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Traditional, complementary and alternative medical cures for HIV: rationale and implications for HIV cure research

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Abstract

Traditional, complementary and alternative medicine have been used by some people living with HIV in an attempt to cure HIV. This article reviews the main factors influencing their decision to choose traditional, complementary and alternative medicine to cure HIV and discusses implications for HIV cure research. Those who decide to pursue traditional, complementary and alternative medical cures may be influenced by the health system, cultural and social dynamics, and their own individual beliefs and preferences. These same factors may impact participation in HIV cure research. People who search for traditional, complementary and alternative medical cures may face special challenges as they are recruited, consented, and retained within HIV cure research studies. To address these potential challenges, we have suggested solutions focusing on culturally tailored communication and education, formative social science research, and community partnerships with key stakeholders. The social conditions that have promoted traditional, complementary and alternative medical cures will likely impact how people living with HIV participate and experience HIV remission trials. Despite the potential challenges, it will be

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crucial to involve those who have previously sought out traditional cures for HIV in HIV cure research.

Keywords

HIV/AIDS; traditional medicine; complementary and alternative medicine; cure; HIV cure research

Introduction

In 2007, the Gambian national television station showed nine people living with HIV (PLHIV) who were being blessed with President Jammeh's healing massage. The President claimed to have developed a HIV cure using seven herbs in the Koran. The therapy required patients to stop using antiretroviral therapy (ART). Every night, Gambians watched the broadcast as patients testified to the treatment's efficacy (State House Website, 2015). In the following months, at least one hundred patients were given the President's cure. Soon patients were pronounced cured and sent home without medical follow-up. Despite this spectacle and the trust it inspired, at least thirteen 'cured' patients died shortly after being discharged and others suffered (Cassidy & Leach, 2009).

President Jammeh's herbal cure is not the only example of traditional, complementary and alternative medicine (TCAM) being used in an attempt to cure HIV. PLHIV continue to search for and believe in TCAM cures despite warnings from medical professionals. This commentary will review the main factors influencing the decision to choose TCAM cures and discuss the implications for HIV cure research.

In regards to terminology, we use the World Health Organization's definition of traditional medicine, which refers to healing practices that are indigenous to a culture (World Health Organization, 2016). We use the National Institute of Health's definition of complementary/alternative medicine, which are non-mainstream practices used together with or in place of mainstream Western medicine (NCCIH, 2008). Furthermore, we define 'biomedicine' as the medical theory and practice originating from Western societies and focusing on human biology and pathophysiology (Hahn & Kleinman, 1983). We recognize these definitions may not accurately represent how healing practices are integrated in some settings. We also use the word 'cure' when talking about the research field and 'remission' to refer to current trials, while recognizing both terms have different implications (Tucker, Volberding, Margolis, Rennie, & Barré-Sinoussi, 2014).

Rationale of choosing traditional, complementary and alternative medical HIV cures

PLHIV who have used TCAM to try to cure HIV live in many countries (Table) (Amon, 2008; Hardon et al., 2008). At least 19 TCAM cures have been documented in the literature, with six in South Africa (Amon, 2008; Amusa, 2013; Bohannon, 2014; Chomat et al., 2009; Hardon et al., 2008; Obadare & Okeke, 2011). However, this is likely an underestimation because there are unofficial and unreported cure claims. In 2006, South African government agencies reported that street vendors and traditional healers were selling unregistered

products that claimed to cure HIV (“Authorities rush to control illegal medicines boom,” 2006). One survey in Chennai, India found that among 429 PLHIV, 64% heard of a traditional cure for HIV and of those, 78% tried the cure (Akileswaran et al., 2004).

Several studies have examined the factors contributing to the decision to choose TCAM cures (Amon, 2008; Amusa, 2013; Cassidy & Leach, 2009; Hardon et al., 2008; Obadare & Okeke, 2011) (Table). These factors parallel the circumstances that drive PLHIV to use traditional medicine to manage their HIV. It is important, however, to note that out of those who use traditional medicine to manage their HIV, a minority believe that TCAM therapies can cure HIV (Gyasi, Tagoe-Darko, & Mensah, 2013). We have delineated a few of the main factors that influence PLHIV to seek out TCAM to cure their HIV, as opposed to manage their HIV. These factors include the health care system, cultural and social dynamics, and individual beliefs and preferences (Amon, 2008; Amusa, 2013; Cassidy & Leach, 2009; Hardon et al., 2008; Obadare & Okeke, 2011).

First, it may be difficult to obtain ART through the health care system. Some PLHIV live in areas at the periphery of global health systems where ART is available (Amon, 2008; Obadare & Okeke, 2011). Even if ART is available, it may be hard to access ART due to high cost, long wait times, and inconvenient travel (Chomat et al., 2009; Dalal & Dawad, 2009; Littlewood & Venable, 2011). In comparison, traditional medicine can be cheaper and more accessible in some communities (Chomat et al., 2009; Langlois-Klassen, Kipp, Jhangri, & Rubaale, 2007; Littlewood & Venable, 2011). As a result, some PLHIV depend on traditional medicine for their health needs (Amusa, 2013; Littlewood & Venable, 2011). Combined with a lack of regulation over traditional healers and pharmaceutical marketing, these conditions provide fertile ground for TCAM cures (Amusa, 2013; Obadare & Okeke, 2011).

Second, local cultural and social dynamics significantly impact one’s belief in TCAM cures. HIV remains heavily stigmatized (Earnshaw & Kalichman, 2013; Mahajan et al., 2008) and such stigma can drive PLHIV towards the promise of cure (Amon, 2008; Chomat et al., 2009). In addition, in many cultures, traditional medicine has a long history, often overlapping with religious and spiritual beliefs (Amon, 2008; Chomat et al., 2009; Hardon et al., 2008; Obadare & Okeke, 2011). Furthermore, the philosophy of a traditional medicine system may influence beliefs on whether HIV is curable. Early on, those who used traditional Chinese medicine believed it could cure HIV (Hare, 1993). Because of traditional Chinese medicine’s emphasis on the harmony between life forces and body systems, HIV infection was seen as a temporary imbalance (Rich et al., 2015). Finally, trust plays a key role. A lack of trust in government competence can motivate PLHIV to seek unconventional cures (Obadare & Okeke, 2011). However, trust in local government leaders can lead to PLHIV believing government authorities’ cure claims (Cassidy & Leach, 2009).

Third, many individual-level factors, such as personal beliefs and preferences, can influence the decision in choosing TCAM cures over ART. For example, in the United States where biomedicine is a significant part of the conventional medical system, some PLHIV choose TCAM cures over ART (Foote-Ardah, 2003). For others, TCAM cures can provide much needed hope (Hardon et al., 2008; Obadare & Okeke, 2011). Combined with the fear that

biomedicine has greater side effects, TCAM cures can become an attractive option for some individuals (Chomat et al., 2009).

Implications for HIV cure research

As HIV remission research expands to low and middle-income countries, it is important to consider how those who have turned to TCAM cures will be positioned within this evolving landscape. Through understanding their behavior and the context of TCAM cures within the political, sociocultural, religious, and economic environment, we can anticipate how the factors that drove them to search for a TCAM cure might impact their response to and possible participation within biomedical HIV cure research. In particular, we anticipate potential challenges with recruitment, informed consent, and retention within clinical trials.

Recruitment of individuals who used TCAM cures may present a challenge for cure researchers. Remission trials may attract those motivated to search for an HIV cure, raising the question of whether they understand the small chance of individual benefit from participation. Others who experienced worsening symptoms from previous TCAM cures (Chomat et al., 2009; Syed et al., 2016), might be hesitant to join remission trials. Individuals with a suspicion of biomedicine or with a strong belief in TCAM may also be reluctant to participate in HIV cure research (O'Brien & Broom, 2014; Verhoef, Mulkins, Carlson, Hilsden, & Kania, 2007).

To overcome these barriers in recruitment, researchers may use the local traditional framework and culturally familiar concepts in recruitment and education (Corneli et al., 2006; Cox, 2000; Hoyler, Martinez, Mehta, Nisonoff, & Boyd, 2016; Nations & de Souza, 1996) while being mindful of maintaining an evidence-based framework of biomedicine. Researchers can collaborate with locally respected leaders and traditional healers to develop an appropriate message and to use interactive techniques, such as story-telling and drawings (Corneli et al., 2006; Ndebele, Wassenaar, Munalula, & Masiye, 2012). These partnerships do not have to be limited to the development of messages. Similar to the work-style in some intercultural health clinics (Mignone, Bartlett, O'Neil, & Orchard, 2007), traditional practitioners can become part of the research team and be strong partners throughout the research process (Audet, Hamilton, Hughart, & Salato, 2015). For recruitment, traditional practitioners can refer PLHIV who predominantly use traditional medicine and may not regularly access biomedical clinics (Kayombo et al., 2007; Mignone et al., 2007). Increased awareness and training over the plurality of healing techniques can promote familiarity and trust between traditional and biomedical practitioners, thereby facilitating these referrals (Gyasi et al., 2017). Such collaborations that are based in mutual respect and exchange of knowledge could help HIV remission trials become more culturally accessible for those who believe in TCAM.

However, such partnerships have their limitations. Identifying well qualified traditional practitioners can be difficult in settings with little regulation and standardized training (Gyasi et al., 2017). The need to maintain scientific integrity can also lead to exclusion criteria preventing the participation of PLHIV who use TCAM. Some exclusion criteria in current HIV remission trials include prior use of non-established experimental therapy or current use of TCAM therapies ("Analytical Treatment Interruption in HIV Positive Patients

(ISALA),” 2016; “CC-11050 in Human Immunodeficiency Virus-1-Infected Adults With Suppressed Plasma Viremia on Antiretroviral Therapy (APHRODITE),” 2016; “Efavirenz and Lamivudine/Zidovudine for Treatment-Naive HIV Infected People in Wenxi County, Shanxi Province, China,” 2016; “Safety, Tolerability, and Efficacy of Asunaprevir and Daclatasvir in Subjects Coinfected With HIV-HCV,” 2016). These exclusion criteria are related to known toxicities of TCAM therapies and possible interactions with intervention drugs (Babb et al., 2007; Mills, Montori, Perri, Phillips, & Koren, 2005; Sparber, Ford, & Kvochak, 2004). Further research into TCAM mechanisms and potential drug-drug interactions may alleviate some of these fears (van den Bout-van den Beukel, Koopmans, van der Ven, De Smet, & Burger, 2006).

If PLHIV who use TCAM are successfully recruited into clinical trials, researchers will have to be mindful of clearly distinguishing the objectives of research. In particular, researchers will have to emphasize that research is an investigative intervention with unknown risks and benefits. The consent process can be helpful in this regard. Since those who have sought TCAM cures in the past may represent a population with reduced access to ART and other biomedical health care services (Amon, 2008; Amusa, 2013), their lack of exposure to biomedicine and clinical research may increase their risk of misunderstanding the purpose of clinical research trials (Dein & Bhui, 2005; Malik, 2011). Their beliefs about illness and healing may also conflict with the biomedical model and result in misunderstandings (Dawson & Kass, 2005; Dein & Bhui, 2005; Kagawa-Singer, 2000; Marshall, 2006).

To mitigate the potential risk of misunderstanding a research study’s objectives (originally termed ‘therapeutic misconception’), culturally tailored education over basic research concepts and terminology can be used before and during the consent process (Rodrigues, Antony, Krishnamurthy, Shet, & De Costa, 2013; Staunton, 2015; Tekola et al., 2009). Specific terminology over the nature of HIV cure research should be used to appropriately frame expectations, such as ‘experiments’ and ‘remission’ (Dubé, Henderson, & Margolis, 2014; Tucker et al., 2014). As some cultural settings may not have research-specific terminology, researchers can consider using everyday experiences to explain research concepts (Corneli et al., 2006; Ndebele et al., 2012). An assessment, such as a quiz or open-ended questions, can be used to further ensure participants’ comprehension and provide an opportunity to address any misunderstandings (Lidz & Appelbaum, 2002; Lo & Grady, 2013; Miller et al., 2007; Staunton, 2015).

During the consent process, it will also be crucial to identify the participants’ motivations for joining the trial because their motivations shape how they negotiate risks, benefits, and expectations in their decision-making process (Hornig & Grady, 2003; Peay & Henderson, 2015). This is significant for phase I studies in general, as these trials offer no direct medical benefit for the participant (Dubé et al., 2014; Lo & Grady, 2013). But this is also important because the trial outcome may have different meanings for participants which the researcher may not realize. Differences in conceptual thinking can be heightened when researchers and participants have differing belief systems, values, and cultural backgrounds (Dawson & Kass, 2005; Molyneux, Peshu, & Marsh, 2004). For example, participants’ beliefs in the etiology of HIV may influence their decisions to join remission trials. In some communities, HIV infection is linked with spiritual and religious beliefs on sin and purity (O’Brien &

Broom, 2014; Zou et al., 2009). These moral undercurrents impact HIV-related behaviors, including the ways they choose to cure themselves (O'Brien & Broom, 2014). Having an open discussion or conducting formative qualitative interviews with potential participants can reveal factors influencing their decision-making process and the potential relevance of the clinical trial in their lives (Peay & Henderson, 2015).

One final issue is retention during remission trials. Minimizing loss to follow-up will be crucial in early-phase trials, especially for trials involving ART cessation to determine an intervention's efficacy and safety (Dubé et al., 2014; Lo & Grady, 2013). As researchers recruit participants for these trials, it will be important to account for potential facilitators and barriers to retention. Some participants may be prone to retention, such as those who have persisted with TCAM cure regimens despite side effects (Chomat et al., 2009). But for others, structural factors may have a greater impact on retention. In previous HIV prevention trials, HIV-related stigma and mistrust of biomedical clinical research resulted in false rumours and disapproval from the community (Haire, 2011; Magazi et al., 2014; Syvertsen et al., 2014). Social support has been identified as a key factor influencing the retention of participants (Magazi et al., 2014; Toledo, McLellan-Lemal, Henderson, & Kebaabetswe, 2015). Community engagement before the trial starts and education sessions with participants' partners and family members (provided participants have informed them about the trial) can promote dissemination of accurate trial information and foster support (Ramjee et al., 2010; Toledo et al., 2015). In addition, inconveniences of health care system may lead to lengthy waiting times or difficulty accessing the clinic for research visits (Gappoo et al., 2009; Littlewood & Vanable, 2011; Toledo et al., 2015). To improve the clinical experience, previous researchers have changed the management of the clinic based on feedback (Gappoo et al., 2009; Toledo et al., 2015).

These suggestions for improving retention are based on previous HIV prevention trials. Given every environment will have its own structural factors, we recommend long-term and high quality social science research for site-specific retention strategies. Social science research should be prioritized at sites where researchers have not previously conducted qualitative fieldwork or where the community has had little exposure to clinical trials. Time constraints and limited resources can make it difficult to conduct qualitative research from the beginning to the end of the trial. But long-term research can allow for continuous feedback (Moatti, N'Doye, Hammer, Hale, & Kazatchkine, 2003; Ramjee et al., 2010). Furthermore, we recognize that social science research is a necessary but not a sufficient condition for trial success, since some trials in the past with adjunctive social science research have not been successful (Mack et al., 2013; Van Damme et al., 2012). To maximize the likelihood of trial success, it will be key to ensure that high quality and methodologically sound social science research becomes integrated with the trial (Lewin, Glenton, & Oxman, 2009).

Several limitations to our argument are worth mentioning. Certain TCAM cures in the late 1990s and early 2000s attracted attention and popularity due to the lack of available ART (Hardon et al., 2008). The landscape has since changed with ART access expanding across low and middle-income countries (Moatti et al., 2003; WHO-UNAIDS, 2005). With increased access to ART, PLHIV may have greater contact with and a stronger belief in

biomedicine and its related scientific concepts. This in turn may promote their informed and voluntary participation in trials and minimize misunderstandings. However, many communities still have limited ART access and turn to traditional medicine for HIV management (Littlewood & Vanable, 2011; Mills et al., 2006). In addition, some PLHIV have access to ART but discontinue treatment in lieu of claimed TCAM cures (Cassidy & Leach, 2009; Thielman et al., 2014). Thus, researchers should still be mindful of other factors that drive PLHIV to TCAM cures, the particular vulnerabilities that promote misunderstandings over the meaning of an early phase cure trial, and the impact on attrition when misunderstandings persist.

Another limitation is that our opinion piece is based on the available literature on TCAM cures for HIV. The literature has a heavy emphasis on cures from Nigeria, Gambia, and India. There have been reports of TCAM cures in other countries (Amon, 2008; Obadare & Okeke, 2011) but less in-depth qualitative research. As a result, the potential issues presented may not affect all PLHIV who have previously sought TCAM cures. We have also presented overarching themes but there will inevitably be variations and exceptions. As a result, we emphasize the continued practice of meaningful community engagement and collaborative social science research.

Conclusion

To ensure that PLHIV of different backgrounds and beliefs are included in HIV cure research, HIV remissions trials should attempt to include PLHIV who have turned to TCAM for a cure. An initial barrier will be ensuring their participation. Some PLHIV may be reluctant to join because of their beliefs in TCAM's efficacy or due to experiences with unsuccessful TCAM cures. The need to maintain scientific integrity may also result in exclusion criteria that adversely impact their participation. If they are successfully recruited, the consent process will be crucial to ensure their understanding of research's experimental nature and to elucidate their motivations for participating. However, despite all of this, larger structural factors may influence their retention. Many live in communities with inefficient health care services, HIV-related stigma, or suspicion towards biomedical research.

We have suggested potential solutions that emphasize culturally tailored communication and education, formative social science research, and community partnerships with key stakeholders. These solutions can be integrated and applied to address more than one issue. But at the same time, none of these solutions are a panacea, and further research and programs are needed.

President Jammeh's nightly healing of HIV patients has stopped. But the social and cultural conditions that promoted his cure persist around the world. These conditions may influence how PLHIV, particularly those who have sought out TCAM cures, participate in and experience HIV remission trials. Despite the potential challenges, their participation in HIV remission trials can help to identify barriers and facilitators in the eventual implementation of a HIV cure.

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Table.

Potential reasons individuals use TCAM to attempt to cure HIV.

Category	Explanation	Location
Health System	Limited access to ART (Amon, 2008; Amusa, 2013; Cassidy & Leach, 2009; Obadare & Okeke, 2011)	Nigeria, Zambia
	Traditional medicine is easier to access and cheaper (Chomat et al., 2009; Langlois-Klassen et al., 2007)	India, Uganda
	Limited knowledge about HIV and its origin (Amusa, 2013; Cassidy & Leach, 2009; Obadare & Okeke, 2011)	Nigeria
	Inconvenience associated with public health services (Littlewood & Venable, 2011)	India
	Lack of regulation over traditional healers (Littlewood & Venable, 2011; Obadare & Okeke, 2011)	India, Nigeria, Kenya, South Africa
Cultural and Social Dynamics	HIV-related stigma (Littlewood & Venable, 2011)	India
	Distrust in competency of the government (Obadare & Okeke, 2011)	Nigeria
	Anti-Western sentiments and distrust of biomedicine (Amusa, 2013; Obadare & Okeke, 2011)	Nigeria, South Africa
	Admiration of community leaders (Cassidy & Leach, 2009)	Gambia
	Longer history of traditional medicine (Amusa, 2013; Chomat et al., 2009)	India, Nigeria
	Philosophy of traditional medicine system (Hare, 1993)	China
	Religious belief (Cassidy & Leach, 2009; Chomat et al., 2009; Obadare & Okeke, 2011; Roura et al., 2010; Thielman et al., 2014)	Gambia, India, Nigeria, Tanzania
	Cultural identity provide sense of belonging and security (Obadare & Okeke, 2011)	Nigeria
Individual Beliefs and Preferences	Habit of using TCAM to treat all kinds of diseases (Amusa, 2013)	Nigeria
	Believe biomedicine has greater side effects (Chomat et al., 2009)	India
	Provides motivation when dealing with incurable disease (Chomat et al., 2009; Hardon et al., 2008)	India, Indonesia
	Treatment fatigue (Thielman et al., 2014)	Tanzania