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The Islamification of antiretroviral therapy: Reconciling HIV treatment and religion in northern Nigeria

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Abstract

Access and adherence to antiretroviral therapy (ART) are essential to HIV treatment success and epidemic control. This article is about how HIV-positive Muslims and providers balance ART guidelines with religious tenets and obligations. I conducted 17 months of multi-site ethnographic research between 2007 and 2010, including participant-observation in an urban HIV clinic in Kano, Nigeria and a support group for people living with HIV, as well as in-depth interviews with 30 HIV-positive men and 30 key informants with caregiving, clinical, or policy roles related to HIV/AIDS. Patients migrated from Islamic prophetic medicine to ART when it became more widely available in the mid-2000s through the U.S. PEPFAR program. At the same time, a conceptual shift occurred away from considering HIV immediately curable through spiritual and herbal-based Islamic prophetic medicine toward considering HIV as a chronic infection that requires adherence to daily pill regimens. Hope for a complete cure and encouragement from some Islamic prophetic healers resulted in some patients forgoing ART. Patients and providers adapted biomedical treatment guidelines to minimize disruption to religious practices also considered essential to Muslims' wellbeing, irrespective of HIV status. Providers discouraged patients on second-line ART from fasting because such patients had fewer treatment options and, often, poorer health. However, patients' medication adherence was affected by the desire to fulfill religious fasting obligations and to avoid questions from family and friends unaware of their HIV-positive status. This study is one of few ethnographic accounts of HIV treatment in a Muslim-majority society and contributes to understanding the significance of religion for HIV treatment in northern Nigeria. It has implications for public health programming and clinical approaches to HIV treatment in medically pluralistic Muslim societies.

Keywords

Nigeria; HIV/AIDS; Islam; antiretroviral therapy (ART); medication adherence; prophetic medicine; fasting; ethnography

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Introduction

Cultural influences on HIV treatment and epidemic control

Achieving and maintaining viral suppression with sustained antiretroviral therapy (ART) is critical to the long-term health and survival of HIV-positive people. ART is paramount to controlling the HIV/AIDS epidemic because infected individuals who achieve viral suppression are at exceedingly low risk of transmitting HIV to their sexual partners [Cohen et al. 2011], from mother-to-child [Chi et al. 2014], and otherwise. Expanding ART is therefore the foremost priority in the effort to control the global pandemic (Piot et al. 2015; UNAIDS 90-90-90; UNAIDS Global AIDS Update 2016).

Sub-Saharan Africa bears nearly 70% of the global burden of HIV/AIDS despite having only 15% of the world population (WHO 2017a). Following years of grassroots activism, a 2001 emergency exception to the World Trade Organization's Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs) has made possible the manufacture and sale of generic antiretroviral drugs in developing countries (WTO 2001). This spurred the establishment of major international treatment programs that have averted millions of deaths and new infections across sub-Saharan Africa alone, where treatment gains have been largest. Whereas only around 100,000 in the region were treated in 2003, by 2014 there had been over a 100-fold increase to 10.6 million people on ART. Despite these gains, ART access in the region was only 41% as of 2014. (WHO 2017b).

In addition to the macro level factors of sustained treatment access involving clinicians, infrastructure, and reliable supply chains, successful treatment depends upon the behaviors of infected individuals. International HIV program guidelines for achieving medication adherence typically emphasize patients' psychosocial readiness to adhere to daily regimens for the rest of their lives. However, as with treatment for many other conditions, significant proportions of HIV-positive people have difficulty with long-term adherence to ART; this contributes significantly to the continued high burden of HIV/AIDS morbidity and mortality and the perpetuation of the epidemic (Bangsberg et al. 2001; Ortego et al 2011). In the continued absence of a long-lasting injectable or implantable treatment or a vaccine, viral suppression continues to be contingent upon individual patient adherence to daily—often several times daily—oral ART.

HIV treatment success thus depends on macro-level infrastructures of care and on the individual behaviors of HIV-positive people. Less frequently the analytic focus of treatment studies but no less important are meso-level cultural factors, which include shared practices, symbols, and beliefs. Cultural factors are important to health outcomes and the course of epidemics because they shape collective perspectives on illness etiology, the natural history of disease, treatment efficacy, and the moral dimensions of illnesses and illness responses. From this perspective, taking medication is a socially-organized and strategic practice, situated in everyday experiences of illness and life (Conrad 1985). Cultural factors are particularly salient when illnesses are heavily imbued with moral meaning and perceived as a risk to the social order. HIV/AIDS, because it is primarily sexually transmitted and fatal when left untreated, continues to be highly stigmatized and imbued with moral significance (Treichler 1999). This has been particularly the case in communities where HIV

is strongly associated with sexual behaviors that are prohibited by religious doctrine and social norms (Smith 2014).

This article is about how a group of Muslim patients and providers in Kano, Nigeria navigated adapting ART to the context of their social-religious life. Specifically, it addresses how the beliefs that God has a cure for every disease he creates and that ultimately only God can cure are interpreted and lived with as people use ART to manage, but not cure, HIV. It further addresses how patients and providers endeavored to reconcile fasting obligations with ART. As such, the article centers on how the shared cultural beliefs and practices of a Muslim-majority community have shaped the implementation of a transnational treatment program, influenced patient adherence, and affected an epidemic.

Global treatment programs, local moral worlds, and the limits of biopower

Biopower, the “numerous and diverse techniques for achieving the subjugations of bodies and the control of populations” by modern nation-states (Foucault 1976: 140), has been a useful construct for social science analyses of HIV/AIDS, including but not limited to conceptualizing the management of HIV in individuals and populations with ART. Yet, the biopower deployed to control HIV in contemporary African populations has not emanated primarily from African states, which for the most part have remained weakened and subordinate in the global political economy. Instead, African states’ roles in HIV control have been largely reduced to “para-statal” functions (Geissler 2015): dependent upon resources from a patchwork of foreign governments, international organizations, and NGOs, and their implicit agreements with African governments to achieve ends typically associated with states (Nguyen 2010; Peterson 2012). This “discriminate biopower”, whereby population health is subject to the prerogatives of external organizations and foreign governments (Fullwiley 2004), has long characterized numerous public health campaigns in Africa; HIV treatment epitomizes this dynamic.

Most notable has been the U.S. President’s Emergency Plan for AIDS Relief (PEPFAR), which currently operates in 65 countries worldwide delivering treatment to 11.5 million people and is the most expensive bilateral program to address a single disease in history (PEPFAR 2016; PEPFAR 2017). Since its inception in 2004, PEPFAR has accounted for about 90% of funding for HIV treatment in Nigeria (U.S. Embassy & Consulate in Nigeria 2017). PEPFAR has increased ARV coverage dramatically to 820 sites across all 36 Nigerian states plus the Federal Capital Territory with an estimated 23% of HIV-positive Nigerian adults aged 15 or older on ART in 2014 (UNAIDS 2015). Thus, despite considerable treatment scale-up and hundreds of thousands of deaths averted since 2004, approximately 77% on HIV-positive Nigerian adults remain without access to ART.

Biomedical treatment guidelines, including those for ART, are intended to direct patient behavior irrespective of location or cultural background. In actuality, standardized treatment guidelines and the global health programs that undergird them—which are themselves based upon culture-bound assumptions about diseases and treatments—are encountered by people in varied societies, where diverse belief systems and social rules guide daily practices. When the premises and practices of biomedicine are perceived as conflicting with religious and other cultural precepts, adherence may be compromised, with consequences for health and

epidemic control. As such, the biopower exercised by transnational interventions to address HIV and other diseases depends upon the social and moral priorities established by communities, families, religious organizations and leaders (Dilger 2012; Renne 2008; van Dijk et al. 2014).

In some cases, religious ideologies—or at least certain people who assert authority based on interpretations of religious beliefs—have led to questions about the moral acceptability of ART (van Dijk et al. 2014). In recognition of this, recent ethnographic research on ART in sub-Saharan African contexts has emphasized how patients’ “local moral worlds” extend beyond and may inhibit treatment adherence (Mattes 2012), how patients’ understandings of their own ‘responsible behavior’ encompass social concerns that at times overshadow the narrower behavioral expectations of biomedical treatment guidelines (Beckmann 2013), and how the embodiment of normalcy is of paramount concern as people navigate life and treatment with a highly stigmatizing disease (Rhine 2016).

Africans, like people elsewhere, have looked to religious and spiritual approaches as a way of understanding and coping with the suffering and mortality caused by HIV/AIDS. Responding first to HIV/AIDS and then also to the massive scale-up of biomedical treatment, African religious organizations have confronted existential concerns such as divine healing that ostensibly secular global health programs generally do not consider, addressed the ethics of health resources including the provision of medicines, and have also initiated policies and programs to support ART (Dilger 2009; van Dijk 2014). At the same time that religious organizations have sought to alleviate concerns through doctrinal pronouncements and policies, adherents of particular faith traditions living with HIV face everyday challenges incorporating treatment into their lives while maintaining—in their own minds and in the perceptions of their religious communities—the integrity of their religious personhood.

HIV treatment in Muslim communities

Research on HIV in Islamic societies has focused on two main concerns. The first has been the effects of Muslim religious tenets and social practices on HIV transmission. HIV prevalence in predominantly Muslim societies is generally low, possibly due to a range of factors, including the universal circumcision of Muslim men, prohibitions against alcohol consumption, and restricted opportunities for socialization with the opposite sex (Gray 2004; Hasnain 2005; LaGarde et al. 2000). However, in some situations HIV transmission in Muslim communities might be facilitated by high rates of divorce and remarriage, concurrent sexual partnerships within polygynous marriages, and lack of public discourse about the risk of HIV sexual transmission associated with religiously prohibited practices, such as anal sex (Tocco 2013). Religious and cultural taboos against sex outside of marriage, sex work, and homosexuality have posed significant challenges to HIV prevention and treatment programs in Muslim-majority countries (Kamarulzaman 2013).

The second concern has been how religious tenets affect ART for HIV-positive Muslims. During the holy month of Ramadan, for instance, drinking and eating are limited to the hours after sunset and before sunrise. Although Muslims who are ill are exempted from these regulations, many HIV-infected patients are reluctant to give up fasting, and this may

have clinical implications (Güven 2004). Habib and colleagues (2009) argued that a four-hour discrepancy in dosing time (i.e., taking drugs at 5AM and 9PM during Ramadan rather than at regular 12-hour intervals) poses no risk of diminished drug efficacy for the patient, joining Yakasai and colleagues (2011) in arguing that ART must adapt to Islamic practices to be successful. Habib and colleagues (2010) found that HIV-positive Nigerians on the Hajj pilgrimage to Mecca in Saudi Arabia faced various challenges to ART and had poorer adherence than a comparable cohort of Muslims traveling domestically within Nigeria. Kisenyi and colleagues (2013) found a positive association between ART adherence and religiosity among Pentacostal Christians and Muslims in a clinic in Uganda. Becker (2009) found that Tanzanian Muslims' attitudes towards AIDS and ART were more influenced by political events than they were predetermined by rigid religious notions.

Methods

Research setting

The ethnographic study of HIV in the context of an Islamic society was based in urban Kano, the second most populous city in Nigeria and the largest city in the country's northern region. Kano is an ancient but rapidly expanding city in the ethno-linguistically Hausa-Fulani-dominant and Muslim-majority region of the Sahel. Nigeria has the second largest population of HIV-positive people in the world with approximately 3.5 million people infected out of a total population of 170 million; an estimated 9% of all HIV-positive people globally are Nigerian. HIV prevalence in Nigeria among adults aged 15 to 49 is approximately 3.1%, with considerable variation in prevalence across the country geographically and across different social-behavioral groups (UNAIDS 2015). In Kano State, which contains metropolitan Kano, HIV prevalence is approximately 1.3% (Federal Ministry of Health 2013: 355).

Participants and Data Sources

Following Institutional Review Board approval from the University of Michigan and the Ethics Committee of the local hospital that was a primary research site, I conducted 17 months of mixed method, multi-site research in metropolitan Kano. The fieldwork was assisted by an experienced local social science researcher during four field visits between 2007 and 2010, the majority of which took place in 2010. The main site of participant-observation was a PEPFAR-funded HIV clinic in metropolitan Kano. I was granted access to observe the daily operations of the clinic, including interactions among patients, providers, peer educators and volunteers. The majority of persons at the clinic were Muslim; a minority was Christian. I was also a patient at this clinic, which afforded a unique vantage on the activities of the clinic as an observing participant (Tocco 2013). I conducted participant observation at a monthly support group for HIV-positive people, where I was also a member. Whereas the support group was somewhat religiously mixed at the start of my fieldwork, for the majority of my fieldwork the group's members were almost entirely Muslims. I also conducted observations in several private Islamic health centers and home parlors where HIV-positive individuals and those suffering from other afflictions consult with healers who work in the traditions of Islamic prophetic medicine. Additionally, I participated in events

including a national AIDS conference, social events hosted by people living with HIV (e.g., marriage ceremonies), and listened to a weekly Kano radio broadcast about HIV.

I conducted semi-structured, in-depth interviews with a convenience sample of 30 HIV-positive Muslim men recruited by announcement at the HIV support group mentioned. They ranged in age from 24 to 63 with a mean age of 44 and were characterized by substantial educational, occupational, and economic diversity. The interviews covered personal disease histories, treatment decisions and beliefs, religious and social obligations, and experiences of and aspirations for marriage and family. The majority of the interviews were conducted in one meeting of between one and two hours; others were conducted over two meetings with a combined time of between two and three hours. In-depth interview participants received the equivalent of approximately US\$5 for participating.

I also conducted interviews with 30 key informants involved in HIV/AIDS, including biomedical practitioners, drug adherence officers and home-based care volunteers, Islamic prophetic healers, leaders of Muslim organizations, and government health officials. Most key informants were selected because they had a caregiving, clinical, or policy role related to HIV/AIDS in Kano or nationally; the Islamic healers were approached based upon their advertisements or word-of-mouth reputation for treating HIV. Most individuals were interviewed once for between one and two hours; some key informants were interviewed up to four times for a combined total of up to six hours, depending upon the breadth and depth of their knowledge. These key informants provided context on various social, religious, political-economic, and epidemiological aspects of the epidemic and the Muslim response to it in Nigeria. Most of the interviews were conducted in Hausa. Others were conducted in English, or a mixture of the two languages, based on the preference of the participant. Participant names were changed to preserve anonymity.

Being a man myself significantly determined my focus on HIV-positive Muslim men and masculinity in the larger ethnographic project from which this article draws. Religious and cultural norms prescribing avoidance between unrelated women and men curtailed my ability to casually socialize with most Muslim women, including in the clinic and support group that were primary sites of the ethnography. As a result, the perspectives of this article reflect knowledge of men's experiences more than those of women, limiting the generalizability of the findings. At the same time, masculine gender afforded me the opportunity to conduct participant-observation, interviews and surveys among HIV-positive men about personal topics including treatment, family decisions, and sexuality, that would have been effectively off-limits had I not been a man. See Rhine (2016) for an ethnographic account of the social challenges and treatment practices of HIV-positive women in Kano, many of whom were Muslim.

Data Collection and Analysis

My participant-observations were recorded as ethnographic field notes in the course of patient visits at the clinic, attendance of monthly support group of HIV-positive people, and in the course of interviews. All in-depth interviews were transcribed; a native Hausa speaker translated those conducted in Hausa into English and I crosschecked them. The field notes and interview transcripts were manually analyzed and grouped by thematic codes that

developed iteratively over the course of the 17 months of data collection. Examples of some of the thematic codes used in the present analysis include, ‘cure discourses and practices’, ‘combining ART and prophetic approaches’, ‘patient-provider communication’, ‘treatment while fasting’ and ‘fasting on second-line therapy’.

Results

Two concerns were most salient for HIV-positive Muslim patients’ engagement with ART. First, patients endeavored to reconcile their religiously grounded assumptions about the curability of disease with the biomedical perspective that HIV is a chronic condition requiring lifelong daily medication. Second, patients sought to balance therapy with the desire and expectation to fulfill obligations of communal devotional fasting.

Curable or chronic? Islamic prophetic and biomedical paradigms of HIV treatment

The height of Nigeria’s HIV/AIDS epidemic at the turn of the millennium coincided with a period of Islamic religious revival in the 12 northern states. The expansion of *shari’a* rendered Islamic holy texts the basis of the legal system, with far-reaching implications for daily life. One aspect of this revival was in the realm of healing. Prior to the arrival of PEPFAR in 2004, HIV-positive Muslims in northern Nigeria sought care primarily from individuals working in traditions of Islamic prophetic medicine. *Malamai*, religious scholar-practitioners, had long played an integral role in religious life, including healing, by using the Qur’an to manage spiritual and physical afflictions. With the heightened religiosity at the turn of the millennium, the healing practices of *malamai* working in prophetic traditions rapidly grew. (O’Brien 2001; Tocco 2014).

Malamai are legitimated by a religious worldview that is deeply engrained in Hausa Muslim society. They focus on the spiritual dimensions of illness, the power of prayer and Qur’anic recitation, and the natural cures proscribed in the Qur’an and the *hadith* (the collected literature on the pronouncements and actions of the Prophet Mohammed). The “amicable, intimate, elaborate and often ritualistic approach” of *malamai* starkly contrasts the impersonal, perfunctory services offered at many public sector health facilities in Nigeria (Abdalla 1997:30). For many, Islamic prophetic medicine is a culturally recognizable and more comfortable approach to healing.

Muslims in northern Nigeria regularly quote from the Qur’an and *hadith* to express and affirm guiding principles of life. In conversations pertaining to health, the most expressed proverb is: ‘For every disease that God has sent to humankind, He has also sent its remedy’. Attributed to the Prophet Mohammad in several often-quoted *hadith*, this proposition is foundational to Muslim ideas about illness and healing (al-Jawziyya 1998: 9–10). In everyday conversation the proverb is expressed with the more succinct Hausa phrase, ‘*Kowace cutar da maganinta*’ (‘Every disease has its cure’). In addition to being a frequent conversational utterance, the proverb is seen in the advertisements and signboards of *malamai* who work in the traditions of prophetic medicine and can be seen written on the back of some public buses (Tocco 2010).

The affirmation that Allah sends a cure with every disease was also common in discourses on HIV/AIDS. Most *malamai* professed to facilitate curing people of HIV—without necessarily claim to cure people of HIV *themselves*, since cures are the providence of Allah alone. The following statement about the curability of HIV by a *malam* who ran a large prophetic medicine center in Kano focused on *materia medica* (natural products mentioned in the Qur'an and *hadith* for having curative properties) was emblematic of the positions of several *malamai* interviewed:

In Islam, our belief is that there's no disease that doesn't have its medicine – absolutely. Allah sends the disease, and Allah does the curing. It's not people [who cure]. For Muslims, headaches, foot aches, stomachaches, typhoid, asthma, diabetes, Allah sent them all – and so too HIV/AIDS. [...] We don't agree that someone with a headache will be cured, someone with a foot problem will be cured, someone with a stomach problem will be cured, but someone with HIV can't be cured. We can't agree – because all cures are from Allah.

Malamai who used prophetic approaches to “cure” or otherwise treat HIV-positive people based the assertion on religious authority, scriptural mastery, the perfection of the Qur'an, and the deeply held, widespread conviction that God sent a cure for every disease. A *malam* who specialized in the practice of *rubutun sha* (repeatedly writing passages from the Qur'an and *hadith* renowned for their healing properties with a washable ink, which afflicted persons then wash off and either bathe with or drink the resulting liquid, literally imbibing the words of God) explained how he counseled HIV-positive people:

I tell them when they come, 'This one [antiretroviral therapy] is not a cure.' [...] The drugs they give them in hospital are not a cure. Everyone knows that. So I tell them just to have faith in what I am giving you, because I am giving you medicine from the holy Qur'an, and [with the] holy Qur'an it is inevitable you are going to be cured. Have that faith and forget about the drugs in the hospital. A lot of them have taken the advice I gave them and have avoided the modern medicine; a lot of them are cured. Those who have started [*rubutun sha*] early have been cured completely.

Global HIV/AIDS agencies and foreign donors including PEPFAR have often been keen to enlist faith-based organizations into their efforts. However, an implicit requirement of this involvement has been that ART takes precedence over faith-based or ‘natural’ healing approaches (Tocco 2014). At times, this has resulted in ideological and etiological conflict between biomedical and Islamic prophetic healing and deterred some HIV-positive Muslims from pursuing or sustaining ART. In addition to scriptural justifications, *malamai* also had financial incentives to persist in treating people afflicted by HIV: for them, the shift to ART resulted in lost profits.

ART has challenged religious bodies to develop their own policies on HIV/AIDS. The main national Islamic body, the Nigerian Supreme Council for Islamic Affairs, supported the biomedical approach in its first-ever *National Islamic Policy on HIV/AIDS* by expressly endorsing national ART treatment guidelines while making no mention of prophetic or naturopathic therapies as alternative or complementary (NSCIA 2009). As such, the *Policy* left unaddressed a dilemma that many HIV-positive Muslims faced: whether to exclusively pursue a newly available and seemingly efficacious treatment that nevertheless appeared to

contradict dominant religious ideologies and cultural practices surrounding illness and healing.

HIV is controllable to the extent that patients who adhere to daily ART are able to maintain good health in the absence of other diseases. As such, HIV became a chronic, manageable condition—but not one that can be cured at this time. Patients and clinical staff frequently lauded ART for its transformative health effects. However, no one expressed the sentiment that ART constituted a cure.

Among support group members and patients, there was much speculation, and even stated certainty, that a cure for HIV exists. “But there has to be medicine for HIV,” was a sentiment frequently expressed, often in the course of discussions about ART. By this, they meant a medicine that could completely cure HIV, because this, locally understood, is what medicines [*magunguna*] do. Underlying this belief in a cure was, in part, the frustration of being afflicted by a stigmatizing disease and the desire to be completely rid of it. Many patients, including a 42-year-old man, expressed the hope for a cure and attached this hope to religious faith:

Even now [having been on ART] I have hope that with time, if Allah wills, we will get a cure for [*maganin*] HIV because I believe without doubt in the words of the Prophet, saying ‘For every illness there is a cure’. So, I will have this belief until the day I die.

The transition from pursuing a faith-based cure to antiretroviral treatment was complicated by the fact that movements back and forth between the distinct paradigms of Islamic prophetic healing and biomedicine were in juxtaposition not just for HIV but for illness more generally. Clinic staff generally advised patients against pursuing prophetic healing for HIV—either out of concern for pharmacological interactions with ART, concern that patients would be encouraged by *malamai* to forgo ART, or both. Some patients, however, considered prophetic approaches as complementary or alternative to ART or continued to move between Islamic prophetic and biomedical approaches.

Even some HIV-positive people who publically promoted ART and the biomedical episteme of HIV to other Muslims living with the virus vacillated between treatment paradigms. For instance, a clinician recounted the experience of a middle-aged HIV-positive woman who was employed at the clinic as a peer educator and had a leadership role in a support group. As a peer educator her full-time job was to educate patients about HIV and the importance of ART adherence for those patients with a CD4 under 350, the clinical threshold for treatment initiation because of drug rationing. After a number of years on ART, the woman began to lose weight quickly and became very ill. Having once had a high CD4, she had dropped to below 200 (a clinical AIDS diagnosis) and had a high viral load. The clinician presumed that she had stopped taking ART. When he asked her about this, she began to weep and admitted that she had been going to see a *malam* who claimed he was curing her of HIV. In addition to giving her a prayer- and herbal-based remedy, he told her that she should stop taking ART, as it was unnecessary and betrayed a lack of faith. She complied.

For HIV-positive Muslim patients at the clinic, becoming adherent to ART-based care necessitated a shift in thinking about HIV that, for many, has been difficult to reconcile. The woman described above was paid to inform other HIV-positive people at the clinic about the importance of ART adherence and was a leader of an HIV support group that promoted a strictly biomedical approach to treatment. Nevertheless, her engrained faith in the power of God to cure all diseases, the convincingness of the *malam* from whom she sought divine healing, and the desire to be totally rid of HIV overrode her professional position. By explaining the serious health consequences of her decision to forgo ART, the clinician eventually persuaded her to begin taking ART again and her health rebounded.

Many HIV-positive patients entered the clinic having had limited exposure to biomedical perspectives on health and disease, particularly for HIV since treatment had only recently become available. One rhetorical strategy that clinical providers and staff employed to persuade patients to adhere to treatment was to frame ART as a manifestation of Allah's mercy. A clinician explained how he attempted to resolve the cognitive dissonance some patients expressed when challenged to adhere to ART.

I used to tell them [patients] that having treatment for HIV, which suppresses the virus and makes someone to live well and longer, is also a mercy of God, coming through Western scientists. Ok? We learn from what you [Western] people develop and transfer that mercy of God to our people. And you can't deny the impact of other interventions by Westerners in our health system. Would they [people critical of ART] then say that it is not the mercy of God?

In summary, as ART became the standard treatment for HIV in northern Nigeria over the last decade, HIV-positive people were confronted by the different etiological assumptions and therapeutic praxes of biomedicine as compared to the spiritual, scriptural, and herbal traditions of Islamic prophetic medicine. ART adherence entailed accepting, on some level, that HIV is a chronic condition that ART will not cure. Yet, this acceptance sat for many in uneasy contrast to the assumption that a cure exists for HIV, as for all diseases. HIV-positive Muslims in the clinic, many of whom praised the transformative effects of ART but had previously or simultaneously pursued prophetic healing, lived at the intersection of two distinct cultural-institutional understandings of HIV and its treatment.

Adherence and religious fasting

As HIV-positive Muslim patients at the clinic sought to balance their social and faith responsibilities with the need for efficacious treatment, one issue where harmonizing adherence to religious obligations and adherence to clinical treatment guidelines was most apparent was religious fasting (*azumi*). As one of the five pillars of Islam, abstaining from eating, drinking, smoking, and sexual behavior between sun-up and sundown during the holy month of Ramadan is an obligation that all Muslims who are able to do so must fulfil beginning at the age of puberty. People who are ill and traveling are exempt from *azumi*. However, because the spiritual rewards believed to accrue through fasting are considered to be great, ill and traveling individuals may choose to perform the days of fasting they've missed during Ramadan at a later time.

Azumi is primarily considered a personal matter, which each Muslim adult is responsible for upholding oneself. However, *azumi* is also a profoundly social custom and it is understood that the entire community has an interest in others upholding this tenet of the faith. Ramadan is a time of heightened solidarity with fellow Muslims. This solidarity is felt in the shared suffering experienced during the daily fast as people struggle to make it through the day's responsibilities and heat without food or water. It is also felt in the collective relief of sharing specially prepared meals each day after sunset, and in the intensity of performing the day's prayers together with other fasters.

For HIV-positive Muslims at the clinic, *azumi* could be fraught with indeterminacies and complications. Despite the allowances made for skipping or postponing the fast in the case of illness, many HIV-positive people do not feel ill, nor do they appear ill to others. Those who were HIV-positive and well often strong desired to participate in *azumi*. Since many HIV-positive people have no physically perceptible manifestations of illness, the failure to fast may invite questions and suspicions from those who do not know that the person is HIV-positive.

Consuming ART during *azumi* was further complicated by the fact that some ARVs should be taken with food, whereas others should be taken on an empty stomach. *Azumi* was generally encouraged by clinic staff, since many patients were perceived as healthy enough to do so. Drug adherence officers in the clinic encourage patients who were on twice-daily dosing regimens—normally taken at twelve hour intervals—to take their morning doses before 5am, just before the first prayer of the day (*salla asuba*). Then, depending on one's particular drug regimen, patients were encouraged to take the evening dose immediately upon breaking the fast if they were supposed to take their medications with food. Those patients taking an ART regimen that included the drug efavirenz were told to wait and take their second daily dose at 9pm, two hours after breaking the fast, because of the heightened side effects commonly experienced when taking efavirenz with food.

Both patients and clinicians endeavored to make ART compatible with *azumi* by adapting treatment regimens to adhere to the religious obligation. However, clinicians made a distinction between patients on first-line versus those on second-line therapies. First-line therapies are drug regimens with high efficacy and low side-effect profiles that, as their name implies, are the first choice for patients whose viral strain has no known resistance to these drugs. Clinicians and adherence officers sanctioned those on first-line drugs to perform *azumi* insofar as they were otherwise understood to be healthy.

Patients on second-line medications are those who have already "failed" first-line drugs—either because they have developed a resistance because of non-adherence or because they were infected with a viral strain that was not sensitive to first-line medications. Second-line patients were strongly discouraged from *azumi* because clinicians perceived the risks of failing second-line therapy as too great, given the relatively limited number of ART regimens available in Nigeria.

A 36-year-old man explained the perspective shared by a Muslim religious leader [*malamin adini*] who spoke to his HIV support group about ART and fasting:

A religious leader came [to the HIV support group] around the time of the fast to explain how to proceed with taking medications and the relationship between religion and HIV when you're supposed to take your medicine. Even when you hear the [first] prayer call [of the day], no problem, take your medicine. So even religiously it's allowed. Leave fasting, take your medicine before, then after the last daily prayer, you make up the dose. That's the relationship between HIV and religion as I know it.

Some patients perceived that second-line regimens were less potent than first-line regimens because clinicians and adherence officers instructed patients on second-line regimens to not fast. Furthermore, patients developed implicit understandings through clinical encounters and conversations with other patients that being on first-line ART regimens was indexical of being in better health than was being on second-line regimens. A 41-year-old man from the support group said in an interview:

With the ARVs that I take there is first line. [With first line,] after a certain period there will be a resistance in the blood, so you change to second line. So that first line, it won't pass 15 to 20 years [of efficacy]. But I don't think the second line is as potent as the first line because now the people on second line can't fast.

Patients and clinical staff sought pragmatic balance between the needs for religious adherence and therapeutic adherence. However, how they prioritized religious versus therapeutic obligations sometimes varied. Most patients strongly wished to participate in *azumi*. Therefore, convincing some patients on second-line drugs to forgo *azumi* posed a challenge to clinical staff. Patients often desired to fulfill *azumi* obligations despite clinicians' pleadings that they prioritize therapeutic adherence.

A middle-aged man on a second-line regimen came into the adherence office for his clinical visit during Ramadan and admitted when asked by an adherence officer, that he had been participating in *azumi*. "You must stop doing *azumi*," the adherence officer told him, sternly. "It won't work. These [second-line] drugs cost two thousand U.S. dollars a month. We don't have the salvage drugs [i.e. "third-line" therapy, for those who have "failed" two previous drug regimens] here [in Nigeria]. *Wallahi* [because of God], *Allah*, stop doing *azumi*. This second-line is the end; there is nothing else."

The reluctance on the part of some patients to adhere to second-line medications also led clinicians to adjust their clinical advice to those patients. In the event that a patient on second-line drugs insisted upon fasting, doctors and adherence officers might quietly tell the patient to take all four of their daily lopinavir/ritonavir pills (a common second-line combination therapy in Nigeria beginning in 2006) all at once with the evening meal, rather than taking two pills in the morning and two in the evening per standard dosing guidelines. Clinicians made this recommendation somewhat grudgingly because clinical guidelines are that lopinavir/ritonavir be taken at regular 12-hour intervals, with or without food.

Other religious practices were called upon to boost adherence. One way that Muslim patients and clinical staff encouraged adherence to ART was by relating dosing to prayer (*salla*). Along with fasting during Ramadan, performing the five daily prayers is among the five pillars of Islam. In Kano, as in other Muslim communities, the five daily prayers provide

each day with its overarching temporal structure. Clinicians, adherence counselors, support group leaders and patients employed the five daily prayers as reference markers for consuming ART. ART became, in a sense, an extension of *salla*. Adherence officers frequently told patients, "When you hear the call for Maghrib [the fourth prayer of the day], take your medicine." Using the five daily prayers as reminders of adherence was another illustration of how ART became acculturated into the daily ritual practices of Islamic life.

In summary, HIV-positive Muslims at the clinic overwhelmingly desired to participate in religious fasting. For patients on first-line therapies, providers and adherence officers recommended dosing adjustments that accommodated fasting without compromising adherence. For patients on second-line therapies, tensions between fasting and adhering to clinical guidelines were more pronounced. Whereas not fasting would likely invite unwanted questions from friends and family unaware of one's HIV status, non-adherence to ART could threaten treatment failure for those patients whose health was often most compromised and whose treatment options were more limited.

Discussion and Conclusion

Successful HIV treatment depends upon sustained medication access and long-term daily adherence by patients. As biomedical treatment became increasingly accessible in Nigeria in the mid-2000s through the aegis of the U.S. PEPFAR program, HIV-positive Muslims who could access ART came to overwhelmingly favor it due to its efficacy. At the same time, the arrival of ART subverted the dominance of *malamai*, who endeavored to cure HIV/AIDS with scripturally based prophetic medicine practices better harmonized with prevailing societal understandings about the nature of illnesses and healing.

ART became an object of moral valuation as the community endeavored to reconcile biomedical treatment with religious tenets and obligations. Treatment guidelines, clinical advice, and adherence were produced through social interactions in which multiple and sometimes-competing priorities were emphasized. This process unfolded in myriad exchanges between patients and providers, among patients in support groups, via mass media such as radio broadcasts, and through the development of policies within religious organizations. In short, the trajectory from ART access to adherence entailed a process of cultural legitimation that occurred outside the realm of PEPFAR policy.

Even as Islamic prophetic approaches to HIV ceded to the new treatment logic and infrastructural dominance of ART, adherence continued to be affected by religious convictions and practices. Prophetic medicine continued to attract some patients due to its cultural familiarity and promise of a cure, which negatively affected ART adherence when patients followed prophetic practitioners' instructions to forgo ART. The availability of ART has had a demonstrative impact on individuals' health, providing strong heuristic motivation for other HIV-positive people to comply with ART. However, patients' decisions about treatment were based not only on perceived efficacy, but also on concordance with religious precepts, practices, and adaptability into their daily social lives. In effect, there remained no consensus about HIV treatment.

The importance of religion on HIV treatment in Africa has been studied predominantly in Christian communities, although certain similarities with those studies shed light on the role of religion on HIV treatment for Muslims in northern Nigeria. The perspective that HIV/AIDS is divine punishment for sexual immorality and the consequences of this on stigma and the spread of the epidemic have been significant among Muslim communities as they have among Christian communities (Smith 2014). The rise of scriptural literalism, the implementation of shari'a, and the expansion of prophetic medicine in northern Nigeria parallel the proliferation of Pentecostalism and faith healing during the HIV era in several African Christian societies (Sadgrove 2009). Moreover, the role Islamic organizations have taken in supporting ART-based care while deemphasizing or disavowing faith healing mirrors positions taken by a number of Christian organizations (Nguyen 2009).

Nonetheless, considerations specific to Islam also affected Muslim patients' treatment adherence in Kano. Ramadan fasting is integral to the religious practice upon which ART was integrated—incompletely—into this Muslim community. Clinicians and adherence officers sought to balance treatment with religious considerations by adjusting dosing guidelines to accommodate the spiritual obligations, benefits, and cultural significance of fasting. Yet, such accommodations were curtailed by the limited range of ART regimens available in Nigeria and by clinicians' insistence that ART take precedence over fasting. Scripturally founded and culturally dominant perspectives on illnesses and healing—specifically, the beliefs that all illnesses were sent by Allah with their cures and that the Qur'an and hadith could be directly employed as instruments of curing—were also significant to ART adherence and thus to patient outcomes and epidemic trajectories.

Transnational public health programs generally function as top-down, center-to-periphery operations and tend to un-reflexively privilege the perspectives of policymakers who often have limited knowledge of the fluid non-biomedical systems integral to recipient communities. The transnational biomedical HIV/AIDS response has been prototypical of how the cultural worldviews of people living with HIV and their communities, including shared religious beliefs and practices, have been largely overlooked in policy planning and enactment. Yet, the success of public health initiatives depends in part upon understanding the socio-cultural worldviews of those affected by interventions in specific places. Rather than being epiphenomenal to the implementation of global health programs, attention to these worldviews constitutes a 'new realism [that] takes into account what the people whose health we worry about are themselves doing and thinking' (Last 1999: 70).

As such, global public health initiatives introduced by foreign governments and international organizations may prove more effective at reaching their aims when they recognize the centrality of religion to social life in certain communities and anticipate how religiously informed understandings of health and illness are likely to affect uptake and adherence. In Nigeria, the biopower acting upon HIV-positive people and shaping the course of the epidemic was substantively altered by the biomedical treatment regime funded and instigated by the U.S. PEPFAR. Yet, the scale-up of ART occurred not only by means of the PEPFAR program but also through the pronouncements of various religious actors and organizations and 'on the ground' through ongoing ideological debates about the efficacy and religious appropriateness of different forms of therapy. Furthermore, the Nigerian

experience evinces how Islamic institutions aligned themselves with national and international donor policies to support ART by asserting their spiritual and interpretive authority in ways consistent with biomedical clinical guidelines. In communities where religion is central to social organization and behavior, the force of religion on the biopower typically associated with nation-states is significant and should not be overlooked by social scientists, epidemiologists, or policy makers.

As an ethnographic account focused on one region (and within that region, one state and city), the findings of this study are necessarily limited and cannot be taken to explain the adoption of ART in all Muslim-majority societies in sub-Saharan Africa, let alone worldwide. Nonetheless, this article develops insights on illness experiences—specifically, HIV health seeking under structural duress and amidst a myriad of disease and treatment modalities—in a specific cultural setting. Additional systematic studies of the relationships between Islamic beliefs, discourses and practices and the uptake of and adherence to HIV treatment in northern Nigeria are warranted and could provide further insights into this issue of considerable public health importance. Future research should consider more fully how religious discourses and practices affect, either as facilitators or hindrances, treatment adherence.

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Research Highlights

- Ethnographic account of HIV treatment among Muslims in Kano, Nigeria.
- Antiretrovirals necessitated a shift from understanding HIV as curable to chronic.
- HIV+ people and providers balance biomedical guidelines with religious obligations.
- Addresses how religious fasting affects HIV treatment adherence.