



# 'My Tablets are on Top of the Fridge': The Roles of Relationship Desire and Medical Mistrust in ART Adherence for HIV-Positive MSM and Transgender Women Living in Rural South Africa

Joseph Daniels<sup>1</sup> · Helen Struthers<sup>2,3</sup> · Kabelo Maleke<sup>2</sup> · Tim Lane<sup>4</sup> · James McIntyre<sup>2,3</sup> · Tom Coates<sup>5</sup>

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## Abstract

Given the high HIV prevalence for men who have sex with men (MSM) and transgender women in South Africa, there is limited understanding of social determinants that influence antiretroviral treatment (ART) adherence. Although universal testing and treatment (UTT) is available, ART adherence remains suboptimal. We conducted focus groups with MSM and transgender women in order to understand factors influencing their ART adherence in Mpumalanga, South Africa. All focus groups were audio-recorded, transcribed and translated for analysis using a constant comparison approach, guided by the concept of Therapeutic Citizenship. We found there is medical mistrust of ART based on differing interpretations of HIV cure that may influence treatment adherence behaviors within social networks, and relationship desire had a significant influence on optimal ART adherence. Our findings suggest that clinics must provide interventions that integrate HIV disclosure and relationship skill-building to support optimal ART adherence for MSM and transgender women under UTT.

**Keywords** HIV · ART · Treatment adherence · South Africa · Relationships · Medical mistrust

## Introduction

Since 2013, there have been major shifts in HIV prevention and treatment for transgender women and men who have sex with men (MSM) in South Africa and other African settings [1–4]. These shifts include MSM-tailored HIV prevention programming and MSM health competency training to improve some clinical environments for MSM, including gender sensitivity training [5–7]. These MSM-specific programs were part of the national South African HIV strategy to include universal testing and treatment (UTT)—regular testing and antiretroviral therapy (ART) access at diagnosis

rather than at a specific CD4 count [8–10]. This strategy is designed to turn the tide on and improve health outcomes for those living with HIV, which includes building optimal ART adherence behaviors (not missing more than two dosages in a 2 week period [11, 12]. MSM and transgender individuals are part of this national strategy as key populations; yet, there are substantial gaps in our understanding about social determinants of ART adherence behaviors for MSM and transgender women in South African settings.

We do know that there is gap between testing and treatment for MSM and transgender women across African settings; however, in South Africa this gap has been attributed in part to history of ART availability. MSM are often lost to follow-up for up to 2 years after testing HIV-positive and before initiating treatment, and during this time they may actively circumvent clinical care due to concerns about HIV gossip and involuntary disclosure practices, instead using traditional healers for HIV care [2, 13]. After linking to care and initiating ART treatment, MSM and transgender women must still navigate stigma and discrimination in health care settings and their communities [14–16]. As in other settings, social isolation often occurs due to stigma based on HIV status, sexuality and gender identity, in part resulting in high rates of excessive alcohol use as a coping mechanism [13, 17–19]. For MSM and transgender women in

✉ Joseph Daniels  
josephdaniels@cdrewu.edu

<sup>1</sup> Department of Psychiatry and Human Behavior, Charles R. Drew University of Medicine and Science, 1731 E. 120th St, Los Angeles, CA, USA

<sup>2</sup> Anova Health Institute, Johannesburg, South Africa

<sup>3</sup> University of Cape Town, Cape Town, South Africa

<sup>4</sup> Equal International, San Francisco, CA, USA

<sup>5</sup> UCLA Center for World Health at the David Geffen School of Medicine, Los Angeles, CA, USA

other African and US settings, this psychological stress and isolation combined with excessive alcohol use have been determined to be key predictors for drop-off along the treatment cascade and ultimately ART nonadherence [20–22]. Further, stigma and discrimination in healthcare settings can perpetuate medical mistrust, which has been shown to negatively influence ART adherence within social networks [23–25]. In South Africa, this mistrust may be compounded by recent changes in HIV standard of care [26]. In this new era, instead of requiring CD4 thresholds be met, patients are provided immediate access to ART upon testing HIV-positive, which improves quality of life and reduces transmission within communities. Given the historical struggle to gain access to affordable ART in South Africa, led by community organizations like the Treatment Action Campaign, this new accessibility of ART may be perceived as uncertain in communities, especially as the stability of global funding for HIV treatment also remains a concern [27, 28].

Within the context of medical mistrust and ART uncertainty, adherence is dependent on an individual's ability to effectively plan to take their treatment as well as feeling safe and supported in their ART treatment; MSM and transgender women in several African settings lack both skills and social support in all of these domains, including in Mpumalanga where this study was conducted [2, 29–31]. Our research shows that MSM and transgender women find it difficult to obtain support through disclosing their HIV status to family members because it often requires also disclosing their sexuality and/or gender identities, which are highly stigmatized in families and communities [11, 32]. Further, it has been shown that social dynamics between older and younger MSM within specific communities can influence ART adherence and HIV prevention behaviors [33, 34]. Although there is limited research on African MSM in this area, in other global settings it has been shown that social isolation from the larger gay and transgender communities reduces an individual's ART adherence behavior, coinciding with increased depression and HIV risk behavior to counter this social isolation [35–38]. These studies suggest that a combination of social and behavioral factors influence ART adherence, which may impact HIV prevention and treatment outcomes for MSM and transgender women in South Africa. Therefore, we conducted a qualitative study to understand social determinants associated with HIV care for HIV-positive MSM and transgender women in Mpumalanga in rural South Africa.

## Methods

In 2013, we started a 5 year qualitative and quantitative study with HIV-positive MSM and transgender women living in a rural setting in South Africa. MSM and transgender

women were at different stages across the HIV treatment cascade.

## Study Setting

We conducted the research in a high HIV prevalence setting of Mpumalanga Province, South Africa, where 1 in 2 MSM over the age of 25 years are HIV-positive [39]. Our study was conducted in two Mpumalanga districts with routes to other countries and other major provinces, making them major transport corridors within South Africa. Ehlanzeni District is located in South Africa's Lowveld with a subtropical climate, making it ideal for major commercial farming and tourism from within South Africa, Mozambique and Swaziland. The Gert Sibande District is located on the Highveld and is one of the gateways into Swaziland and KwaZulu-Natal Province from the most populated province in South Africa, Gauteng. Its economy is largely supported by coal mining and grain farming. Each of the settings are largely rural with a provincial capital, Mbombela, and smaller towns, townships and villages.

## Study Participants and Data Collection Procedures

Participant recruitment has been outlined previously, and participants were conveniently selected from the larger study for the focus group discussions [11, 40]. The larger study had 45 participants, and nearly all went to a public clinic. For these focus group discussions, conducted in 2017 and 2018, participants were selected if they were linked to care by going to clinic regularly and either knew they could start ART or had initiated ART treatment. Focus group discussions were conducted by two researchers who lived in Mpumalanga and maintained field notes for observations about MSM and transgender women's social discussions during the data collection period [41]. The focus groups utilized a semi-structured protocol along with predetermined probing questions to facilitate discussion across the domains: ART adherence development, romantic partners, health goals, HIV support, and MSM community [42, 43]. The focus groups were conducted in English with code-switching in SiSwati and IsiZulu. All sessions included ten participants, all of whom either identified as gay and/or a transgender woman; some gay men were drag queens. Here, we use the terms MSM and transgender women, but we acknowledge more research is needed to identify more indigenous terms, such as drag queen, which we discuss in the Results section [44, 45]. There was a total of 20 participants across the two focus groups, and each focus group was 2 h long. The focus group discussions were audio-recorded, transcribed and all SiSwati and IsiZulu words were translated into English for analysis.

## Therapeutic Citizenship in HIV Treatment for Gay Men and Transgender Women

We applied Therapeutic Citizenship domains to explain the community-based social determinants of ART adherence for gay men and transgender women in Mpumalanga, South Africa. This concept refers to the way different HIV organizations, or informal and formal networks, generate interventions, resources, and ways of thinking about HIV prevention and treatment, that are specific to groups of people who share a common experience in areas such as gender, race, and sexuality in a particular context [27, 46, 47]. The key domains of Therapeutic Citizenship for HIV treatment are a near-death experience (social or physical) and treatment uptake, counseling and new identity formation, support group formation and belonging, resource access strategies and making claims about ART access, advocating for rights, and developing adherence as a social responsibility [46]. Here, Therapeutic Citizenship is framed as empowerment specific to gay and transgender women in African settings [27, 48]. This means that HIV treatment interventions are grounded in local gay and transgender culture, and are often led by those who have expertise and history in HIV prevention and treatment within these communities. It also builds from the assumption that MSM and transgender women desire to actualize their right to health as sexual and gender minorities, including accessing ART without discriminatory and stigma-reinforcing experiences in clinics, pharmacies and their communities [11, 32].

### Data Analysis

Utilizing a constant comparison approach guided by Therapeutic Citizenship, [11, 49] the data was analyzed by the research team. This approach involved an iterative process of theme development as the researchers reviewed and discussed the transcript data over time. Since this project was part of a larger study, the analysis utilized associated published research to inform this process. Meeting notes were taken, which included researcher discussions about code associations and emerging themes [50]. This approach also integrated memo writing to outline and refine factors that contributed to the development process of ART adherence and the social factors that influence adherence. Findings from the transcripts, notes and memo data were triangulated to: (1) assess consistency across data sources, and (2) identify major themes that developed from multiple discussions between researchers about data interpretation. The research team met every other week for 3 months to complete this analysis.

## Human Subjects

All study procedures received ethical approval by the University of Witwatersrand and the UCLA Institutional Review Boards.

## Results

We recruited twenty participants ( $N=20$ ), of whom 16 were MSM (gay and bisexual-identified) and four were transgender women. It is important to note that the use of the term ‘transgender’ was not used frequently in these communities when this study started; rather ‘drag queen’ was a common term used by MSM to refer to themselves and others who dressed in traditional women’s attire on a daily basis or for special events, and/or identified as a woman [44, 45, 51]. As the study progressed, an increasing number of individuals who identified as a drag queen at the start of the study began to use the term ‘transgender woman’ to identify themselves, and many had a desire to transition fully. However, ‘drag queen’ is a term that remains in use in the community, and some participants continued to identify as a drag queen but not as a transgender woman. All the participants were linked to care with regular clinic attendance. The range of regular care linkage was 4 months to 10 years. All but one of the participants were prescribed ART, and about half had collected their medication within the last month. The one participant not on ART was informed by his doctor that it was available to him and that treatment would support his health, but the participant stated he was not ready to begin treatment. The reasons why someone may not go onto treatment or lack optimal ART adherence in Mpumalanga are outlined next.

### ART Mistrust and Inconsistencies in Treatment Messaging from Health Care Providers

Some participants did not trust their access to ART, nor understand the clinical components of treatment, and often discussed a general mistrust of the pharmaceutical research community. As one participant stated:

They [the medical community] keep the cure to themselves so they can go to the economy with it. Lesser we are. They don’t think about us. Transactional [To make money] is the study for ARVs [HIV cure] because there won’t be [HIV organizations] after a cure. They have started a cure but haven’t unleashed it yet. Like, how come I am virally suppressed, if there is no cure?  
–Participant 18, Transgender woman

Here, we learn that the participant is virally suppressed, but the conversation focuses on a conspiracy that the

pharmaceutical research community has a cure for HIV but won't deliver it due to economic undesirability. This conversation is grounded in the participant's question at the end of her point: How can she be virally suppressed while no cure exists? Participants on ART felt healthier than they did prior to taking treatment, and this healthy feeling made them question whether they were cured or not. A few participants expected to be cured by taking ART and attaining viral suppression, yet they seemed to question whether they were being prescribed 'the ART that leads to a cure'. Few participants discussed how ART suppresses the HIV virus, and that this suppression depends on regular adherence to their treatment, further underscoring this point. This mistrust of ART treatment and incomplete understanding of ART may be linked to their experiences with health professionals in clinics, which also may be influencing their adherence behaviors, as one participant stated:

We carry our daily pills [ART] to bars with condoms and lube! But, some carry one pill at a time, but they don't go away from home for more than one day. Most of us skip our pills if we go away from home on the weekends, but doctors tell us that skipping one will not affect us much since the pill is in our system. –Participant 12, Transgender woman

In this quote, we show that participants had different ART adherence patterns, and that some did not bring their medication with them when they were away from home. Often MSM will stay at friends' homes over the weekend, and during this time many other MSM are in the home as well; this deters some from bringing their ART since this may involuntarily disclose their HIV status to others in the MSM community. Some participants justified not taking their HIV treatment by referring to their doctor's advice that skipping one pill would not be detrimental to their health, which led to some debate among participants about whether this was true or not. Some participants assumed that skipping one dosage could be extended to the weekends when they were regularly away from their home to party. At these times, participants may borrow ART from their close friends:

Borrow medication—Just check that they are taking the same medication and if it's the same. –Participant 23, MSM

What is the difference between the pills? –Participant 12, Transgender woman

I asked in the clinic [and they said] that different companies have the same medication, like Atribis v. Atroiza. –Participant 23, MSM

In this conversation between participants, they discussed borrowing ART from others when they leave it at home so that they can attend parties and be adherent to their ART

without the stress of being involuntarily disclosed as HIV-positive. Some participants relied on others to bring ART to parties or events that last over the weekend. This conversation also included a discussion about different brands of ART that are prescribed, and how at times they received different brands than usual, leading them to question how the medications may or may not be different in treating HIV disease.

However, participants understood the health implications of defaulting or not being adherent to their HIV treatment:

Defaulting not right. Might die and go to clinic and give you another medication for something else. Shit can happen. Your liver going to be crushed. Took time [to get on treatment] and they [health care providers] teach us to go to clinic. [Health care providers] ask us when times is right [to start ART]. For 3-6 months, my CD4, it is very high. When time's right, I will accept [taking ART]. I'm not ready yet due CD4, but every year I go for viral load. –Participant 6, MSM

Among participants, there was a common discussion about being 'ready' to start treatment. Participants were concerned about becoming ill and dying from HIV-related diseases, but not all were ready to start treatment. They discussed that many MSM rely upon their CD4 count and personal assessments of their health in order to make decisions about starting ART or not.

### **Building HIV Support is Navigating Possible Loss**

After starting treatment, participants explained that they cautiously disclosed their HIV status to others in order to build their HIV support system, and at times, this impacted their ability to adhere to their treatment. Participants were at different stages of disclosure, from total concealment to full disclosure to everyone including new friends. Among participants who were completely 'out' about their HIV status, they explained that their HIV medication was displayed in their home to generate conversation. As one participant explained:

[My] support base has been increasingly rapid. My tablets are on top of the fridge. So, when you enter, oh, someone has HIV here and it's ok. Why display, in my own mind, I'm trying to reach out to you. Can't tell you to get tested if I don't know [you're] not open about it (talking about HIV). Yes, he's still alive, looks healthy, and [can] have those ideas of getting tested. –Participant 10, MSM

In this quote, the participant describes that her support base is expanding, and, as a result, she keeps her 'tablets', ART medication, 'on top of the fridge', which is a very visible place in the home for anyone to see including family

and visitors. Often, participants most open about their HIV-positive status and taking ART would state that their medication was on top of the fridge to allow for questions and conversations. The participant above stated that she puts her medication on top of the fridge because she wants people to ask her about her ART, and also to demonstrate to them that she is alive and healthy—to show other people that you can have a healthy life while HIV-positive, if you take your medication.

Not all participants were as open about their HIV status. Often participants discussed the challenge of taking their ART medication after moving into a place with their boyfriends or partners. As one participant stated:

For me, it was difficult to tell [my] partner, but ended up telling him, and now he reminds me to take pill at 6 am. Brings water and tablet. My medication are all over! I've got this mind—makes him feel comfortable and to take their medication too. Defaulted for three months because of bf [boyfriend] and living in one room and how take medication?! You must do something about it. –Participant 2, MSM

As in the case above, participants frequently described a common situation when moving in with their partners; having not yet disclosed their HIV-positive status to their partners caused them to default on their HIV treatment. This participant states that it was difficult to take his ART while living with their partner in a one-room home. Prior to living with his partner, he was adherent to his medication, but the fear of his relationship ending stopped him from disclosing his HIV status to his partner, which caused him to default. However, desire to protect his health led to him disclosing to his partner after moving in, and now his partner is a main source of support for his ART adherence. There is a strong desire to have multiple partners for MSM and transgender women in Mpumalanga, and this desire influences HIV disclosure and risk.

### HIV Risk During Partner Competition and Loneliness

Participants also discussed being lonely, and their need to have love and companionship as a means to reduce the amount of loneliness in their lives. Yet they also described competition with other MSM and transgender women for partners. This competition involved HIV gossip to eliminate the competition. This loneliness-competition dynamic is represented below:

Why we should disclose [HIV status]? We are saying we find it hard to talk about HIV... There are still those who are afraid to come out to their families. If we do talk about it [HIV], it's on the side [with close friends or family]. If we hear someone talking about HIV,

we ask, 'Why you are talking so much about HIV?' And so, in our mind, we think they have one [HIV]. That makes your chances to get proposed to [finding a steady boyfriend or husband] less, and the rest of the group assumes we are HIV positive. –Participant 25, MSM

It goes back to competition. Once I disclose, then I get a bf [boyfriend] to propose. Before he proposes, he wants to find out about me. And, so, he goes to [a friend of mine], and [that friend] is also interested in my bf, and he will tell him that I am HIV-positive. Before you know, more people know your status. –Participant 17, MSM

In the first quote for this section, the participant outlines a common reason for MSM to not disclose their HIV status nor discuss HIV in general. Many MSM have not come out to family as HIV-positive, and this is considered the first step in the process of gaining support for HIV care and ART adherence. Without this core support MSM are reluctant to disclose to others, including potential partners, because it will reduce their chances of getting a proposal for marriage or steady boyfriend status. Further, if one does talk about HIV, assumptions of HIV-positivity also reduce the chance of getting a partner. For many MSM, this HIV gossip is used as a tool to eliminate the competition for partners. As in the second quote above, MSM usually get a boyfriend proposal before each knows their HIV status. Each of them will typically go to a close friend of the boyfriend to find out more about them. In that process, that close friend may like them too, and then he will disclose their friend's HIV status in order to get the boyfriend. Thus, not only do MSM fear losing a potential boyfriend or partner due to HIV gossip, but they fear loneliness, which leads them into unhealthy relationships.

Some MSM also discussed increased HIV risk behaviors because of a desire to have a partner, especially as they found their dating options reduced over time due to HIV gossip.

You find yourself involved with Ben10s [younger MSM new to the gay scene, who may or may not be out]. As dating becomes more scarce [fewer people to date] and that Ben10 starts beating you, you stay in that relationship because no one is proposing to you anymore [to be their boyfriend or husband]. You stay in [the abusive relationship] emotionally. We also have problem because we tend to buy Ben10s things and give them money. If you go to the shebeens [taverns in a home], we like to show off that 'I got money' so that this young Ben10 has interest me and see that because I have money I can fulfil their needs. For me, I feel this is emotionally abusive because you are under

the impression that the guy loves you. But, the guy does not love you because he loves you for your bank account. He can't get whatever he wants to get. So, that's abuse. –Participant 35, MSM

The competition is so high that there are so many dramatic things that we do. Another thing—my experience in Ermelo is that they will approach you, and if they say when it gets to sex, they say no condom. Almost 80% of them will say this to us. If we want this relationship, then no condom. –Participant 32, MSM

In South Africa, Ben10 refers to younger men who are usually in sexual relationships with people that may or may not be transactional. Often Ben10s are much younger than their partners, under 24 years of age, with limited employment. The term Ben10<sup>TM</sup> itself comes from the cartoon character of the same name, a young man who has magical powers to address evil while exhibiting immature behaviors. Many participants discussed having relationships with Ben10s because they couldn't find other MSM to date in their own age group as a result of living openly with HIV, or HIV gossip. Relationships with Ben10s were perceived as largely transactional, involving money and gifts for partnership and sex without prevention (i.e. condoms and lube). Some MSM used their money to attract Ben10s as a means to develop a romantic relationship, but they realized later that they were just in the relationship for the money. Many considered this to be abusive behavior by Ben10s. Participants did discuss physical and emotional abuse while dating Ben10s, which included threats of leaving the relationship if the participant wanted to use condoms during sex, as described in the quote above. The fear of losing a partner, even if it was an abusive relationship, outweighed any HIV risks; often participants would spend more money in order to keep their partner, even a Ben10, from other MSM individuals in the community due to partnership competition.

## Discussion

Our study was designed to understand the social determinants of ART adherence for MSM and transgender women in Mpumalanga, South Africa. We found that a few participants had optimal adherence behaviors, but most had developed suboptimal ART adherence or were planning to initiate treatment in the future when they were ready [12]. The barriers to optimal ART adherence may be explained by our application of an empowered Therapeutic Citizenship with a particular focus on the domains of 'accessing resources and treatment while making claims about ART access' and 'fashioning a new perception of self' [27, 46]. In the first domain, we found that medical mistrust of ART was present; in the second domain we learned that relationship

desire was a key social determinant of ART adherence for MSM and transgender women in South Africa.

## Medical Mistrust of ART Because It Did Not Cure HIV

Participants discussed their access to ART, or intention to start treatment, but also discussed wanting access to ART that cures HIV. The idea of an 'ART that cures' was based on the experiences of MSM in their social networks who were virally suppressed, but it has its roots in the history of ART in South Africa [27, 28]. Ultimately, participants did not fully trust the ART prescribed to them. Medical mistrust can develop in communities when there is a history of discrimination in clinics and research with limited ethical guidance [23]. Further, medical mistrust of HIV care refers to suspicion of health care workers, HIV treatment, and public health interventions that result from discriminatory medical care or research that has limited community engagement to build trust [52–54]. Studies that examined medical mistrust and ART adherence have demonstrated that it can foster sub-optimal and non-adherent behavior, especially among those who know someone in their social networks who expresses such mistrust [24, 25]. Although our previous research demonstrated that MSM and transgender women experienced sexuality and HIV status-based stigma and discrimination from health care providers, we found here that medical mistrust centered around viral suppression and the idea of an HIV cure. Specifically, participants believed they were HIV-positive and needed ART to manage their disease, and that some participants were virally suppressed and healthy as result of being on treatment. But, by virtue of being virally suppressed they questioned why ART did not cure them of HIV disease. This may be explained in part by the concept of 'cure' itself, which can have a layered meaning in some African communities. In their work to develop ethical HIV cure research, Staunton et al. explained that 'cure' is conceptualized more like the medical state of remission in some traditional African communities, such as those in rural settings like Mpumalanga, which may explain some participants' mistrust of ART [55]. Specifically, medication—whether traditional or clinical—can be perceived as treatment to keep one healthy, but the disease, illness or infection can return.

Participants taking ART were healthy and thus may be conceptualizing this healthy state as a cure, with possibility of re-infection. Therefore, if they feel healthy while on ART yet their doctor tells them that they are not cured, this differing cure worldview may generate some mistrust in ART. Participants discussed their belief that research to develop ART medication was strictly an economic enterprise; as one participant stated, 'transactional [To make money] is the study of ARVs [HIV cure]'. Some, but not all, suggested that an HIV cure existed but was not made available in their

communities. This suspicion of ART may be explained by their irregular ART prescriptions with different medicine brands and by the recent history of AIDS Denialism in South Africa. During this time, ART was not made available since it was suspected as a means of social control. It was also inaccessible due to cost, which was driven by pharmaceutical patents at the time [27]. Similarly, participants suspected that current research to develop new ART medications is driven by financial gain rather than community, and that this drive keeps the ‘ART that cures’ away from some communities.

Importantly, mistrust about the availability of an ‘ART that cures’ did not seem to influence participants’ current adherence behaviors, nor deter their plans to initiate treatment. As some stated, ‘my tablets are on top of the fridge’; some participants were open about their HIV status and were taking ART treatment to prevent themselves from getting ill. Ultimately, participants didn’t want to be ill and develop more severe health conditions as a result of being non-adherent. However, the inconsistencies of ART prescriptions and adherence messaging made participants feel less socially valued by the health system, especially for those who could not discuss with family and friends that they were gay, bisexual or transgender as well as HIV-positive. Many felt disconnected from others living with HIV in their community, and the inconsistencies of ART perpetuated by health care providers contributed to this sense of isolation. Only a limited few had family support for their sexuality, gender identity and HIV treatment, yet all participants desired relationships as a solution to this isolation. This desire seemed to directly influence how MSM and transgender women disclosed their HIV status, as well as how they started and adhered to their HIV treatment.

### Relationship Desire Impedes HIV Disclosure and ART Adherence

Being HIV-positive has begun to reshape how MSM and transgender women approach their relationship goals, and in turn their perceptions of themselves as sexual and gender minorities living in Mpumalanga. During our study, we found that MSM and transgender women had a strong desire to be in a loving, long-term relationship, and this was important to social standing and for their general well-being. Similar to other studies, we found that the fear of losing a relationship was a significant inhibiting factor in disclosing one’s HIV status and ART treatment [38]. Like the participant who stopped his ART treatment because he moved in with his boyfriend to whom he hadn’t disclosed his HIV status, MSM and transgender participants discussed the difficulties and fears of disclosing their status and treatment to their partners, especially given the intense partner competition coupled with HIV gossip in this setting. Some

participants discussed finding a partner younger than themselves due to this competition, and in this process, found themselves in a relationship that compromised their health and their partner’s health, increasing HIV transmission risk. When discussing younger partners (Ben10s), some participants described interactions similar to typical ‘sugar daddy’ relationships of young women in Mpumalanga; more research is needed to understand the transactional nature of these relationships in order to improve HIV prevention [56].

Most participants who witnessed ‘sugar daddy’ relationships saw them fueling partner competition and ultimately their sense of loneliness and isolation. This influenced when they decided to have their ART with them or not, perpetuating drop-off along the treatment cascade. Specifically, participants believed that ART was a major barrier in their pursuit to find a boyfriend or husband, compromising the vision they had for their lives. This desire for a relationship led many participants to figure out how to take ART secretly, or not at all, though some chose to come out as HIV-positive by having ART visible in their homes. If a potential boyfriend came to their house and saw the ART and asked about it, then they could start a conversation with them about living with HIV. However, this conversation was dependent on the potential boyfriend to initiate, and few MSM and transgender women were at this stage in their lives. Thus, we found that relationship desire for MSM and transgender women is a significant social determinant of ART adherence, limiting their ability to take their ART optimally.

### Conclusions

MSM and transgender women have experienced significant barriers in developing skills and knowledge to empower them in their HIV treatment [46]. We show here that while accessing HIV care, they navigate inconsistent ART prescriptions and mixed messaging about ART adherence that may be fueling an HIV cure myth, exacerbated by MSM and transgender women’s experiences of healthcare discrimination in South Africa. Relationship desire also had direct implications for ART adherence for MSM and transgender women in this setting, with implications for Universal Testing and Treatment (UTT) policy. This policy is designed to develop regular HIV testing practices for key populations and then to provide immediate access to and uptake of ART after testing HIV-positive irrespective of CD4 count [57]. It has been suggested that UTT will not be effective on its own and combination interventions may be required including improved health care access [9]. Our study suggests that health care access is improving for MSM and transgender women, albeit only recently, but that HIV disclosure skills are required for optimal ART adherence within a desired relationship [3]. Thus, interventions that are designed to

improve both HIV disclosure and relationship skill-building may support UTT policy implementation for MSM and transgender women in South Africa. Engaging MSM and transgender women in HIV treatment will require a knowledgeable health care workforce that can engage in conversations with them about how treatment may be impacted by their relationships. The concept of Therapeutic Citizenship provides a basic framework through which to view the experiences of MSM and transgender women in HIV treatment, and how their struggles to develop a legally protected but socially unsanctioned relationship should ultimately inform implementation of national HIV strategies.

This study has a few limitations. It was conducted with a small sample of MSM and transgender women living in a rural setting. As such, the findings cannot be generalized to all MSM and transgender women in South Africa, as we might expect distinctions between rural and urban communities. Further, more research is needed to examine how Therapeutic Citizenship may explain ART adherence for MSM and transgender women, especially how sexuality and gender identity rights intersect the right to ART access in South Africa.

In conclusion, MSM and transgender women mistrusted ART in part because it did not cure HIV, and this may be an eventual predictor of ART adherence for them; relationship desire was the key factor in determining suboptimal adherence. HIV treatment disclosure and relationship skill-building interventions are needed to improve the effectiveness of UTT, especially for MSM and transgender women living in rural areas like Mpumalanga, South Africa.

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