful of targeted healthcare facilities for LDTs' HIV/AIDS risk reduction exist along the Northern Corridor highway. More precisely, targeting healthcare services for LDTs may mean ensuring hospital operating hours conform to the LDTs' rest time, building healthcare facilities at major highway stopovers, and at international border points where LDTs spend considerable time awaiting clearance or routine maintenance for their trucks.[12] The findings also demonstrate the need for healthcare providers to be flexible, such that their hospital operating hours accommodate LDTs' unusual timing for seeking HIV/AIDS risk reduction services in the late hours of the night. A recent study involving LDTs from Kenya and other East African countries has established similar health system barriers consistent with this study.[29]

Closely similar findings have been documented in studies conducted in Mozambique, Togo, Tanzania, and South Africa.[4,5,10,30] From a global perspective, studies have equally documented health system barriers as likely to adversely affect LDTs' access to HIV/AIDS risk reduction services.[31–34] For policymakers, the health system barriers highlighted here should be a wake-up call to advocate for more HIV/AIDS risk reduction services along the Kenya transit highways, not only for LDTs but also for their close sexual network counterparts like FSWs.

Tight work schedules, delays, and unfavourable long-distance trucking policies were the key factors specific to trucking career-related barriers to HIV/AIDS risk reduction. Notably, similar to other global settings, LDTs in East Africa are mainly involved in transporting valuable goods for import or export. As such, LDTs find themselves working under rigorous work schedules with high demands to meet the set deadlines, failure to which they may be subjected to penalties like salary cuts or even dismissal from their job.[35,36] Therefore, for their job security, LDTs hardly find time to access routine HIV/AIDS risk reduction services like HIV testing.[29,37–39] Delays along transit routes due to mechanical breakdowns and complicated bureaucratic clearance systems at international borders have been documented in other studies.[5,40] In Zambia, LDTs claimed that owing to strict and tight work schedules, they couldn't access their routine health checkups, including HIV screening.[41]

Moreover, participants alluded to the lack of policies that favour LDTs, like being allowed to travel with regular sexual partners and varying eligibility for HIV/AIDS risk reduction from foreign countries. In such a scenario, LDTs would resort to having multiple sexual partners along the highways to meet their sexual needs, further elevating their risk of HIV infection, as documented in other studies.[8,14,20,42] Equally important, evidence has shown that LDTs may miss clinic appointments for ART refills or routine HIV/AIDS screening when they find themselves in foreign countries where they have limited eligibility to access healthcare services from local facilities.[29] Nonetheless, the emergence of NGO-based health facilities like IRDO and North Star Alliance specifically targeting LDTs has somewhat cured this problem in the region, though to a narrow extent.[38,39,43]

Self-diagnosis, self-medication with over-the-counter drugs, and frequent stockouts were the factors around the health system barriers theme. It is important to note these factors are not unique to LDTs but may cut across a wider range of other populations, especially in resource-limited settings. Therefore, these findings suggest the need for healthcare stakeholders to sensitise LDTs against self-diagnosis and self-medication practices, especially with STI infections. By doing so, LDTs should be guided always to seek screening of their illnesses from qualified healthcare personnel stationed in healthcare facilities with the right equipment to correct diagnosis and treatment. Consistent with the findings from this study, LDTs in Pakistan have previously reported difficulties accessing timely STI screening and, in turn, resorting to self-diagnosis and medication.[19] A study done in Kenya established that LDTs had the potential to seek the right screening and treatment if offered a comprehensive package of HIV/AIDS risk reduction services.[38] Another study targeting LDTs in Kenya also concluded that offering free HIV/AIDS risk reduction services at highway wellness centres was likely to improve their uptake. Therefore, key healthcare stakeholders have an important role to play in reducing self-medication and over-the-counter drugs among LDTs in this setting. As alluded by the participants in this study, inadequate or frequent stockouts of STI drugs, ARTs, and risk reduction commodities like condoms and HIV test kits is a problem not so strange among LDTs as reported from studies done in Mozambique, the U.S, and South Africa and Pakistan.[4,10,19,44]

On individual barriers, participants highlighted lack of knowledge or being unaware of the existence of HIV/AIDS prevention practices like PrEP, seeking the services of FSWs, stigma, and lack of personal health insurance cover as the key impediments to risk reduction among LDTs. Poor knowledge and poor risk perception of HIV among the LDTs have been shown to make LDTs reluctant to seek HIV/AIDS risk reduction services as well as make them indulge in risky sexual behaviours.[18,20,45] For instance, an estimated 97.5% and 95.6% of LDTs involved in a study in India knew of HIV/AIDS and condom use as appropriate means of transmission. However, the same LDTs still exhibited unsafe sexual practices.[9] While 93.4% of LDTs involved in a study in Peru knew about STIs, they couldn't recognise associated signs and symptoms.[18]

Equally important, poor knowledge of PrEP had been linked to its low uptake across most at-risk populations like FSWs in South Africa.[46] Besides, the abundance of FSWs readily available for LDTs along transit routes has been widely cited as a key driver of STI and HIV transmission.[6–8,14,44,47] Strangely, when the LDTs are detached from their families and community-specific social norms, they find themselves less restrained from rampantly engaging FSWs for commercial sex.[13,14] The findings demonstrating stigma on PrEP due to its packaging, like ARVs, are similar to those of a study done in South Africa where FSWs declined using PrEP on a similar ground.[46] In Kenya, HIV/AIDS-related stigma among LDTs has been linked to their indulgence in risky sexual behaviours.[48] As highlighted in this study, lack of healthcare insurance has been reported as a barrier to HIV/AIDS risk reduction among LDTs in New Mexico.[49]

## Strengths and Limitations

The current study adhered to the consolidated criteria for reporting qualitative research (COREQ) guidelines, thus enhancing the transparency and quality of the findings reported. Also, the study included participants of diverse backgrounds, such as multinational LDTs and multi-professional healthcare workers, which largely enriched the content of the information gathered. Nonetheless, some limitations should be considered while interpreting the findings reported here. First, the fact that the study was conducted in two sites may mean that the information specific to other sites was potentially missed. It is also likely that information that may have been gathered from other personnel who interact with LDTs at different levels, such as at the employer level, was also missed. However, given the UNAIDS call for heightened HIV/AIDS research on most at-risk populations such as LDTs, the current findings on the existing barriers are instrumental in informing targeted interventions.

## Conclusion

Despite LDTs studied here being a hard-to-reach and a most at-risk group, they are still faced with a multitude of barriers to HIV/AIDS risk reduction. The barriers range from the health system, career-related trucking, and bio-medical to individual-related factors. Given the known vulnerability of LDTs to the risk of HIV/AIDS, these barriers may complicate the fight against the pandemic in this population. Eventually, this may postpone the collective UNAIDS goal to end new HIV infections and AIDS by 2030. In order to eliminate the barriers established in this study, the study recommends that health policymakers at the Ministry of Health and the national government should advocate for policies that encourage bringing healthcare services closer to LDTs at highways, international border points, and major stopover points. The scope of the key informants involved in this study was limited to only two study sites, meaning that the perspectives of other key stakeholders, such as LDTs' employers who were not involved in this study, may have been missed. Therefore, we recommend that future studies expand the scope of key informants to accommodate the broader views of potential key informants who didn't participate in this study.

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### Statements and Declarations

#### *Ethical Statement*

Ethical approval was granted by the ethical review committee of Jomo Kenyatta University of Agriculture and Technology (JKUAT), under reference number (Ref: JKU/ISERC/02317/1256). The study was also licensed by the National Commission for Science, Technology, and Innovation, Kenya (NACOSTI), (Ref: NACOSTI/P/24/33837). More approvals were obtained from Busia (Ref: ADM 15/27 Vol.1/151) and Kajiado (Ref: KJD/CC/ADM/45 VOL.V (4) Counties in Kenya.

#### *Informed Consent*

A written informed consent was sought and granted from all participants before the start of the interviews.

#### *Consent for Publication*

All information used in the development of the manuscript is fully anonymized and does not contain any identifying details of study participants. Therefore, publication consent was not applicable.

#### *Author Contribution Statement*

CM conceived the study and methodology, performed administration, data collection, software and analysis and wrote the original draft. KK, JG and GM conceived the study and methodology, supervised the study, writing and reviewing.

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#### *Conflicting Interests*

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

#### *Data Availability*

The datasets and other relevant material used in developing the current study findings are available upon request from the corresponding author. Due to confidentiality and other ethical considerations, given the sensitivity issues surrounding HIV, the data are not publicly available.

## Supplemental Material

Supplemental material for this article is available online.

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