


# Understanding HIV care providers' support for tobacco cessation among people living with HIV in Western Kenya: a formative qualitative study

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## ABSTRACT

**Introduction** Healthcare providers are required to support people living with HIV (PLHIV) to quit tobacco use for improved health outcomes, but it is unclear to what extent they adhere to these requirements. We examined HIV care providers and PLHIV's perceptions of support, and barriers, to providing tobacco cessation.

**Methods** This qualitative investigation was part of a larger study seeking to integrate tobacco cessation into HIV care in Western Kenya (NCT05351606). We conducted 22 key informant interviews with HIV care providers and managers and four focus group discussions (n=28) with PLHIV. The interviews and discussions were audio-recorded, and audio files were transcribed and, when necessary, translated into English for coding and analysis.

**Results** PLHIV rarely disclose or are screened for tobacco use unless a complaint or clinical finding prompts a provider. Despite PLHIV wanting to receive support to quit tobacco use, they feared negative reactions from their providers if they disclosed their tobacco use status. Providers cited several system-related barriers to screening for and providing cessation support for PLHIV, including workload pressure, lack of job aids, tobacco use screening not included as a performance indicator and lack of adequate counselling skills to address tobacco use.

**Conclusions** PLHIV are not routinely screened for tobacco use despite their knowledge of the negative impact of tobacco use on overall health outcomes and desire to quit. System-related barriers hinder providers from providing cessation support. Providers should be trained and equipped with additional skills and resources to integrate tobacco cessation support into routine HIV care.

## INTRODUCTION

In 2020, 22% of the global population used tobacco, with a higher prevalence among men (37%) than women (8%), and 80% of users being from a low- or middle-income country (LMIC).<sup>1</sup> Tobacco use, the leading preventable cause of non-communicable diseases

## WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Healthcare providers are required, by national guidelines, to support people living with HIV (PLHIV) they routinely interact with during their HIV care visits to quit tobacco use for improved health outcomes.

## WHAT THIS STUDY ADDS

⇒ PLHIV are not routinely screened for tobacco use despite their knowledge of the negative impact of tobacco use on overall health outcomes and desire to quit. System-related barriers hinder providers from providing cessation support.

## HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ Understanding the extent to which healthcare providers support people who use tobacco to quit and identifying, and addressing, barriers providers might be encountering is critical in supporting PLHIV to quit tobacco use for improved health outcomes.

and premature deaths, leads to an estimated 8 million deaths annually.<sup>2 3</sup> Tobacco use causes socioeconomic burdens to users and communities.<sup>4</sup> Healthcare expenditure due to tobacco-attributable diseases amounted to 5.7% of global health expenditure and 1.8% of the world's annual gross domestic product in 2012,<sup>4</sup> with approximately 40% of this cost incurred by LMIC. Tobacco use is also associated with self-stigma, loneliness and social isolation, which has been shown to worsen health outcomes.<sup>5</sup>

Tobacco use prevalence is higher among people living with HIV (PLHIV). Compared with those who are HIV negative, PLHIV are one and half times more likely to be tobacco users.<sup>6 7</sup> Tobacco use decreases antiretroviral therapy (ART) efficacy by suppressing the immune system, complicating HIV

treatment outcomes.<sup>8,9</sup> Some studies have shown a link between tobacco use, unsuppressed viral load and low CD4 count.<sup>8,10-12</sup> For instance, Hile *et al* showed that recent tobacco use increased the odds of unsuppressed viral load by 35%.<sup>8</sup> Even with well-managed HIV disease with undetectable viral load, those who use tobacco are substantially more likely to die from lung cancer than from HIV itself.<sup>13</sup> Further, tobacco use among PLHIV has been associated with compromised immune defenses<sup>14</sup> and increased susceptibility to opportunistic infections such as bacterial pneumonia, oral candidiasis and tuberculosis.<sup>15-17</sup> Consequently, there is a direct link between tobacco use and mortality among PLHIV,<sup>18,19</sup> with up to 24% of AIDS-related deaths<sup>18,20</sup> attributed to tobacco. Further, the number of years lost due to tobacco use among PLHIV, an average of 12 years, is two times the number of years lost due to HIV infection.<sup>7,18</sup>

Tobacco cessation interventions such as behavioural counselling (including through a telephone helpline) and pharmacotherapy (eg, nicotine replacement therapy (NRT) and bupropion or varenicline) are effective in promoting quit attempts and successful quitting,<sup>21,22</sup> but their reach among PLHIV in LMIC is limited. In Kenya, a toll-free quitline (1192) is readily available for behavioural cessation support but, cessation medications (NRTs (patches, gums and lozenges), bupropion and varenicline), though approved are not widely available in public health facilities due to cost and other supply chain logistics.<sup>23</sup>

Based on the strategy of primary healthcare (PHC), the Kenya National Guidelines for Tobacco Dependence Treatment and Cessation require that all healthcare providers offer tobacco cessation support to indicated patients they interact with. This multidisciplinary approach, if implemented, is meant to ensure complementing and enriching the work of each specialisation at all levels of care. Further, the guidelines emphasise on strictly implementing the behavioural (the 5As, Ask, Advice, Assess, Assist and Arrange) and brief interventions as well as pharmacological interventions.<sup>24</sup> Tobacco use cessation is also included in the guidelines for HIV treatment<sup>25</sup> for PLHIV who mostly have intentions to quit<sup>26</sup> but lack the necessary support from care providers. Thus, improving access to cessation support is likely to lead to increased tobacco use quit rates among PLHIV. The few studies that explored tobacco treatment for PLHIV in LMIC found that healthcare providers lacked resources or training to provide cessation interventions, limiting patients' access to these interventions.<sup>27,28</sup> Healthcare providers could play an important role in delivering pharmacotherapy and behavioural counselling support for PLHIV who regularly interact with the healthcare system. However, this opportunity is missed for various reasons, including heavy workload and lack of training for providers.<sup>29-32</sup>

Like other sub-Saharan African countries, Kenya is experiencing a dual epidemic of HIV and tobacco, with an estimated 1.5 million PLHIV and 2.5 million tobacco

users. HIV, exacerbated by other conditions, remains one of the country's leading causes of morbidity and mortality. HIV care services are primarily supported by PEPFAR and operationalised by various partners at county level guided by the HIV and AIDS action framework that coordinates HIV response. Although tobacco use screening and brief advice to quit is supposed to be integrated into routine HIV care for providers to screen and provide treatment, the implementation is weak and is often attributed to staffing shortages and work overload.<sup>32</sup> The focus is placed on immediate healthcare needs of PLHIV.

Kenya tobacco use prevalence (11.6%) is more common among men (19.1%) compared with women (4.5%).<sup>33,34</sup> Many of these tobacco users desire and attempt to quit, most of them without support from healthcare provider, and even those who interact with healthcare system only one-third get counselled to quit.<sup>34</sup> Recognising the negative link between tobacco use and HIV infection, the country's tobacco control policies,<sup>35</sup> together with ART guidelines, recommend integrating tobacco cessation into HIV care.<sup>25</sup> Successful implementation of the guidelines requires assessing the nature of tobacco cessation support PLHIV receive, possible barriers to supporting cessation, and empowering providers to address HIV and tobacco-related health challenges concurrently. This holistic approach could prevent tobacco-related diseases that may cancel out the benefits of HIV care.

As PLHIV increasingly become aware of the risks associated with tobacco use, many develop a desire to quit. However, only a small fraction of those who attempt to quit can do so with cessation support.<sup>1</sup> If adequately trained and equipped, healthcare providers are well placed to implement evidence-based tobacco dependence treatment as they have regular contact with PLHIV when they come for their clinic visits. However, increased access and affordability of tobacco cessation interventions within healthcare facilities is needed.<sup>36-38</sup> In this qualitative study, we sought to assess the PLHIV and HIV care providers' perceived support, and barriers, for tobacco use cessation counselling and treatment.

## METHODS

### Study design

This was a cross-sectional qualitative study to assess PLHIV perceptions of, and HIV care providers' support for, tobacco cessation and to assess barriers to providing tobacco cessation counselling and treatment. This paper draws data from 22 key informant interviews (KII) and four focus group discussions (FGD) conducted between 7 and 27 June 2022 in Kisumu County, Western Kenya.

### Study settings and population

This study was the formative component of a larger cluster randomised controlled trial of integrating tobacco cessation intervention into routine HIV care. Our study population consisted of PLHIV receiving care in public

health facilities in as well as healthcare providers and clinic administrators. In Kisumu County (population estimate of 1.2 million<sup>39 40</sup>), most (60%) health facilities are public, and the HIV epidemic remains a significant health challenges,<sup>40 41</sup> despite progress in reducing HIV infections from 20% in 2014 to 8.7% in 2022.<sup>42 43</sup> Kisumu County has 34 public hospitals and 176 public PHC facilities with the physician and nurse to population ratio of 1:44 634 and 1:2383, respectively (the recommended WHO standard ratio is 1:435<sup>40</sup>).

### Sampling and sample size

The sample size of 22 KII with healthcare providers and managers and four FGD with PLHIV was sufficient to reach theoretical saturation of the main themes, including tobacco cessation support provided and associated barriers. KII participants were purposively sampled based on their gender, years of experience providing care to HIV patients and their position in HIV care provision, that is, primarily healthcare providers or managers. For FGD participants (n=28), we considered gender and the subcounty where they received care, which gave us rural-urban dynamics. Due to low prevalence of tobacco use among women (4.1%) compared with men (23.2%),<sup>33</sup> we devised additional strategies to recruit women, including pooling from all 20 health facilities involved in the trial to have one FGD for women. We recruited study participants from the health facilities that reported cases of tobacco use among the population of PLHIV. At these facilities, we introduced the study to the management and sought permission to recruit both providers and PLHIV into the study. We worked with the providers to identify the PLHIV that met our main recruitment criteria, that is, any tobacco use, aged 18 or older, and willing to give informed consent and respond to questions. During the study, the healthcare workers were asked to screen patients for tobacco use who visited the healthcentres, and refer tobacco users to the study team. Thus, the PLHIV participants recruited were those who had self-disclosed to the providers. The identified individuals were briefed about the study and invited to participate in an FGD at a specified time, date and venue on consent. For KII, healthcare providers and managers were identified and approached to schedule a meeting at their convenient time where those consenting were interviewed.

### Data collection

Trained and experienced qualitative research assistants conducted KII and FGD in a private space within the health facilities that were convenient to the participants. The KII and FGD guides were developed in English, translated into Dholuo and Kiswahili, and then back-translated into English to ensure translation accuracy. While the KII were conducted mainly in English, the FGD were conducted in the participants' agreed language of choice and lasted approximately 45–60 min. The interview and discussion guides were developed by the investigators and covered topics on tobacco use, triggers to tobacco use, the impact of tobacco use on health, thoughts and attempts around

quitting, support systems to quit, the role of providers in assisting patients to quit tobacco use, and barriers to supporting PLHIV to quit tobacco use (see online supplemental file 1). Probes and follow-up questions emanated from the participants' responses, and we allowed participants to determine the pace and additional content of the interview and FGD. With permission, the interviews and FGD were audio-recorded and promptly downloaded into password-protected folders on a study computer before being assigned for transcription. Participants were allowed to have a break during the interview if they needed it. This was to ensure they had a settled mind to remain active throughout the data collection process to achieve saturation of the issues we were investigating.

### Data analysis

Audio files were translated into English, as needed and transcribed by experienced transcriptionists. Transcripts were checked for quality before they were uploaded to Dedoose (Sociocultural Research Consultants) for coding. To develop a coding frame, we used a combination of deductive and inductive approaches to benefit from the strengths of each approach. We used the scrutiny techniques proposed by Ryan and Bernard<sup>44</sup> to identify codes and subcodes by paying attention to repetitions, indigenously typologies, metaphors and analogies, transitions, linguistic connectors, and similarities and differences. To achieve intercoder reliability, the first two transcripts were independently coded by three coders who later attended a 3-day meeting to discuss the application of codes and resolve inconsistencies in how the codes were applied. The coders systematically considered each paragraph of the transcript and the code(s) each applied to that paragraph. Any discrepancy in code application to the paragraph was discussed and a consensus reached on the most suitable code application. In some instances, the discrepancies were resolved by redefining, splitting or merging some of the codes in a way that makes it each to apply the codes.<sup>45</sup> After achieving consistency in coding, the remainder of the transcripts were shared among the three coders for individual coding. During the analysis, relevant data excerpts and memos containing analytic notations that contextualised and described emerging key findings were extracted and typical statements used for citations. We used the constant comparative analysis method to discover dominant themes by comparing and contrasting within and between transcripts, gender and job descriptions for providers.<sup>46</sup> The constant comparative analysis enabled us to form categories, establish the category boundaries, assign the segments to categories, summarise the content of each category and find barriers to supporting PLHIV quit tobacco use.

## RESULTS

### Awareness of the adverse effects of tobacco use on health

Both providers and PLHIV were aware of the negative impact of tobacco on HIV treatment. One provider observed that if tobacco use harms HIV-negative people it is much worse for PLHIV.

It [tobacco use] may predispose them to maybe these tumors or cancers and also to respiratory illnesses ... So, I also believe tobacco use will lower immunity ... And at the same time, the HIV is also working, [to bring] the immunity downwards. So, we see two things trying to bring you down. (Male provider with less than 10-year work experience)

Providers also reported a negative link between tobacco use and HIV treatment outcomes. For instance, they stated that people who use tobacco are likely to fail virologically, leading to opportunistic infections and even death.

It is affecting their care provision in that when they smoke continuously like that, you will find they will fail virologically, and once they fail virologically, their immune system will go down, and they will start developing other opportunistic infections. (Female provider with less than 10-year experience)

Due to the negative impact of tobacco use, providers expressed the need to support patients who use tobacco to quit. They reported interest in acting rather than watch patients go down with diseases related to tobacco use.

... it is high time we helped out these people to be able to get out of tobacco because we all know the harms that tobacco does to us or the risks that it predisposes them to ... Yah! And we wouldn't just want to sit and watch some of our clients go down with some of these diseases or ailments because of the use of tobacco. (Female healthcare manager (HCM) with more than 10-year experience)

### Existing desire and attempts to quit tobacco use

PLHIV reported overwhelming desire and efforts to quit tobacco with minimal success, and a desire to be helped to quit.

... I have never managed to quit [tobacco use] despite the efforts to do so over a period of time; I have been looking for ways to quit smoking ... we are currently looking for ways that can help us stop smoking tobacco and, if at all you people [providers] can help us on this then we will be so grateful .... (Male FGD in Nyando Sub-county)

To some people, the desire to stop tobacco use was so intense that they wished they could have taken drastic measures to help them quit.

... I wanted to be taken into the police cell for only 1 or 3 months. I stay there so that it saves me not to smoke this thing. I have tried to stop it, but I go back to it. (Male FGD in Nyakach Sub-county)

Other PLHIV reckoned that stopping tobacco use is a process, and one must progress gradually.

... there is nothing that can be done to make us stop it at once [quitting can only be gradual, not sudden]. We have to be taught and proceed gently until we no longer have the desire to smoke ... So, it's good that we understand that when we start a journey, to start is not to finish. (Male FGD in Muhoroni Sub-county)

### Screening and disclosure of tobacco use

PLHIV indicated that they rarely disclose their tobacco use status to the providers mainly because providers do not ask them, and for fear of negative reactions from the providers, including being stigmatised.

They have not known I am using anything else except alcohol. When they ask me if I use anything else, I say no because I know they would scold me. (Female FGD in Kisumu Sub-county)

Additionally, PLHIV find it hard to disclose their tobacco use status without being asked by the providers despite understanding that the providers need to know about it to provide appropriate help.

You can't go there and start telling the provider that I am smoking tobacco unless he asks you is when you can respond ... maybe the healthcare provider has served you for the past ten years and he is not aware that you are smoking ... therefore it should be the healthcare providers who should know the fact that you are using tobacco so that he delivers both [ARVs and Tobacco medication]. (Male FGD in Nyando Sub-county)

While some PLHIV stated that the healthcare providers were supportive and provided counselling to help them quit, others felt that the counselling was inadequate. Some suggested that health facilities should have dedicated staff to support tobacco users because they were concerned that their routine providers might not have time to attend to their tobacco cessation needs.

He will tell you to stop using that thing, he will tell you to stop using that thing, but the bit of how is what will be lacking, he will just tell you to stop. (Male FGD in Nyando Sub-county)

Further, providers admitted that they do not usually conduct regular tobacco use screening for their patients. Providers only screen patients for tobacco use when prompted by a complaint or clinical finding that points to the effect of tobacco use.

... like you get may [be he has] cough or maybe some tumors. So, in the process you want to know more about their background concerning issues with drugs. So, in the process you learn about their tobacco use; you also dig more and learn more about their alcohol use and also some other substances. (Male provider with more than 10-year experience)

### Barriers to screening for and supporting tobacco cessation

One of the barriers to tobacco use screening and cessation support providers identified was lack of job aids, tools for guiding providers in structured and consistent screening of tobacco users. Without job aids specific to tobacco use, providers tended to concentrate on screening for conditions such as tuberculosis, alcohol use and mental health for which job aids existed.

You see if you have a glance at the files or the forms that are used to follow-up with these clients, you will have more information that will help you diagnose several other

problems such as TB, diagnose alcohol use, diagnose mental illness, and there are job aids specific for this. But for tobacco use, there is no job aid for this [tobacco use screening]. So, identifying it [tobacco use] will be a challenge. (Male provider with less than 10-year experience)

The providers called for development of tobacco use screening and treatment job aid to be placed in patients' files to remind them to consistently screen and support tobacco cessation. Currently, tobacco use screening is limited to when a clinical outcome points to tobacco use.

There are those you can smell. And then there are those, especially those with challenges, you may tend to deal more on their various challenges and occasionally get to know about their tobacco use. But there is no specific job aid or tool that helps you identify this unless as a person you go an extra mile to do this. (Male provider with less than 10-year experience)

Providers also mentioned inadequate skills and knowledge as a barrier to tobacco use screening. They admitted that some of them do not have adequate knowledge and expertise to conduct tobacco cessation counselling because they are not trained and mentored to support tobacco users.

I think most staff are not skilled to handle clients who are taking tobacco ... But you see, no one comes and tells you that if you meet a tobacco client, then these are the steps you are supposed to follow .... Because, there is more weight given to other issues other than tobacco. (Male provider with less than 10-year experience)

Thus, providers thought capacity building on tobacco cessation through on-the-job training can bridge the existing skills and knowledge gap. They argued that training could start with a few staff who can cascade the training and mentorship to other providers within the same facility.

... we have various forms of capacity building that would actually include formal trainings using a particular curriculum ... so [that they] would be able to pass that knowledge and skills to you while we are working together on the same, so mentorship can be on site [or] can also be off site. (Female HCM with more than 10-year experience)

The providers also identified workload and the tendency for some providers to prioritise other health-related concerns over tobacco use as barriers to screening. They expressed concern that introducing tobacco use screening and counselling will likely increase their workload and associated pressure. However, providers at the management level had differing opinions. While the providers cited heavy workload, healthcare managers argued that the critical aspect of tobacco intervention is capacity building and providing leadership.

Well, those work burdens and workflows are just fallacies ... it's only commitment, and everybody will be committed as long as you capacity build and make them understand what they are supposed to do. The problem is when you do not capacity build them, and they don't know what they

are supposed to do. (Male HCM with more than 10-year experience)

As a compromise to the challenge of workload and other competing tasks, providers suggested having specially trained point persons at each facility to handle patients who require tobacco cessation support.

So, this we need just to have the point person for these such that we know, if we met someone with tobacco use, refer them to this person or to this room for follow-up and intervention. So, if we have such, then we see referring a person and handling the case referring is easier than handling a case when you have other things to do. (Male provider with less than 10-year experience)

Some providers observed that tobacco use screening and cessation support gets ignored because it is not listed as a performance indicator in the HIV care programme. They had a strong feeling that until tobacco cessation is considered as one of the performance indicators in HIV care, it is unlikely to be taken seriously and documented.

Because it is not among one of the government indicators. We work so hard towards achieving the targets that we have been given and we also report on all the work that we do. But if there is no indicator showing that we need to report how many clients are taking tobacco you know we cannot really concentrate on it. It's not a priority. (Female provider with more than 10-year experience)

To correct the current situation and start focusing on tobacco use screening and cessation support, HIV care programmes need to embrace bottom-up approach where they collect data to highlight the tobacco use harms to attract government attention rather than waiting for directives from the government.

I think the government will also see need to include it as one of the indicators in the reporting tools. Because if we report so many clients on tobacco, I think there would be something ... So if we start working towards tobacco, I think the government will also pick it. (Female provider with more than 10-year experience)

## DISCUSSION

We found that while providers and PLHIV were aware of the negative impact of tobacco use on HIV treatment and overall health outcomes, screening for tobacco use is inconsistent. In our study, PLHIV neither disclose nor are screened for tobacco use unless a complaint or clinical finding prompts a provider. Despite the desire to receive support from providers to quit tobacco use, PLHIV feared adverse reactions from their providers. At the same time, providers described barriers to providing cessation support related to workload, lack of job aids, tobacco use screening not being a performance indicator, lack of adequate counselling skills to address tobacco use, and competing priorities.

Supporting PLHIV to quit tobacco use is critical to improve their overall health outcomes. Studies have shown that tobacco use significantly reduces life

expectancy of PLHIV by making them susceptible to non-communicable disease.<sup>18 47 48</sup> Lack of cessation support contradicts the goal of HIV care programmes of keeping PLHIV alive and healthy. Given the goal of Kenya's HIV programme, there is an urgent need to support PLHIV to quit tobacco use. The initial step is to commit to routinely screen PLHIV for tobacco use and refer them to the toll-free helpline as well as start them on brief behavioural interventions (5As) and low-cost pharmacotherapies as we await the findings of the main study assessing the impact of integrating combination pharmacotherapy and behavioural interventions into HIV care (NCT05351606).

The GATS-Kenya, Kaai and others showed that nearly two-thirds of people in Kenya (65%) and Zambia (69%) had intentions to quit tobacco use with over half wanting to quit within the next 6 months.<sup>26 34</sup> In our sample, PLHIV expressed a desire to quit, which could be actualised with support from both providers and significant others.<sup>49</sup> Our findings are corroborated by other studies that demonstrate that failing to prioritise tobacco use screening and cessation support leads to tobacco use interventions being ignored within the healthcare systems and therefore not being implemented.<sup>9</sup> Healthcare providers seem to prioritise other disorders, such as intravenous drug and alcohol use at the expense of tobacco use which is often overlooked and not reported in screening and measurement tools. In public healthcare settings, providers report workload pressures as a hindrance to taking on additional tasks of tobacco use screening and support notwithstanding the factor these can be done in a few minutes, especially when referral to a quitline is available. While staff in public health facilities in Kenya are overstretched,<sup>50</sup> critical interventions that improve health outcomes still need to find space in providers' schedules although innovations to improve the workflow and support staff might be needed.

Both disclosure of tobacco use status by PLHIV themselves and screening for it by providers was uncommon. Our findings are similar to several studies that document low rate of tobacco use screening in many sub-Saharan Africa settings.<sup>32 51 52</sup> For instance, Tamirat's study in southern Ethiopia report that only 28% of health workers asked their patients about tobacco use status,<sup>52</sup> comparable to 35% reported by Gichuki and colleagues in Kenya.<sup>32</sup> With screening being an entry avenue to support, the low screening rates may explain why many people who use tobacco desire to quit but only a few receive help. A study among PLHIV in Nairobi shows that while 90% of those sampled were considering quitting within the next 6 months, only 2% had ever received behavioural cessation counselling, and only 8% had ever used NRT.<sup>53</sup> Self-disclosure would be another entry point to tobacco cessation treatment if it were well-harnessed by addressing the fears of stigma and negative consequences among PLHIV when interacting with their providers. Unfortunately, the HIV care landscape is crowded with reports of patients withholding critical

information from providers due to such fears.<sup>54-56</sup> Reassuring patients of blameless interaction with providers is essential for tobacco use disclosure for support.

Providers reported being constrained in offering tobacco use treatment for lack of skills. It is a common practice that health indicators considered as important get deliberately planned for, executed, and monitored by providing necessary training to optimise skills and knowledge. Studies have highlighted inadequate training on tobacco cessation screening and counselling as a barrier to tobacco cessation support.<sup>9 57-59</sup> For instance, a study among PLHIV who inject drugs in Hanoi found that none of the providers interviewed had received any education about tobacco cessation during their schooling. Thus, training, and equipping healthcare providers to offer patient-centred screening and cessation counselling devoid of blame could be a critical strategy to achieve national and global tobacco cessation targets. Further, Gorin and Heck's meta-analysis show that providers trained in tobacco screening and cessation counselling were more successful in promoting cessation, pointing to the value of equipping providers with additional training.<sup>60</sup>

This study had several limitations. We sampled participants from four subcounties out of the seven in Kisumu County. As such we might not have achieved regional diversity to give us a complete picture of tobacco use screening and cessation support status in the county. Further, we relied on patients whose clinical record showed that they were tobacco users because they had self-disclosed during screening by the provider to select participants for FGD. This group of patients may have fundamentally differed from those who might not have disclosed their tobacco use status to their providers. This may have compromised the diversity of views gathered during the FGD. However, this being an exploratory qualitative study that benefits from creating rapport for in-depth data, the participants still provided the key insights necessary to understand their perspectives on cessation support. We used FGD as a method of data collection despite its inherent quality of only collecting group normative information about general perspectives rather than personal scenarios that would contextualise information gathered to make it richer. Finally, the selection of healthcare workers and managers for KII depended on their availability. It is possible that those who were not immediately available because of their duties might have had diverse views from those who were available for the interviews. Despite these limitations, our study provides critical information that contextualises the status of tobacco use screening and cessation support that can guide the choice of responsive interventions.

In conclusion, we have established that often PLHIV neither self-disclose nor are routinely screened for tobacco use in Western Kenya, despite the knowledge of the negative impacts of tobacco use on HIV, ART and overall health outcomes. We also learnt that providers encounter barriers related to workload pressure, inadequate resources and inadequate cessation knowledge

and clinical skills that make tobacco use screening and support challenging. To enhance their life expectancy, it is important to empower providers who routinely engage with PLHIV during clinic visits to screen for tobacco use and provide low-cost and available pharmacotherapies alongside behavioural interventions similar to the NACADA toll-free quit counselling hotline. This can be achieved through training and equipping the providers with the necessary skills and resources to seamlessly integrate the Kenya national guidelines for tobacco cessation into standard HIV care. At a system level, including tobacco use as an indicator could support wider implementation of screening and treatment.

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**Data availability statement** Data are available upon reasonable request. Kenya's Data Protection Act 2019 prohibits sharing data unless with express permission from the Data Commissioner. In the event the data is required, we will seek authorization from the commissioner and then share the data.

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#### REFERENCES

- WHO. Tobacco. 2022. Available: <https://www.who.int/news-room/fact-sheets/detail/tobacco> [Accessed 15 Feb 2023].
- Gathecha G, Kiptui D, Kendagor A, et al. Tobacco related morbidity among patients hospitalized at Kenyatta national referral hospitals Kenya. *Tob Induc Dis* 2018;16.
- Walekhwa SN, Kisa A. Tobacco use and risk factors for hypertensive individuals in Kenya. *Healthcare (Basel)* 2021;9:591.
- Goodchild M, Nargis N, Tursan d'Espaignet E. Global economic cost of smoking-attributable diseases. *Tob Control* 2018;27:58–64.
- Philip KE, Bu F, Polkey MI, et al. Relationship of smoking with current and future social isolation and loneliness: 12-year follow-up of older adults in England. *Lancet Reg Health Eur* 2022;14:100302.
- Althoff KN. The shifting paradigm of care for adults living with HIV: smoking cessation for longer life. *J Infect Dis* 2016;214:1618–20.
- Mdege ND, Shah S, Ayo-Yusuf OA, et al. Tobacco use among people living with HIV: analysis of data from demographic and health surveys from 28 low-income and middle-income countries. *Lancet Glob Health* 2017;5:e578–92.
- Hile SJ, Feldman MB, Alexy ER, et al. Recent tobacco smoking is associated with poor HIV medical outcomes among HIV-infected individuals in New York. *AIDS Behav* 2016;20:1722–9.
- Chockalingam L, Ha TV, Bui Q, et al. Barriers and facilitators to smoking cessation among HIV-infected people who inject drugs (PWID) in Hanoi, Vietnam: a qualitative study. *Cancer Causes Control* 2021;32:391–9.
- Mwita. Effect of cigarette smoking on CD4 count and viral load among HIV patients attending treatment at Nebraska medicine. *Capstone Exp* 2020. Available: [https://digitalcommons.unmc.edu/coph\\_slce/118](https://digitalcommons.unmc.edu/coph_slce/118)
- Marshall MM, McCormack MC, Kirk GD. Effect of cigarette smoking on HIV acquisition, progression, and mortality. *AIDS Educ Prev* 2009;21:28–39.
- Steel HC, Venter WDF, Theron AJ, et al. Effects of tobacco usage and antiretroviral therapy on biomarkers of systemic immune activation in HIV-infected participants. *Mediat Inflamm* 2018;2018:8357109.
- Reddy KP, Kong CY, Hyle EP, et al. Lung cancer mortality associated with smoking and smoking cessation among people living with HIV in the United States. *JAMA Intern Med* 2017;177:1613–21.
- Qiu F, Liang C-L, Liu H, et al. Impacts of cigarette smoking on immune responsiveness: up and down or upside down *Oncotarget* 2017;8:268–84.
- Kariuki W, Manuel JI, Kariuki N, et al. HIV and smoking: associated risks and prevention strategies. *HIV AIDS (Auckl)* 2016;8:17–36.
- Burns DN, Hillman D, Neaton JD, et al. Cigarette smoking, bacterial pneumonia, and other clinical outcomes in HIV-1 infection. Terry Bein community programs for clinical research on AIDS. *J Acquir Immune Defic Syndr Hum Retroviro* 1996;13:374–83.
- Ramin B, Kam D, Feleke B, et al. Smoking, HIV and non-fatal tuberculosis in an urban African population. *Int J Tuberc Lung Dis* 2008;12:695–7.
- Helleberg M, Afzal S, Kronborg G, et al. Mortality attributable to smoking among HIV-1-infected individuals: a nationwide, population-based cohort study. *Clin Infect Dis* 2013;56:727–34.
- Lifson AR, Neuhaus J, Arribas JR, et al. Smoking-related health risks among persons with HIV in the strategies for management of antiretroviral therapy clinical trial. *Am J Public Health* 2010;100:1896–903.
- GBD 2019 Tobacco Collaborators. Spatial, temporal, and demographic patterns in prevalence of smoking tobacco use and

- attributable disease burden in 204 countries and territories, 1990-2019: a systematic analysis from the Global Burden of Disease Study 2019. *Lancet* 2021;397:2337-60.
- 21 Krist AH, Davidson KW, Mangione CM, *et al*. Interventions for tobacco smoking cessation in adults, including pregnant persons: US preventive services task force recommendation statement. *JAMA* 2021;325:265-79.
  - 22 U.S. Department of Health and Human Services. *Smoking cessation. a report of the surgeon general*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2020.
  - 23 Tobacco Control Data Initiative. Tobacco cessation in Kenya. Available: <https://kenya.tobaccocontroldata.org/en/home/cessation> [Accessed 18 Apr 2024].
  - 24 MoH M of H. *National guidelines for tobacco dependence treatment and cessation*. Tobacco Control Unit (TCU), Division of Non Communicable Diseases, 2017.
  - 25 Ministry of Health (MoH), National AIDS & STI Control Program (NAS COP). *Kenya HIV prevention and treatment guidelines*. Nairobi, Kenya: NAS COP, 2022.
  - 26 Kaai SC, Fong GT, Goma F, *et al*. Identifying factors associated with quit intentions among Smokers from two nationally representative samples in Africa: findings from the ITC Kenya and Zambia surveys. *Prev Med Rep* 2019;15:100951.
  - 27 Martinez U, Simmons VN, Sutton SK, *et al*. Targeted smoking cessation for dual users of combustible and electronic cigarettes: a randomised controlled trial. *Lancet Public Health* 2021;6:e500-9.
  - 28 Jafry MZ, Martinez J, Chen TA, *et al*. Behavioral health care provider's beliefs, confidence, and knowledge in treating cigarette smoking in relation to their use of the 5A's intervention. *Addict Behav Rep* 2023;17:100493.
  - 29 Orlando Y, Majumdar A, Sreedevi A, *et al*. A qualitative study exploring the views on tobacco use and cessation support among patients in Kenya. 2020.
  - 30 Orlando Y, Mathai M, Kuria M, *et al*. Effect of a group tobacco cessation behavioral intervention among patients with mental illness in Kenya: results from a controlled clinical trial. *Popul Med* 2022;4:1-10.
  - 31 Okoli CTC, Greaves L, Bottorff JL, *et al*. Health care providers' engagement in smoking cessation with pregnant smokers. *J Obstet Gynecol Neonatal Nurs* 2010;39:64-77.
  - 32 Gichuki JW, Opiyo R, Mugenyi P, *et al*. Healthcare providers' level of involvement in provision of smoking cessation interventions in public health facilities in Kenya. *J Public Health Afr* 2015;6:523.
  - 33 Ngaruiya C, Abubakar H, Kiptui D, *et al*. Tobacco use and its determinants in the 2015 Kenya WHO STEPS survey. *BMC Public Health* 2018;18:1223.
  - 34 MoH M of H, KNBS KNB of S. Kenya global adult tobacco survey (GATS) 2014 survey report. WHO. 2014. Available: <http://www.who.int/tobacco/surveillance/survey/gats/Kenya-report-2014.pdf>
  - 35 Wisdom JP, Juma P, Mwangomba B, *et al*. Influence of the WHO framework convention on tobacco control on tobacco legislation and policies in sub-Saharan Africa. *BMC Public Health* 2018;18:954.
  - 36 Pipe AL, Evans W, Papadakis S. Smoking cessation: health system challenges and opportunities. *Tob Control* 2022;31:340-7.
  - 37 McFall M, Saxon AJ, Malte CA, *et al*. Integrating tobacco cessation into mental health care for posttraumatic stress disorder: a randomized controlled trial. *JAMA* 2010;304:2485-93.
  - 38 Rutebemberwa E, Nyamurungi K, Joshi S, *et al*. Health workers' perceptions on where and how to integrate tobacco use cessation services into tuberculosis treatment; a qualitative exploratory study in Uganda. *BMC Public Health* 2021;21:1464.
  - 39 United Nations World Population Prospects. Kisumu, Kenya metro area population 1950-2022. 2022. Available: [www.macrotrends.net](http://www.macrotrends.net) [Accessed 26 Dec 2022].
  - 40 County Government of Kisumu. *Kisumu county integrated development plan 2018 - 2022*. Nairobi, 2017.
  - 41 County Government of Nairobi (CGN). *Nairobi county integrated development plan 2018 - 2022*. Nairobi: Government Printer, 2018.
  - 42 UNAIDS. *Seizing the moment: tackling entrenched inequalities to end epidemics*. Geneva: UNAIDS, 2020.
  - 43 KNBS, ICF. *Kenya demographic and health survey 2022. Key indicators report*. Nairobi, Kenya, and Rockville, Maryland, USA: KNBS and ICF, 2023.
  - 44 Ryan GW, Bernard HR. Techniques to identify themes. *Field methods* 2003;15:85-109.
  - 45 O'Connor C, Joffe H. Inter-coder reliability in qualitative research: debates and practical guidelines. *Int J Qual Methods* 2020;19:160940691989922.
  - 46 Boeije H. A purposeful approach to the constant comparative method in the analysis of qualitative interviews. *Qual Quant* 2002;36:391-409.
  - 47 Rahmanian S, Wewers ME, Koletar S, *et al*. Cigarette smoking in the HIV-infected population. *Proc Am Thorac Soc* 2011;8:313-9.
  - 48 Reddy KP, Parker RA, Losina E, *et al*. Impact of cigarette smoking and smoking cessation on life expectancy among people with HIV: a US-based modeling study. *J Infect Dis* 2016;214:1672-81.
  - 49 Hwang JH, Park S-W. Smoking cessation intention and its association with advice to quit from significant others and medical professionals. *Int J Environ Res Public Health* 2021;18:2899.
  - 50 Miseda MH, Were SO, Muriangi CA, *et al*. The implication of the shortage of health workforce specialist on universal health coverage in Kenya. *Hum Resour Health* 2017;15:80.
  - 51 Nyamurungi Namusisi K, Thirlway F, Mdege ND, *et al*. HIV healthcare providers' perceptions on smoking behavior among PLHIV and smoking cessation service provision in HIV clinics in Uganda. *Tob Prev Cessat* 2021;7:60.
  - 52 Tamirat T. Health workers' practice towards smoking cessation intervention based on 5A's model and associated factors in public hospitals, Hadiya zone, Southern Ethiopia. *Patient Relat Outcome Meas* 2021;12:291-8.
  - 53 Shuter J, Ojoo SA, Oduor P, *et al*. Cigarette smoking behaviors and beliefs in persons living with HIV in Nairobi, Kenya. *Tob Use Insights* 2021;14:1179173X211053357.
  - 54 Mwamba C, Sharma A, Mukamba N, *et al*. 'They care rudely!': resourcing and relational health system factors that influence retention in care for people living with HIV in Zambia. *BMJ Glob Health* 2018;3:e001007.
  - 55 Asadi H, Imani-Nasab M-H, Garavand A, *et al*. HIV positive patients' experience of receiving health care services: a phenomenology study in Iran. *TOADJ* 2018;12:150-61.
  - 56 Gourlay A, Wringe A, Birdthistle I, *et al*. "It is like that, we didn't understand each other": exploring the influence of patient-provider interactions on prevention of mother-to-child transmission of HIV service use in rural Tanzania. *PLoS One* 2014;9:e106325.
  - 57 Siddiqi AD, Britton M, Chen TA, *et al*. Tobacco screening practices and perceived barriers to offering tobacco cessation services among Texas health care centers providing behavioral health treatment. *Int J Environ Res Public Health* 2022;19:9647.
  - 58 Rojewski AM, Bailey SR, Bernstein SL, *et al*. Considering systemic barriers to treating tobacco use in clinical settings in the United States. *Nicotine Tob Res* 2019;21:1453-61.
  - 59 Blumenthal DS. Barriers to the provision of smoking cessation services reported by clinicians in underserved communities. *J Am Board Fam Med* 2007;20:272-9.
  - 60 Gorin SS, Heck JE. Meta-analysis of the efficacy of tobacco counseling by health care providers. *Cancer Epidemiol Biomarkers Prev* 2004;13:2012-22.