

Health System Factors Constrain HIV Care Providers in Delivering High-Quality Care: Perceptions from a Qualitative Study of Providers in Western Kenya

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Abstract

The burden on health systems due to increased volume of patients with HIV continues to rapidly increase. The goal of this study was to examine the experiences of HIV care providers in a high patient volume HIV treatment and care program in eastern Africa. Sixty care providers within the Academic Model Providing Access to Healthcare program in western Kenya were recruited into this qualitative study. We conducted in-depth interviews focused on providers' perspectives on health system factors that impact patient engagement in HIV care. Results from thematic analysis demonstrated that providers perceive a work environment that constrained their ability to deliver high-quality HIV care and encouraged negative patient-provider relationships. Providers described their roles as high strain, low control, and low support. Health system strengthening must include efforts to improve the working environment and easing burden of care providers tasked with delivering antiretroviral therapy to increasing numbers of patients in resource-constrained settings.

Keywords

health systems, HIV care, health providers, sub-Saharan Africa, qualitative research

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Introduction

To maximize the individual health and population benefits of antiretroviral therapy (ART) for HIV, individuals living with HIV must fully engage in care,^{1,2} yet, patients face many barriers to engagement in care, particularly in resource-limited settings.³ The factors that determine patient engagement in care are multilevel, with contextual and health system-level factors playing an important role.⁴ System-level factors, including the organization of care delivery and program incentives such as nutrition support, are directly related to patient engagement in HIV care in resource-limited settings.⁵

Health care providers are the primary point of contact for patients within the health care system and therefore may have a profound impact on patient engagement in care.⁶ The satisfaction and motivation of health care workers is essential not only for the quality of HIV care delivery but also for optimal functioning of health systems in general. The HIV care providers in high burden health systems are responsible for the delivery of

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What Do We Already Know about This Topic?

Task shifting strategies are effective at delivering HIV care in low-resource settings with significant patient volume.

How Does Your Research Contribute to the Field?

This research adds data on how frontline health care staff face additional health system constraints in the context of high patient volume and insufficient health care staff that negatively influence the quality of care they provide and may influence patient engagement in care.

What Are Your Research's Implications toward Theory, Practice, or Policy?

Health systems should consider addressing the constraints on providers delivering HIV care, and further research should examine the relationship between quality of care delivered by providers and patient engagement in care.

HIV care and ensuring the optimal implementation of ART in high prevalence regions.^{7,8}

Despite the declines in incident HIV infections in many regions of sub-Saharan Africa, the strain on health care systems will continue to increase.^{9,10} Given the dramatic increase in patients being diagnosed with HIV, entering care, and starting ART over the past decade in sub-Saharan Africa, additional patient volume is projected from implementation of “test-and-treat.”^{9,10} The availability of life-preserving ART immediately upon diagnosis and throughout the duration of the life course translates to reductions in AIDS-related mortality and increases in life expectancy for patients living with HIV, but also results in higher numbers of patients accessing HIV care over time.¹¹ Additional strain is expected also due to the rise of non-communicable diseases (NCDs) among people living with HIV with longer life expectancies.¹² Among the 1.6 million people estimated to be living with HIV in Kenya, coverage of ART was approximately 64% in 2016 according to Joint United Nations Programme on HIV/AIDS, suggesting burden on systems will increase as this coverage gap is addressed in the coming years.

The strain on health care systems has led to creative approaches such as task-shifting to address shortages in skilled professionals in health care systems in resource-limited settings.^{7,13–15} Although demonstrated to be an effective approach to delivering ART to large numbers of patients in low- and middle-income countries lacking sufficient human resources for health,^{7,13,15} it is unknown how the burden increasingly placed on lower skilled frontline staff is impacting the delivery of quality HIV care in resource-constrained environments.^{16,17} Providers' experiences implementing care may provide

insight into how care delivery can be improved and how health systems can be strengthened to maximally support patient engagement in HIV care over time. The goal of this study was to examine the experiences of HIV care providers serving as the frontline staff in a high patient volume HIV treatment and care program in eastern Africa. The objective was to gain insight into providers' perspectives on the multi-level factors that may have an impact on patient engagement in HIV care. To achieve this objective, we examined providers' motivations, job satisfaction, and perceptions regarding health system factors that may impact patient linkage to and retention in HIV care.

Methods

Study Setting

The population of Kenya is currently approximately 48.5 million people, with 1.6 million estimated to be living with HIV, according to UNAIDS. The World Health Organization estimates that there were 0.2 physicians and 1.6 nurses and midwives per 1000 population nationally in Kenya in 2014,¹⁸ below the 2.3 per 1000 deemed sufficient to meet the care needs of the population.¹⁹

The Academic Model Providing Access to Healthcare (AMPATH) is a joint partnership between Moi University, Moi Teaching and Referral Hospital (MTRH), over a dozen North American universities and teaching hospitals and the Ministry of Health in Kenya.^{20,21} The initial goal of the program was to respond to the burgeoning HIV epidemic and create a system of care to address the needs of the population of western Kenya. The AMPATH has expanded to provide primary health care and chronic disease management and serves a catchment of 4 million people. The program has enrolled more than 180 000 HIV-infected adults and children in Ministry of Health facilities and satellite clinics across western Kenya, where some AMPATH staff are seconded from the Ministry of Health.

In Kenya, delivery of HIV care and treatment is largely the task of clinical officers, nurses, and support staff (eg, outreach workers, social workers, counselors). Clinical officers deliver primary care and ART to patients living with HIV in this setting. They are mid-level professionals responsible for the daily management and care of patients, following standard treatment and care protocols and guidelines issued by the Ministry of Health. Doctors with higher levels of education and training are consulted for complex cases and are responsible for overseeing care at more than one facility within the AMPATH program. All HIV and tuberculosis-related care and treatment are provided at AMPATH clinics free of charge. The AMPATH facilities are open weekdays between 8 AM and 5 PM. Returning patients are given dates for their next appointment, but not a specific time of day. New and returning patients are seen in the order that they arrive at the clinic by the first available clinician.

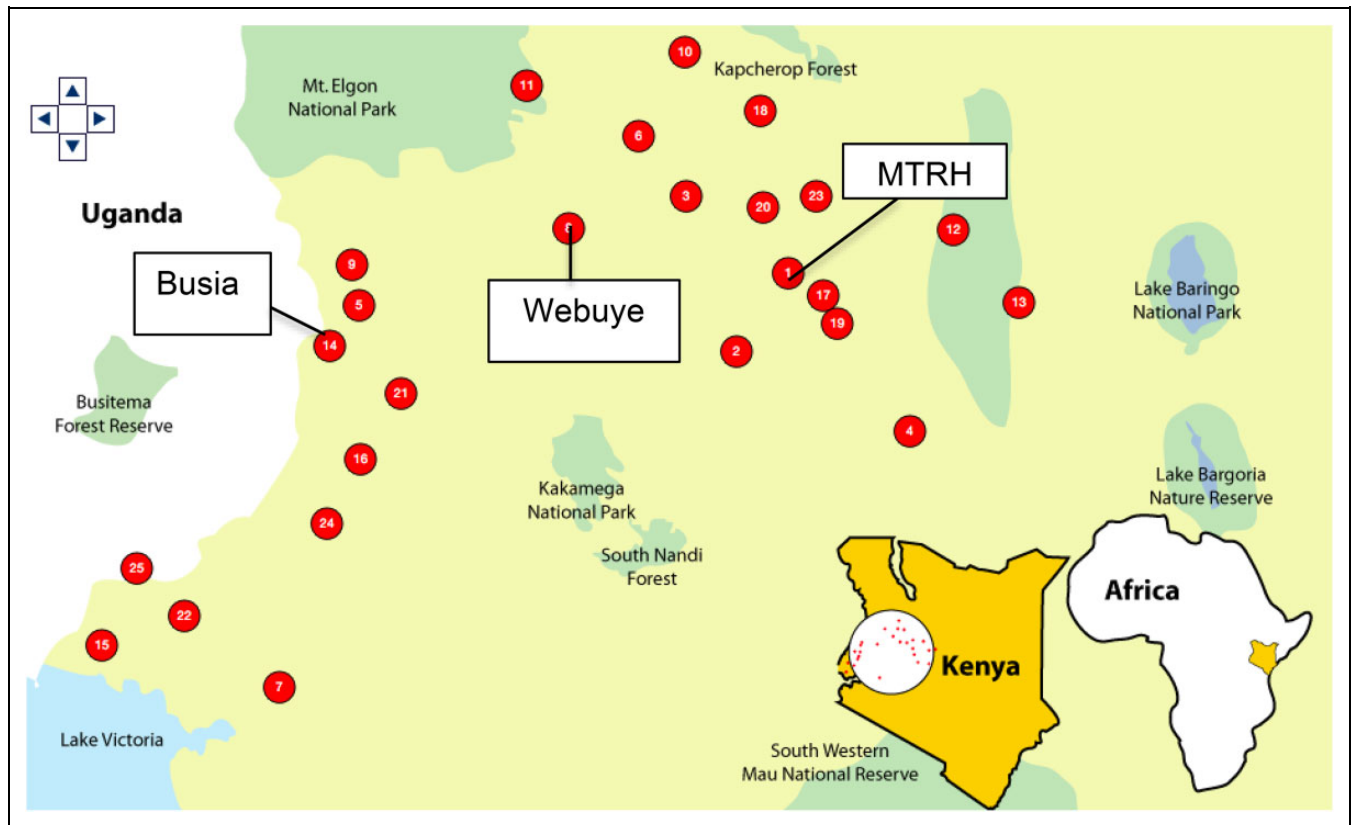


Figure 1. Location of 3 recruitment locations within the Academic Model Providing Access to Healthcare (AMPATH) program in western Kenya.

Study Design

This qualitative study consisted of in-depth interviews with 60 HIV care providers during September to October 2014. An interview guide was developed collaboratively by the investigators and data collection team with questions designed to explore providers' experiences delivering HIV care and understand their perspectives on clinic and health system barriers and facilitators for patients engaging in HIV care, informed by the literature and our prior research. The guide also included questions about job satisfaction and elicited ideas regarding how the program could improve patient engagement in HIV care. The guide was designed to elicit critical feedback on the program from care providers. Ethical approval for this study was obtained from the Moi Teaching and Referral Hospital Institutional Research and Ethics Committee (approval #0001021) and the institutional review board of Brown University (approval #1308000902). All participants provided written informed consent prior to enrollment in this study.

Sampling

Purposive sampling identified a study sample reflecting the various types of providers involved in the day-to-day delivery of HIV care at AMPATH facilities, including clinical officers, nurses, counselors, social workers, nutritionists, and retention/outreach staff. We intentionally focused our recruitment on

clinical officers and nurses, since they were hypothesized to play the largest role in patient retention and adherence. We did not include consultants (physicians) in this study since within AMPATH the daily management of HIV care is handled by clinical officers and nurses. Providers were based at 3 AMPATH health facilities: MTRH, Webuye District Hospital, and Busia District Hospital (Figure 1). These sites were selected to represent different contexts of care delivery at an urban tertiary hospital (MTRH) and 2 rural district hospitals (Webuye and Busia) in western Kenya. The sample size was selected a priori to capture different types of providers and was expected to lead to saturation in the data.

Recruitment and Data Collection

Program managers at each of the 3 selected facilities provided research assistants with rosters of staff. Research assistants used these lists to identify eligible participants and personally provide them with study information and invite them to take part in the research. Eligible providers were approached until the sample size was met. Those agreeing provided written informed consent prior to participation. All providers who were invited agreed to participate.

Trained interviewers used the interview guide to conduct semistructured interviews in private locations with each participating provider. Prior to the interview, interviewers collected

sociodemographic information from participants, including age, gender, educational level, provider type, and length of time that they had been providing HIV care. The interviews were carried out in English or Swahili, audio recorded with permission, and lasted approximately 1 hour. Audio recordings of completed interviews were transcribed verbatim.

Data Analysis

Thematic analysis was used to identify and characterize themes in the experiences of HIV care providers delivering care in a high prevalence and resource-constrained setting in eastern Africa. The first step in the analysis was to develop a coding scheme. Three investigators (B.G., J.W., and C.K.) created a codebook using an initial set of 12 transcripts. Codes comprising the scheme were derived from concepts defined a priori as study topics (motivations, satisfaction, perceptions of system factors impacting care), and inductively from concepts and observations emerging from the data. Codes were used to systematically label text from the interviews, according to definitions developed and agreed upon by the analysts. Following the application of codes to the interview transcripts using Nvivo software, excerpts of texts were organized, described, and labeled to form content categories. Content categories formed the basis for a series of summary statements describing and explaining providers' experiences delivering care in a high prevalence and resource-constrained environment. These statements are presented, elaborated, and illustrated using the study data to constitute study results, as presented below.

Results

Sample Characteristics

Table 1 shows the characteristics of the participants in the study. The majority of participants were clinical officers or nurses, female, aged between 30 and 40 years, with at least a college diploma. On average they had worked in HIV care for 7 to 8 years.

Three main themes related to providers' experiences delivering HIV care in western Kenya emerged from the qualitative data. These are summarized below and subsequently elaborated as Themes 1 to 3.

Theme 1: Constraints in care delivery exacerbated workload strain on providers and restricted opportunities to develop patient-provider relationships. Many providers discussed feeling "burnt-out," tired, or exhausted by their workload. Providers mainly attributed the burden to the large number of patients accessing care for HIV in the context of insufficient staff. As a result of staff shortages, staff members who were not properly trained or with inadequate experience were operating in roles beyond their abilities or stated job descriptions. The shortage of staff also led many providers to take on additional roles that were layered on their normal responsibilities.

Table 1. Demographic and Professional Characteristics of 60 Provider Participants.

Characteristics	N (%)
Location	
MTRH	30 (50)
Busia	15 (25)
Webuye	15 (25)
Type of provider	
Clinical officer	16 (27)
Nurse	17 (28)
Retention officer/outreach	11 (18)
Counselor	9 (15)
Social worker	3 (5)
Nutritionist	3 (5)
Peer (Mentor Mother)	1 (2)
Female	43 (72)
Educational attainment	
Diploma	34 (57)
Certificate	8 (13)
Undergraduate	15 (25)
Postgraduate	2 (3)
Other	1 (2)
	Mean (range)
Age, in years	39 (25-55)
Number of years delivering HIV care, in years	8 (3-16)
Number of years working at AMPATH, in years	7 (1-22)

Abbreviations: AMPATH, Academic Model Providing Access to Healthcare; MTRH, Moi Teaching and Referral Hospital.

Let's say we have 3 nurses in a station and protocol requires a nurse to do adherence counseling. And these patients just keep coming. These nurses are also attached to integrated TB (tuberculosis) department or family planning department, CCC (comprehensive care centers). And in normal days, dealing with the clients is cumbersome because some even have to do double work because of the overload. And at the same time, we also do a major role of counseling. The manpower is not proportional to the responsibilities we have. (Nurse)

Many providers also discussed the strain on providers and patients related to the delivery of disorganized care, such as the lack of integrated care for associated comorbidities and the layout of the physical space in the facility. Providers perceived that patients had to negotiate many different providers and services, disrupting the continuity of care that they could be providing.

Sometimes you find that the patient has an OI (opportunistic infection) and sometimes it is a lot of inconvenience: this patient came early by the time he comes here, it is late, time has gone. We don't have OI drugs in the facility here, we have to send them back. So they have to go back to the pharmacy to get those drugs. That is us, the workers, care providers need to improve. (Nurse)

Providers perceived patient inconveniences to be exacerbated in the context of comorbid conditions for which they were simultaneously seeking care. The resulting disjointed care, inefficiencies, and lack of integrated services frustrated providers.

I don't know how it can work, referral of clients. For example I am a patient of HIV, but coming to the clinician I tell him that I want to test for malaria, so the moment I go to the lab for malaria there is a long queue there, so I may take maybe 2 or 3 hours before I come back. So things like testing for malaria for HIV positive patients should be done within and it can help. (Peer counselor)

Providers perceived that the lack of systems in place within the care system added to their frustrations and compounded the burden from large numbers of patients in understaffed clinical settings. One of the primary concerns was an inefficient system to manage clinical operations. For example, many providers discussed the limited flexibility in patient scheduling and the lack of processes for handling patients who sought care outside of their scheduled appointment date.

Long queuing hours, few staff, overcrowding of patients and occasionally, we have an attitude for a patient who usually comes on a different date other than the appointment date. You'll find that around 20 patients didn't come on their appointment date, but they have come today when you have like 120 patients. So 120 plus 20 who missed, that is 140, that is too much for you. So we have a system that those patients are served last because it wasn't their appointment date, but that discourages them. For example if they came at 8:00 AM and you are serving them at 5:00 PM, it's like a punishment and you don't know as to the reason why that patient did not come on the appointment day. So if we just change that and emphasize on appointment dates, it can be better. (Clinical officer)

Providers believed that the burden and strain on the health care system and the exhaustion that they experienced as a result led them to deliver poorer quality care than they would if they were adequately staffed. Provider burden led to negative attitudes toward patients.

When you go to [clinic name], you will find maybe 1 clinician and 2 nurses, others are just volunteers so there will be more work. So you find in a day you are dealing with over 200 patients and only one person is seeing them; it is very bad. The patients will not be treated well because the clinician will be tired. (Social worker)

Providers' perceptions about how provider burden was related to the quality of care they were delivering played out in terms of provider attitudes toward patients and in providing the necessary level of time and attention to patients' needs. Many discussed not having sufficient time with patients to properly provide counseling, make patients feel comfortable, or provide the appropriate amount of information, due to the anxiety about the growing queue of patients. Providers described a context within which they felt unable to establish good relationships with patients.

Yea the burnouts, there's a lot of work, somebody may not be able to . . . actually have time with the patient because he wants to finish their session. So you may not have quality time with the patient. (Nurse)

Maybe it is our attitude as care givers. At one point, I think we expected just a small number but this particular time people are so many. So I think one is attitude, we even don't have time for them, we answer them without caring what we have answered, we don't have time for them because they are just too many. (Counselor)

Theme 2: Providers experienced a lack of control in their professional roles that they attributed to inadequate resources and insufficient shared mission with other providers, patients, and program management, preventing them from fulfilling their responsibilities to patients. Providers noted decreasing levels of resources available to support patients in their treatment and care, both within and outside of the health care system, leading to delays in the receipt of adequate care for patients. Because of the lack of resources available to address the social and structural determinants of health in this setting, such as nutritional supplements, fee waivers for laboratory tests, or financial assistance with transportation and other costs, providers believed they were unable to provide the comprehensive services that many of their patients needed in order to fully engage with care and successfully adhere to ART. In these situations, providers believed that they were failing at fulfilling their obligations to patients, exacerbating the personal frustrations they experienced by not being able to deliver higher quality care in the context of inadequate resources.

So when they cannot afford to pay and we kind of postpone and postpone waiting for them to get money, it's also frustrating cause these are people who depend on you to . . . make decisions for them about their health and here you are, you know you cannot make the next step. You know it's frustrating for both the client and for me as a caregiver. (Clinical officer)

In addition to the lack of economic resources available to assist individual patients, facilities were often short on certain supplies or resources important for care delivery, such as laboratory supplies needed for monitoring viral load or CD4 counts, factors that providers described as outside of their control.

Where I work the facility is poor, mostly like from the lab, if I want to do a test, I'm told, "There are no containers, there are no reagents." It kind of delays my care, so you feel frustrated when there's nothing you can do about it. You cannot do anything to push the procurement and the supplies, so you have no control of what happens. (Clinical officer)

Providers inevitably believed that handling a high volume of patients in a setting without ample resources required a level of effort that exceeded their job description, as stated in Theme 1. When providers perceived that other providers and staff were unwilling to take on the necessary extra effort and personal sacrifice in order to address the needs of the large number of patients, it contributed to the idea that they lacked control in their work environment. The lack of shared mission was cited by some as a disincentive to meet the demands of their work and contributed to a lack of motivation.

I used to come very early when I was new in AMPATH. I stopped. I got tired. You know, it is like you are the only one getting tired because no one else comes early, others just look at you. You become drained. So I started coming at 8 am when all other workers are coming too. (Nurse)

Nursing and support staff, such as outreach workers, in particular, felt helpless when working with clinicians who refused to accommodate tasks beyond basic expectations. For example, clinicians refused to accept additional patients at the end of the workday.

Sometimes you walk with the forms of new clients and the clinician tells you not to bring the forms from 4 PM, they answer you badly and you go home tired. So I usually say that I should not be given forms from 4 PM because where will I take them? (Nurse)

Although providers acknowledged that the high strain environment necessitated taking on roles beyond their stated job descriptions, when not freely taking on these extra tasks of their own accord, their perceived control over their work was diminished. They were frustrated by the inefficient use of their time, believing that their abilities were ignored while assigning them to complete tasks that did not take advantage of their particular training or skill sets.

Sometimes I can be called, "Go and pull some files," like they are wasting my time, I could have even counseled 10 clients. Sometimes they can tell me, "Go and do this and this," which is that is not my work and I feel like being in the field doing community mobilization and education. (Outreach worker)

Many attributed their lack of control over their work to weak connections with program management and direct supervisors. Providers described a lack of inclusive communication with program management about clinic operations.

Sometimes the frustrating moments are not with the patients. Like today I came knowing that we will be 3 clinicians or even 4, but I found we are only 2 at the clinic and yet we had not been informed earlier that we will only be 2 in the clinic. I become frustrated even if the patients are not many, but psychologically I'm already frustrated. (Clinical officer)

Providers also described a lack of latitude in decision-making, believing that they were unable to offer input into decisions regarding program activities, leading to the perception that they were not valued by the system.

If we need something we must call [clinic name]. We don't have anybody this side. And if there is like mobilization, it is done by those who are in charge. So you find, us we are qualified. We are the ones who know counseling. We are the ones who know people, who can do those things. Why is it when it comes to such things, there are people from outside who come? Even they don't know what we are supposed to do. So, am demoralized when it comes to that. (Counselor)

Beyond other providers and program management, some providers also expected patients to participate with them in the shared goal of improving their health. Their lack of success in improving the health of uncooperative patients was another added dimension of perceived lack of control in fulfilling their work responsibilities.

Another thing that can frustrate are uncooperative clients. You see somebody you can help and he can be actually helped, but on his or her side actually he has given up so some will demoralize you because if you can reflect on maybe the effort you have tried actually to put on to assist that person and again may be they don't care about what's going on, so at times it can demoralize. (Clinical officer)

Theme 3: Providers perceived that the personal and professional support available to them from the health care system was inadequate to mitigate provider burden. Providers described a health care system without adequate support to handle a challenging patient population. Providers believed that the system could do more to support them in their efforts to deliver high-quality care by alleviating some of the strain. Some providers believed the psychological burden from interacting with a large number of patients in strained socioeconomic conditions having HIV and associated comorbid conditions was exacerbated by the lack of support offered to them to take on the extra tasks required to appropriately and adequately address patient needs.

We have been seeing HIV patients, they have been crying, some of them cry to us, they have been complaining, they expect you to solve all their problems so when you go back home, that is still haunting you. So that aspect of caring for caregivers is the one that is lacking . . . because day in day out it is the same thing that you are doing, listening to others problems and nobody listens to yours. (Clinical officer)

Beyond emotional support, providers also expressed the lack of support in terms of the need for more recognition or appreciation for their willingness to exceed expectations in terms of the workload and responsibilities as described above. Some providers thought that structures were not in place within the care system to formally capture and account for the entirety of their work. This lack of accounting contributed to their belief that many aspects of their work went unnoticed and unacknowledged by the program.

Some people don't appreciate the kind of work you do, because when as much as you do . . . there are these forms we use to monitor patients, but there's this other work that is qualitative like the counseling part of it which does not have a monitoring probe and you see you cannot be putting down every other counseling session that you have. So people don't appreciate that you have that extra bit. Maybe you are putting in extra effort just to be involved with a patient and be able to help them more. You know someone might think your work is just to fill the form, but there's really a lot to do. (Clinical officer)

The lack of investment in terms of human resources and professional development, such as additional trainings, retreats, team-building exercises, flexible work schedules, and inadequate financial compensation, shaped providers' perceptions that the program did not value their work and contributed to lack of motivation.

Even when we are here from 8-5, the pay is poor. Right now, I have enrolled for my PhD, but I'm still being paid salary for diploma. So I come here in the morning, I give my best, sometimes I skip lunch, but at the end of the month what I get is demotivating. (Clinical officer)

Providers connected the lack of support by the system to their inability to alleviate the strain they experience in their work environment. They believed that if the system invested in them more, it would make them feel valued, and in turn, allow them more of a sense of control over their work environment.

It's actually dissatisfying because as human beings, we get tired. The only thing that surprises us is we have never had even a team building. We've never even gone out even just in a day and say, "Today, we are here to relax. We are not talking about job." Because I believe such things would make us be empowered. (Counselor)

Discussion

This qualitative study demonstrated how HIV care providers in western Kenya perceived their roles in the health care system to be characterized by high strain, low control, and low support. The main themes that emerged from the results of this study depicted a work environment that constrained providers in their abilities to deliver high-quality care to patients. With the burden on the health care system in sub-Saharan Africa only expected to increase, the impact of high strain on providers may have a detrimental impact on patient engagement in care over time, jeopardizing the potential of ART to improve the health of people living with HIV, and decrease incidence over time.

Differentiated models for HIV care delivery are urgently needed across care and treatment programs in sub-Saharan Africa in order to address the strain, reduce patient volume, and improve the quality of care delivery. Several community-based strategies, such as home delivery of ART, peer-led refill groups, adherence clubs, and community ART distribution have been implemented.^{22,23} Clinic-based interventions, such as less frequent appointment schedules for stable patients or nurse-only appointments, have also attempted to reduce patient volume.²²⁻²⁴ In light of the findings presented here, it is important to continually evaluate these and other task-shifting models over time to ensure sustainability of the quality of care delivery. Initiatives to reduce patient volume through the use of lower skilled health workers must consider the needs of providers and support staff as critical to the effectiveness of ART implementation.¹⁶ In addition, the rising epidemic

of NCDs across populations of sub-Saharan Africa will continue to strain the health care system, highlighting the urgent need for integrated care to reduce inefficiencies in care delivery and patient and provider burden.^{12,25,26}

The axes of strain, control, and support characterizing providers' work environments in this study clearly aligned with the demand-control model of occupational stress as described by Karasek et al.²⁷ This model has been used to demonstrate the negative health impacts on workers in occupations characterized by high stress, low control (defined as latitude in decision-making), and low support.²⁸ The findings described here add to this body of work by demonstrating the potential negative impact of this type of role on patients and other providers within the system, beyond the negative health impacts on the worker.

The factors highlighted in this study also confirm prior research on the health, motivation, and retention of health care workers in resource-limited settings; HIV care provision, in particular, has been associated with high level of stress and burnout.^{29,30} In sub-Saharan Africa and similar resource-constrained settings, provider retention is critical for health systems to consider in the context of provider migration to more lucrative opportunities. Retention of staff within health care systems in Kenya is currently poor, with one recent study reporting 13% of health care providers surveyed having changed jobs in the prior 12 months and 20% expecting to leave within the next 2 years.³¹ Previous research has examined factors related to improving the retention of health care workers in resource-limited settings, many of which were also highlighted in our results, such as financial incentives, career development opportunities, continuing education, improving the physical infrastructure of the work environment, ensuring resource availability for performing work duties, maintaining a positive relationship with hospital management, and personal recognition and appreciation for work performed.³² Additional factors that have been shown to affect the motivation and retention of primary health care workers in Kenya include security and safety, proper workload management, and direct support from supervisors.³¹ Research from Tanzania has also demonstrated that trust was an important personal motivator for primary health care workers.³³

The implications of these findings suggest that health systems delivering HIV care in resource-limited environments need to address provider burden in order to ensure high-quality care delivery, patient safety and patient outcomes.^{34,35} The results of this study include several recommendations from providers working in this context in western Kenya. In order to prevent burnout, improve job satisfaction, and retain workers, attention should be given to altering systems to increase sense of control over work and bolster support for providers, through increased opportunities for decision-making, improving job skills, and providing feedback. Feedback from all cadres of health care workers should be elicited by program managers to encourage participation, demonstrate value, and promote a sense of a shared mission. These policies would likely, in turn, bolster trust within the health system, particularly if provided in

the context of increased support for providers. Health system factors could also be altered to improve the efficiency of care delivery, with potential direct implications for both providers and patients. A patient-centered care approach, with flexible scheduling and specific appointment times, could not only address the dissatisfaction patients' experience in waiting in long queues to receive care but also redistribute the flow of patients so that providers are not overwhelmed by high patient volumes. Systems and procedures could also be put into place to accommodate patients who arrive outside of their scheduled appointment time. The use of widely adopted mobile technology and communication platforms in Kenya to communicate with patients and inform them of waiting times could also improve patient flow within the clinic and decrease overall waiting times for receiving care.

Our findings also expand on previous work describing the barriers and facilitators of patient engagement in HIV care in sub-Saharan Africa, demonstrating how system-level factors may impact patient engagement in care through providers. Providers described a work environment that constrained their abilities to deliver high-quality care in the context of limited resources and high HIV prevalence, primarily through their inability to form and nurture positive relationships with patients and their lack of control over their work environments. The quality of patient-provider relationships and interactions can have a direct impact on patient behaviors within the context of care delivery. Our prior qualitative research demonstrated that negative patient-provider interactions were described as a barrier for patients engaging in HIV care.⁵ Prior studies among patients in HIV care in the United States have demonstrated that higher quality communication and relationships between patients and providers were associated with increased appointment adherence.³⁶ The findings of this study show that system-level factors such as inefficient patient and provider scheduling, insufficient staffing, limited resources, and lack of integrated care restrict the time and space providers have to foster positive communication patterns with patients. In order to encourage high-quality interactions between providers and patients and communication characterized by dignity and respect, the system should nurture an environment within which providers can promote positive interactions and relationships with patients. The findings presented here demonstrate that the features of the health care system work against providers' efforts to forge relationships with patients and in many cases foster negative attitudes toward patients who are accessing care in this setting. Additional research is needed to quantify the factors demonstrated in this qualitative study, as well as to design, implement, and evaluate interventions within the health system focused on aspects of the health system and providers specifically in order to improve the quality of care delivery.

This study has a number of limitations. First, the study is based on a convenience sample of providers from within the care program. Social desirability bias may have resulted in reluctance to offer negative perspectives regarding their working environment. However, as noted above, we designed the

study to generate critical feedback on the program and trained interviewers to probe regarding the challenges of working in their current environment. A limitation of this study is that it focuses exclusively on care providers and does not incorporate data from consultants (physicians), program managers, or other key stakeholders who may have different views regarding how the health system impacts patient engagement in care.

Conclusion

Efforts to bolster patient engagement in HIV care among those living with HIV across the globe will falter if health systems do not work toward alleviating the strain and increasing control and support of the frontline care providers responsible for delivery ART. Health system strengthening must include efforts to improve the working environment of care providers tasked with delivering ART to increasing numbers of patients engaged in HIV care.

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