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“Can’t you initiate me here?”: Challenges to timely initiation on antiretroviral therapy among methadone clients in Dar es Salaam, Tanzania

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Abstract

Background—Despite dramatic improvement in antiretroviral therapy (ART) access globally, people living with HIV who inject drugs continue to face barriers that limit their access to treatment. This paper explores barriers and facilitators to ART initiation among clients attending a methadone clinic in Dar es Salaam, Tanzania.

Methods—We interviewed 12 providers and 20 clients living with HIV at the Muhimbili National Hospital methadone clinic between January and February 2015. We purposively sampled clients based on sex and ART status and providers based on job function. To analyze interview transcripts, we adopted a content analysis approach.

Results—Participants identified several factors that hindered timely ART initiation for clients at the methadone clinic. These included delays in CD4 testing and receiving CD4 test results; off-site HIV clinics; stigma operating at the individual, social and institutional levels; insufficient knowledge of the benefits of early ART initiation among clients; treatment breakdown at the clinic level possibly due to limited staff; and initiating ART only once one feels physically ill. Participants perceived social support as a buffer against stigma and facilitator of HIV treatment.

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Some clients also reported that persistent monitoring and follow-up on their HIV care and treatment by methadone clinic providers led them to initiate ART.

Conclusion—Health system factors, stigma and limited social support pose challenges for methadone clients living with HIV to initiate ART. Our findings suggest that on-site point-of-care CD4 testing, a peer support system, and trained HIV treatment specialists who are able to counsel HIV-positive clients and initiate them on ART at the methadone clinic could help reduce barriers to timely ART initiation for methadone clients.

Keywords

Methadone; Antiretroviral therapy; Integrated services; Qualitative; Tanzania

Background

Recent evidence highlighting the individual and public health benefits of expanded access to antiretroviral therapy (ART) has galvanized efforts to increase the number of people accessing treatment (Cohen et al., 2011; Kitahata et al., 2009; Sterne et al., 2009). Despite dramatic improvement in ART access globally, people living with HIV who inject drugs are less likely to receive ART compared with non-drug users as they consistently face barriers that limit the availability and accessibility of HIV prevention and treatment interventions (Gruskin, Ferguson, Alfvén, Rugg, & Peersman, 2013). As a result, only four people who inject drugs receive ART per 100 HIV-positive people who inject drugs worldwide (Mathers et al., 2010).

People who inject drugs and who are HIV-positive face multiple individual, social, and structural barriers to HIV care and treatment, including ART. At the individual level, active drug use, low self-efficacy, low motivation, and inadequate knowledge of ART, and untreated mental health illness have been identified as hindering access to HIV care (Batchelder et al., 2013; Chakrapani et al., 2014; Mimiaga et al., 2010; Wood, Kerr, Tyndall, & Montaner, 2008). Lack of family support, addiction and HIV-related stigma and discrimination, and instability of housing/food operate at a social level to limit access to HIV care and treatment for people who inject drugs (Chakrapani, Velayudham, Shunmugam, Newman, & Dubrow, 2014; Krusi, Wood, Montaner, & Kerr, 2010; Mimiaga et al., 2010; Wood, Hogg, et al., 2008). Furthermore, compartmentalized health care systems that are not conducive to comprehensive HIV care for people who inject drugs, enforcement-focused drug policies, and “conditional HIV treatment access,” in which people who use and/or inject drugs are denied HIV treatment or delay seeking treatment until they are deemed reliable and deserving of treatment, i.e. not using drugs, are all structural problems that hinder ART initiation (Krusi et al., 2010; Rhodes & Sarang, 2012; Wood, Hogg, et al., 2008).

This failure to initiate ART among people who inject drugs represents a significant lost opportunity for HIV programs. Evidence suggests that enrollment of people who inject drugs in opioid treatment, such as methadone, contributes to improved ART adherence and resultant suppression of HIV-1 RNA and increases in CD4 cell count (Malta, Magnanini, Strathdee, & Bastos, 2010; Roux et al., 2009; Wood, Hogg, et al., 2008). Methadone clinics

provide a unique opportunity to deliver comprehensive HIV care and treatment to people who inject drugs given that patients present on a regular basis for methadone dosing (Lambdin, Mbwapo, Josiah, & Bruce, 2015).

Since the late 1990s, the injection of drugs, mostly heroin, has become widespread in Dar es Salaam, Tanzania and is spreading throughout the country (McCurdy, Ross, Kilonzo, Leshabari, & Williams, 2006; McCurdy, Williams, Kilonzo, Ross, & Leshabari, 2005). Currently, an estimated 30,000 people who inject drugs live in mainland Tanzania (Consensus estimates on key population size and HIV prevalence in Tanzania, 2014). As is common in other regions of the world, people who inject drugs in Tanzania face high levels of HIV risk and burden, and in Dar es Salaam, 35% of people who inject drugs are estimated to be infected with HIV (Consensus estimates on key population size and HIV prevalence in Tanzania, 2014), compared to 6.9% in the general population of the city ((TACAIDS), (ZAC), (NBS), (OCGS), & International, 2013).

In response to the HIV epidemic among people who inject drugs, the Government of Tanzania opened the first publically funded methadone-assisted therapy (MAT) clinic on mainland sub-Saharan Africa at Muhimbili National Hospital (MNH) in 2011. To date, over 1000 clients have been enrolled into methadone at MNH with retention levels similar to other global programs (Lambdin et al., 2014). Similar to other settings that provide care for patients with HIV and addiction, failure to initiate ART is very common at the MNH methadone clinic. A recent analysis showed that 41% of ART-eligible methadone clients initiated ART within three months of being determined eligible for treatment (Tran et al., 2015), compared to approximately 59% estimated among the general population in 2012 (PEPFAR, 2014; Tran et al., 2015). This is despite daily encounters that methadone clients have with the health care system. These figures are particularly concerning given that, until recently, a CD4 count of less than 200 was required to obtain ART.

This study qualitatively examined barriers and facilitators to ART initiation among clients attending the methadone clinic at the Muhimbili National Hospital in Dar es Salaam, Tanzania. Findings from this study will inform the development of an integrated model of HIV and methadone services.

Methods

Study setting

This research was conducted at the Muhimbili National Hospital methadone clinic in Dar es Salaam between January and February 2015. As part of routine care, the clinic offers provider initiated HIV testing and counseling at enrollment for all clients followed by ongoing HIV testing every six months (see Table 1 on the HIV care and treatment management of methadone clients). Clients who test positive for HIV have blood drawn at the methadone clinic for CD4 testing and are screened for pulmonary tuberculosis to assess eligibility for ART initiation (National guidelines for the management of HIV and AIDS, 2012). Blood samples are taken to the MNH central laboratory for processing. Results are posted in the national electronic laboratory records information system, where clinical staff with access privileges can retrieve them. Clients are escorted by providers to the HIV care

and treatment clinic (CTC) at Muhimbili National Hospital located approximately 500 meters from the methadone clinic, where they are started on ART according to national HIV treatment guidelines (Bruce et al., 2014). Once initiated on ART, methadone clients can continue to receive their treatment at the methadone clinic and further clinical assessments and consultation are conducted by clinicians at MNH CTC. MAT providers or community outreach workers affiliated with the methadone clinic escort clients from the methadone clinic to their appointments at the HIV clinic to facilitate attendance and support clients' HIV care and treatment. HIV-positive clients who are not eligible to initiate ART receive CD4 and opportunistic infection screenings every 6 months to monitor for eligibility. Clients receive their ART on a monthly basis or as directly observed therapy based on clinical and psychosocial indications. A few clients have also requested on their own to receive directly observed ART at the methadone clinic.

Study population and procedures

We conducted semi-structured interviews with 12 providers and 20 clients living with HIV at the MNH methadone clinic. Providers were eligible to participate if they had worked at the methadone clinic for at least 6 months. Clients were eligible to participate if they were currently enrolled in methadone treatment at the methadone clinic, diagnosed and on record at the clinic as having HIV, at least 18 years old, and willing and able to provide informed consent. We purposively sampled providers based on job function in order to elicit perspectives of different types of providers engaged in treating methadone clients. We sampled HIV-positive methadone clients based on sex and ART status. We were interested in exploring the differences in experiences between those clients who had been successfully linked to ART and those who were not yet on ART, including those who had never been linked to ART. Interview topics included existing HIV care and treatment processes, barriers and facilitators to ART initiation, and perceptions of and recommendations for integrating HIV care and treatment services at the methadone clinic. We obtained informed consent from all participants before each interview. All interviews were conducted in a private room to ensure confidentiality. This study received ethical approval from the Tanzania National Institute for Medical Research, Muhimbili University of Health and Allied Sciences, and Ethical and Independent (E&I) Review Services in the United States.

Data analysis

Interviews were audio-recorded, transcribed word-for-word in Swahili, and translated into English. We held weekly debriefing meetings with members of the study team to discuss emergent themes and identify key issues for follow-up in subsequent interviews. We adopted a content analysis approach to data analysis. The first author (HTS) developed a codebook using a priori descriptive codes based on the interview guides and other codes that emerged from an initial coding of six transcripts. A different member of the study team used the codebook to code all transcripts. The coder and the first author then conducted a second round of coding by using the first-order, descriptive codes to develop more detailed sub-codes based on the content of the excerpted transcript text for further categorization (Miles, Huberman, & Saldana, 2014). In this paper we present findings based on the first order, descriptive codes and sub-codes identified related to initiating ART and use direct quotes from interviews to support our findings.

Results

Characteristics of the sample population

Among the methadone clients interviewed, 10 were women and 10 were men. Five out of the 10 women were on ART at the time of the interview compared to six out of the 10 men. In our sample, the median time enrolled in methadone treatment was 3 years. The median time on ART among those receiving ART at the time of our interviews was 1 year, 4 months.

Six of the 12 providers at the methadone clinic interviewed were doctors; two were nurses providing HIV-related services to clients; two were pharmacists; and two were social workers.

Delays in CD4 testing and receiving CD4 test results

Multiple systemic challenges delayed methadone clients from initiating ART. Both clients and providers described delays in CD4 testing and receiving CD4 test results as particularly hindering timely linkage to HIV care and treatment. Methadone clients and providers reported that it could take weeks for methadone clients to receive CD4 test results:

When you arrive [the clinic], there are follow ups here and there that the doctors themselves know. You are given another appointment in which you are told to do a CD4 test. And the CD4 test, it's not that you are tested today and you get the results tomorrow, no. I don't know why but you could be tested today and the results come out after two weeks or three, for some even a month. So I think that also is a big delay or it is also a reason that delays AIDS patients from getting medicine early.
(Female methadone client on ART)

A provider at the methadone clinic further described delays in receiving CD4 test results as a barrier to ART initiation:

What I can say about CD4 is that sometimes there is a delay in getting the results. You can ask for the CD4 count of a patient in order to see whether the patient meets the criteria to start medication or not, but the results take a long time to come out.
(Physician at the methadone clinic)

Lack of CD4 testing reagents and CD4 diagnostic equipment failure contributed to delays in receiving test results after blood samples were sent to the central pathology laboratory at the hospital. Even when CD4 test results were available, retrieval of the results was sometimes delayed due to the clinic's limited access to the Hospital Management Information System (HMIS) called *Jeeva*. Test result records are created and maintained in the *Jeeva* system. Providers at the methadone clinic electronically retrieved test results from the *Jeeva* system, which was only available off-site. One provider described how the lack of connection to the *Jeeva* system at the methadone clinic was a barrier to retrieving test results:

There the Muhimbili system is different. So if you want to get the data, you have to go to the head of the department whose computer uses the *Jeeva* system. But now the computer with the methadone system has no connection to Muhimbili. I think these types of systems of communication need to be integrated. (Nurse at the methadone clinic)

Another provider explained that sometimes the *Jeeva* did not work at all due to network problems:

It's possible [a client] comes and is told that the results are in the system, but again the system is not working. You find the network hasn't been working for three days, so even the patient has already given up. You may lose him because he will find it so inconvenient. (Nurse at the methadone clinic)

The inconvenience of the off-site HIV clinic

Though blood is drawn from methadone clients at the methadone clinic for HIV and CD4 testing, HIV care enrollment and ART initiation is conducted off-site, often at the hospital's HIV care and treatment clinic. The inconvenience of having to go off-site for ART initiation was described by some participants as another systemic barrier to treatment:

If you tell them to go and initiate [ART] at another clinic there, they ask, "Can't you initiate me here?" When you tell them here we do not have [that service], now that becomes, they say, "Okay, I will go." But they don't go. So the whole procedure with the clinic being in a different place from the methadone clinic makes many not ready to start [ART]. (Physician at the methadone clinic)

Multiple levels of stigma

Participants viewed HIV- and drug-related stigma as hindering timely initiation to ART and operating at three levels: individual, social, and institutional. At the individual level, internalized stigma due to one's HIV status was perceived as a barrier to following up on CD4 results for ART initiation.

The problem is the fear of being stigmatized. Most of the time [a methadone client] knows that when he is on [ART], he has to come for medication. He is now afraid that people will see him coming for medicine and forget that he is in recovery and rather see him as someone who is living with HIV...So this stigma is the problem. So for these people, before you give them [ART], you must give them a lot of counseling. (Nurse at the methadone clinic)

A social worker at the methadone clinic described how some methadone clients feel uncomfortable at the HIV clinic because they perceive that others will regard them as criminals due to their history of drug addiction. She said,

They are lost [to follow up] because some do not like to attend the same clinic with other patients from different areas due to their behaviors. So once they are [at the HIV clinic], they feel like they are thieves, lawbreakers. So they are not well behaved. They feel anxious thinking that someone may see him as a thief. (Social worker at the methadone clinic)

Male and female methadone clients interviewed echoed this fear of being recognized as a drug addict or a person living with HIV because of the stereotypes that are typically associated with these identities: As one client stated,

I definitely have stress because I know that if I get into a group in society, they will stigmatize me. They will disrespect me and segregate me: "That is a substance

abuser. Don't get close to her. She will steal from you." While sometimes you don't have the thought of stealing. You are not even a thief. So things like that. (Female methadone client on ART)

Due to the double stigma of illicit drug use and HIV—and, for female clients especially, the triple stigma of illicit drug use, sex work and HIV—methadone clients face limited social support. Participants explained that this lack of social support delays some clients from initiating ART since a treatment adherence supporter is strongly recommended for ART initiation based on national guidelines for the management of HIV/AIDS. One provider described a female methadone client who was delayed in initiating ART because she did not have anyone who could serve as her adherence supporter:

It was not possible for her to initiate ART because she had to look for a social support person when she was referred to CTC. One of the criteria [to initiate ART] is to see whether a person has social support to care for her whenever a need arises. She didn't have an adherence supporter, let alone an adherence supporter who could support her with shelter and food. She was a commercial sex worker, so it was very difficult. (Physician at the methadone clinic)

After revealing the stigma that she faced within her own family and how she was once accused of stealing a neighbor's phone because of her history of addiction, one client described how being stigmatized by family and losing their support may hinder some methadone clients from receiving appropriate HIV care and treatment:

There are some families that honestly accept that it is a disease. So the thing is to send her early to start treatment and be safe. But others think it is a big problem and an awkward one. So they stigmatize you. So the issue of stigma and being degraded could also make someone delay treatment. First she will feel down that the family does not offer support...They discourage you, abandon you. "She has AIDS!" (Female methadone client on ART)

At the institutional level, participants reported that some methadone clients experienced stigma and discrimination at off-site HIV clinics due to their history of drug addiction. One provider described the rationale for MAT provider escorting methadone clients to the HIV clinic:

The aim of escorting them is that HIV patients...are usually treated in a way that is not okay. That even the way the [HIV care and treatment] nurses attend to methadone clients, they are not so compassionate. They still think they are in their initial condition when they were thieves. So they attend to them in a suspicious manner. And most of the time they are not taken seriously. That is why we find ourselves escorting them. (Pharmacist at the methadone clinic)

Social support as a buffer against stigma and facilitator of HIV treatment

Social support appeared to be a buffer against some forms of stigma, particularly internalized stigma. Though it is not uncommon for methadone clients to lack social support as illustrated above, some of the methadone clients, both men and women, interviewed

described that the support of family allowed them to accept their HIV status and motivated them to take care of their health.

Interviewer: And what motivated you to start HIV treatment? Participant: I just took the results in a positive way. My family advised me, and my wife said it was a normal thing. My mother told me that my uncle is infected and he is okay. My aunt is also [infected] but she is still alive and still strong. Just look at it as a normal thing. It has happened, you have to accept the results. So they encouraged me. (Male methadone client on ART)

[My mother's contribution] was when I came for [HIV] treatment. When I was following up on treatment, she was there. She did not abandon me. We were together. When I am sent there to take medicine, she is also there. When I am given medicines and they are finished, she reminds me. When I am sick, she takes the card and comes and takes and brings me the medicines. So I am so grateful. (Female methadone client on ART)

Many of the MAT providers interviewed viewed the support of family as essential for methadone clients to initiate and remain on ART. Family support came in many forms, including accompanying the client to HIV-related clinic visits, providing emotional and nutritional support, assisting with transportation costs for HIV and methadone treatment visits, and monitoring ART adherence. Disclosure of one's HIV status, however, is a prerequisite to accessing that support and disclosure is difficult for many individuals.

There is [support]...for those who are willing to disclose their HIV status. If one decides to disclose and the people close to him are okay with it and are willing to support, they will help him. And they are willing to follow-up on what is needed, like clinic dates. This is more helpful to those who have support compared to those who don't. So it is a bit harder for those who are unwilling to disclose. (Doctor at the methadone clinic)

Some participants perceived fear of being stigmatized by family and their peers at the methadone clinic as a reason many clients do not disclose their HIV status.

Inadequate ART counseling

Some methadone clients also perceived inadequate HIV care and treatment, including ART, counseling as a barrier to timely ART initiation.

Interviewer: What do you think could be reasons why patients who are supposed to be on treatment are delayed in starting treatment on time?

Participant: This is because they delay seeking services, inadequate counseling. It's that [health providers] aren't reaching different neighborhoods to find and educate them. It is so difficult for a person to decide himself to come for testing, to accept and to go to the [HIV] clinic. Someone has to be counseled properly. (Female methadone client on ART)

Despite reports of inadequate counseling expressed by clients, other clients, particularly those on ART, described providers at the methadone clinic as facilitating their enrollment

into HIV care and their initiation of ART. Persistent monitoring and follow-up by MAT providers led some methadone clients to move toward treatment. Additionally, counseling people with HIV that an HIV diagnosis is no longer an inevitable death sentence given the availability of life-extending drugs was viewed as an important step in motivating individuals to accept ART.

A few providers felt that counseling was being provided to clients, but clients' ability to understand the counseling and act on the advice given was low. Some methadone clients interviewed acknowledged the reluctance of some clients from following up on the necessary testing and ART initiation procedures. However, they tended to attribute this reluctance to denial and one's life situation that makes ART a lower priority, especially when clients exhibited few signs of physical illness.

Feeling physically ill

Some clients revealed only initiating ART once they felt physically ill. One client described how he was unwilling to accept his HIV diagnosis and went to great lengths to avoid initiating treatment. He described lying to providers who requested that he bring his treatment supporter, his brother, to the clinic to discuss ART initiation:

Sometimes I lied that my brother is at a funeral. Sometimes I lied that his wife was in trouble. I lied to the extent that the doctor got so angry with me and he told me, "One day you will become sick"...Sometimes he told me that I would get [skin lesions]. He told me so many things. At the end of the day, I found myself so tired and sick. *Mficha maradhi, mauti humuumbua*. [Whoever hides the disease, death will reveal him.] I finally agreed and told my brother that he was needed at [the clinic]. I thought let me start treatment because I noticed that I was becoming thin, my legs were aching, my arms were not well...I wondered, "What is happening to me?" Then I decided let me go [seek HIV treatment]. (Male methadone client not yet on ART)

Some clients also expressed that seeing their peers physically become ill encouraged them to seek treatment: "I was scared. I used to see my peers, the way they became weak. So I said let me go and start treatment early while I still have my strength before I become weak." (Female methadone client on ART)

Providers fail to follow-up with clients

Though it was generally recognized by participants that persistent follow-up is needed to facilitate prompt linkage to HIV care and ART, one provider acknowledged that sometimes MAT providers fall short of closely monitoring their HIV-positive clients.

It was written, "Trace CD4 result." The [provider] should have followed the instructions but did not check to see if the CD4 was traced or not. The client was sent to the [HIV clinic], but the provider did not check what was reported out of there. For example, the last three visits, [the client] was told to go the [HIV clinic] and bring back a treatment card so he could commence with medication. But it may have happened that the provider on duty ignored all the procedures hence hindering the client's right to medication. So partly it is the providers' fault. We fail to make

appropriate follow-ups. “Why is the CD4 count low and the client hasn’t started medication yet?” “What went wrong?” (Doctor at the methadone clinic)

The root cause of this treatment breakdown is multifactorial, but some MAT providers mentioned that there is limited clinic staff trained and dedicated to providing HIV-related services to methadone clients. HIV testing and counseling, CD4 testing and retrieval of test results, and the supervision of ART distribution and administration were performed by only two nurses based at the methadone clinic.

Discussion

This study examined barriers and facilitators to ART initiation among women and men receiving methadone-assisted treatment at the Muhimbili National Hospital methadone clinic in Dar es Salaam, Tanzania. We interviewed 20 methadone clients living with HIV, women and men, and 12 providers based at the methadone clinic. Our research illuminates the need to implement strategies to overcome systemic barriers, stigmatization, and limited social support that hinder timely ART initiation.

Integration of HIV and methadone treatment services has been shown to improve immunologic function in people who use drugs (Kinahan et al., 2015). The high failure rate to initiate ART among people who inject drugs in resource-limited settings represents a lost opportunity to reduce morbidity, mortality and the spread of infection. Initiating people who inject drugs on ART will not only benefit the infected individual, but also the uninfected community. This should be a strong incentive for governments to prioritize treatment as prevention as an effective HIV disease control strategy (Ogbuagu & Bruce, 2014). Our findings suggest that the low proportion of ART-eligible methadone clients initiating ART is partly due to the inconvenience of clients needing to initiate ART outside the methadone clinic. In the current integrated model at the methadone clinic, clients are referred to off-site HIV care and treatment clinics for ART initiation from a qualified HIV care provider. Understanding that less than half of methadone clients eligible for ART at MNH are initiated on treatment within three months (Tran et al., 2015), integrating HIV care and treatment, including ART initiation and counseling, at the methadone clinic should be strongly considered. Specifically, clinical staff at the methadone clinic should be cross-trained in first-line HIV care and treatment. This would provide them with the knowledge and skills to offer ART adherence counseling and initiate methadone clients on ART, which would address the challenge of losing clients to follow-up before ART initiation (Bruce et al., 2014).

Currently active social support is strongly recommended for obtaining ART and may be used as justification for denying or delaying treatment. With burgeoning data on the benefit of ART both to reduce individual mortality and also the secondary benefit of treatment as prevention, a lower threshold model is critical. Since methadone clients come daily, they may actually see clinical staff more often than some family members who are brought into the clinic as peer support. The clinic itself, therefore, should be able to act as the social support for any methadone client requiring ART. This would allow for more clients to

rapidly access ART that will assist in the reduction of the clinic's overall HIV viral load and the risk of transmission outside the clinic.

Point-of-care (POC) CD4 diagnostic capabilities within the methadone clinic are another possible way to reduce delays in CD4 testing and receiving CD4 test results from the off-site laboratory. POC CD4 diagnostic technologies are reliable, user-friendly, and appropriate for use within clinic environments in resource-limited settings with limited access to reference laboratories (Malagun et al., 2014; Rathunde, Kussen, Beltrame, Dalla Costa, & Raboni, 2014; Sukapirom et al., 2011; Wade et al., 2014). Integrating POC CD4 testing in HIV services offered at the methadone clinic would facilitate same day ART-eligibility screening for methadone clients who test positive for HIV, reducing the time to ART initiation (Govindasamy et al., 2014; Lambdin, Cheng, et al., 2015). Research suggests that POC CD4 tests at the time of HIV diagnosis have the potential to improve clinical outcomes and reduce health care costs compared to traditional laboratory-based CD4 tests (Ciaranello et al., 2015; Hyle et al., 2014).

Our research also sheds light on the complex role that stigma plays in impeding the uptake of ART among methadone clients living with HIV. Fears of HIV stigma and rejection by family and community due to disclosure of one's HIV status have been widely reported as barriers to the linkage of non-drug using people living with HIV to care and treatment (da Silva et al., 2015; Govindasamy, Ford, & Kranzer, 2012). Study participants echoed these fears, but also expressed stigma due to a history of drug addiction as affecting the linkage of methadone clients to receive ART at HIV care and treatment clinics in Tanzania. Our findings indicated that participants perceived internalized stigma as deterring some methadone clients from initiating ART. Research conducted in Russia with people who inject drugs similarly demonstrated that internalized and anticipated HIV and drug stigmas were correlated with lower rates of health service utilization and poor health (Burke et al., 2015; Calabrese et al., 2015). Some participants also reported that stigma at HIV clinics due to their history of drug addiction dissuaded some methadone clients from attending their medical visits at the HIV clinic. Stigma against people who inject drugs in health care settings has been previously reported in the literature as a systemic barrier to ART provision (Wolfe, Carrieri, & Shepard, 2010).

Though data is limited evaluating the influence of stigma-reduction interventions on the uptake of ART (Stangl, Lloyd, Brady, Holland, & Baral, 2013), there are therapeutic and structural strategies that could potentially mitigate the effects of internalized, anticipated and enacted stigmas on ART-seeking behaviors of people who inject drugs. Researchers have suggested that therapeutic strategies aimed at assisting individuals in modifying negative perceptions could be beneficial in reducing the impact of internalized and anticipated stigma on health behaviors and health outcomes (Burke et al., 2015; Heijnders & Van Der Meij, 2006). Engaging family and friends in counseling sessions to build social support for methadone clients diagnosed with HIV could also address stigma at the interpersonal level. Previous research has demonstrated that social support from other people living with HIV and from family and close friends improves engagement in HIV care (Kelly et al., 2014; Ramaswamy et al., 2013). Peer supporters could support methadone clients living with HIV in navigating the HIV care and treatment process. In a systematic review of interventions to

improve or facilitate linkage to or retention in pre-ART and initiation of ART, peer supporters and navigators were found to increase enrollment into HIV care (Govindasamy et al., 2014). Given the daily visits to the methadone clinic, the clinic itself offers an incredible opportunity to provide support for clients. Methadone clinic-based social workers and community social workers could also play a key role in building the support system of methadone clients.

To address enacted stigma, stigma-reduction strategies could be implemented at the health system level to create enabling environments for HIV care, including ART initiation. Within the methadone clinic, the protection of clients' confidentiality should guide decisions regarding aspects of clinical care, procedures and structures so as not to inadvertently expose clients' HIV status to others. Currently methadone and ART are dispensed jointly for some patients from a common window, which jeopardizes the confidentiality of patients opting for adherence support. New models that balance the clinical benefit of adherence support (i.e., directly observed therapy) with the confidentiality concerns and stigma are needed. To combat stigma amongst peers, HIV education for clients attending the methadone clinic could dispel myths about HIV transmission and reduce stigma and discrimination against their peers living with HIV.

This study builds on our previous implementation science research to improve the quality of health care for drug users in Tanzania (Lambdin et al., 2013; Lambdin, Cheng, et al., 2015; Lambdin et al., 2014; Tran et al., 2015). Due to the nature of qualitative research, our study is limited by its small sample size and the exclusion of former, defaulted HIV-positive methadone clients whose experiences may differ from those of clients currently engaged in methadone treatment. Despite these limitations, this research highlights that health system factors, stigma and limited social support pose challenges for methadone clients living with HIV to initiate ART. Our findings suggest that on-site point-of-care CD4 testing, a peer support system, and trained HIV treatment specialists who are able to counsel HIV-positive clients and initiate them on ART at the methadone clinic could help reduce barriers to timely ART initiation for methadone clients.

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Table 1

HIV care and treatment management of methadone clients with service delivery location.

Procedure	Location
HIV counseling and testing	Methadone clinic ^a
CD4 testing	MNH central laboratory
Baseline lab testing	MNH central laboratory
TB screening questionnaire	Methadone clinic
Assessment of need for ART initiation	Methadone clinic
HIV care and treatment clinic registration and card dispensing	HIV care and treatment clinic ^b
ART initiation counseling	Methadone clinic + HIV care and treatment clinic
ART initiation: drug prescribing	HIV care and treatment clinic
Post-ART initiation:	Methadone clinic
Methadone dose change	
Post-ART initiation scheduled follow-up visits	HIV care and treatment clinic
Maintenance management:	Methadone clinic and HIV care and treatment clinic
CD4 retesting	
Monitoring	
ART drug changes when needed	HIV care and treatment clinic
Side effects	
Drug failure	
Special situations	HIV care and treatment clinic
Pregnant patients	
Significant psychiatric disease	
Comorbid diseases:	
- Hepatitis B	
- Hepatitis C	
- Renal failure	

^aMethadone clinic at Muhimbili National Hospital.^bHIV care and treatment clinic at Muhimbili National Hospital.