Is It AIDS? Or Is It Kaliondeonde? Preliminary Assessment of an Indigenous AIDS-like Illness in Zambia

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Research

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Abstract

Background: Kaliondeonde is an AIDS-like immunosuppressive illness of unknown etiology common in Zambia and Malawi. It has similar, but not identical, symptoms to HIV/AIDS, and appears to have been in south central Africa longer. It is often viewed by both the public and academics as being the same as HIV/AIDS.

Method: Research was conducted in Zambia among seven kaliondeonde patients to determine the perceptions of the sickness, and the symptoms of the disease, in comparison with HIV/AIDS. A subset of four of the patients were examined by both a traditional healer and a physician, and tested for HIV.

Results: Two of the four kaliondeonde patients were found to be HIV negative, suggesting the possibility that kaliondeonde is different from HIV/AIDS.

Conclusions: If future research confirms that many kaliondeonde patients are in fact HIV-negative, it will become vitally urgent to clarify the distinctiveness of the two illnesses and alter perceptions and knowledge of kaliondeonde prevention, epidemiology, etiology, and clinical practices.

Introduction

During 1993, the first author (* - blinded copy) visited the local primary AIDS service organization (Family Health Trust) in Lusaka, Zambia and met with the Executive Director (Ms. Elizabeth Mataka). She discussed the difficulty of convincing the local community of the seriousness of the AIDS epidemic, when so many simply thought it was the same disease as kaliondeonde. “How can I provide proper HIV education when so many believe that AIDS is nothing more than kaliondeonde?” she lamented. We learned that some people in central and eastern Zambia believe that kaliondeonde is simply another local word for AIDS. However, others believe that the AIDS-like illness is distinct from AIDS and not at all related.

“Muti” is a white powder with magical properties that is used for medicinal purposes. According to our informants, the traditional folk (emic) view in central and eastern Zambia of kaliondeonde is that it is caused by failing to put on muti after having an abortion or a miscarriage (Feldman et al. 19932). Men can also become infected with the disease by having sex with a woman who fails to use muti following an abortion or miscarriage. Like HIV/AIDS, it results in a variety of immunosuppressive symptoms. But unlike AIDS, it has a short incubation period, usually five months from infection to death. It is treatable with traditional medicines provided by an indigenous healer, especially if within three months after infection (Feldman et al. 1993, Feldman et al. 19973, Feldman and Miller 19984).

Unlike AIDS, which was first reported in Zambia in 1984 (World Health Organization 20055), kaliondeonde likely existed for decades before then. It is believed to be indigenous to Zambia and Malawi. Indeed, we interviewed an elderly informant during 1993, in a remote village outside Chipata in eastern Zambia near the Malawi border. The informant said that the disease was common when he was a small boy during the 1920’s (Feldman et al. 1993). And yet, many Zambians confuse AIDS with kaliondeonde.

We carried out two focus groups of male and female secondary school students in Lusaka during 1993. The two groups, each with about ten students, were very similar in age (mostly 17 and 18 years old), and sex. Both groups were familiar with AIDS and kaliondeonde. We asked both groups whether the two diseases are the same or different. Group 1 reached a unanimous conclusion that AIDS and kaliondeonde were exactly the same. On the other hand, Group 2 reached a unanimous conclusion that the two diseases were entirely different. Clearly, at the time of that study, there was considerable confusion about the two diseases (Feldman et al. 1993).
In a survey conducted during 1997 among 204 high school students in Lusaka, we asked if *kaliondeonde* and AIDS are the same thing. Exactly half of the students n = 102 (50.0 percent) were not sure, or had a mixed opinion. The other half were nearly evenly split between those who disagreed, or strongly disagreed (n = 49, 24.0 percent), and those who agreed or strongly agreed (n = 53, 26.0 percent) (Feldman et al. 2008).

**HIV Risk in Africa**

The ten countries with the highest rates of HIV in the world are all on the African continent (CIA 2015). For example, the top three countries, all in southern Africa, are Swaziland (with 27 percent of the adult population, 15–49, HIV positive), Lesotho (23 percent), and Botswana (22 percent). Some of the key factors shown to exacerbate HIV rates in these countries include the lack of male circumcision (Bailey et al. 2007; O’Farell et al. 2006), concurrent relationships with a non-married partner (Halperin and Epstein 2004), untreated sexually transmitted infections, inadequate male and female condom social marketing, stigma, growing homophobia, virgin curing, ritual sexual cleansing, the low status of women, possibly the nature of the HIV-1 subtype itself (Soto-Ramírez, et al. 1996), and likely the practice of dry sex.

Virgin curing is the belief that if an HIV positive person has intercourse with a virgin, often a child, the HIV positive individual will serorevert to being HIV negative (Andersson et al. 2004; Ashforth 2002; Jewkes 2004; Leclerc-Madlala 2003). Sexual cleansing occurs when a widow is expected to marry her late husband's brother. Often a person who is a commercial sexual cleanser will be paid to have sex with the widow prior to this remarriage, in order to release the spirit of her late husband (Audet et al. 2010; Ayikukwei et al. 2008; Dworkin and Erhardt 2007; Kawango et al. 2010; Nwoye 2004; Perry et al. 2014). Dry sex is the practice by women of using various herbal or other substances to reduce vaginal fluids prior to intercourse, in order to increase sexual sensation for the male (Beksinska et al. 1999; Brown et al. 1993; Civic and Wilson 1996; Sandala et al. 1995; Schwandt et al. 2006).

**Understanding Kaliondeonde**

Relatively little academic research has been done directly on *kaliondeonde*. While the *Times of Zambia* and other local Zambian newspapers and magazines have discussed *kaliondeonde* at various times for many years, the first mentions of *kaliondeonde* in the academic literature are Feldman et al. 1993, Feldman et al. 1997, and Feldman and Miller 1998. We found only nine additional studies based on fieldwork in Africa, dated between 1999 and 2019, which discussed *kaliondeonde* (see below). Other publications that mention *kaliondeonde* referred back to these previous studies.

Research methods used included interviews, focus groups, and participant observation with informants in Malawi and Zambia. Two of these nine additional studies do not explicitly refer to this illness as "AIDS." Banda (2008) identified *kaliondeonde* as an illness which a man contracts through intercourse with a woman who has had an abortion. The illness then causes him to become “thinner and thinner” until he dies (2008:112). Banda also refers to this as an “AIDS-like disease (emphasis ours; 2008:xiii).

Three additional studies (Green 1999; International Planned Parenthood Federation 2014, Hunleth 2019) stipulate that *kaliondeonde* was probably one of several local names for AIDS, rather than being a separate medical condition. Green states that "*kaliondeonde* in Zambia...has...wasting symptoms...[It] is believed to result from death pollution, is considered fatal, and was translated by Zambian informants as AIDS” (1999:147). Green agrees with this assessment by his informants, because "*kaliondeonde* was described in a way that accurately reflects the profile of AIDS as it manifests in Africa” (1999:160). He also adds that it is not thought to be treatable with biomedicine. In another example, the IPPF reports that a peer educator in Malawi told them, "We thought HIV/AIDS was just one of the [Chewa] STIs [sexually transmitted infections] popularly identified as *kaliondeonde* [italics added]. We treated it like other STIs such as
In her study on Zambian children's caring labor within the home, Jean Hunleth used “Kaliwondewonde” as a local word for “HIV” (2019:182).

The remaining four studies (Houston and Hovorka 2007; Muula 2005, 2008; Uys et al. 2005) assume that kaliondeonde is definitely the same exact thing as AIDS. Uys and colleagues found that a common euphemism for AIDS in Malawi is kaliondeone or oonda, which both refer to “slim people” (2005:15). Muula states that “[AIDS] has been called kaliwondewonde (wasting or slim disease). This [is] due to the marked weight loss that many AIDS patients experience...” (2005:854). He again refers to kaliwondewonde as “slim disease” in a later publication (2008:187).

Based on focus groups in Malawi, Houston and Hovorka found that “[traditional] healers...spoke of HIV infection or AIDS as a disease [i.e.: kaliwondewonde] with a long history in [their country]” (2007:210). These traditional healers believed that kaliwondewonde had recently become lethal for two reasons: “Modern” contraceptives were identified as weakening women, by interfering with their natural menstrual cycles. Second, new and “improved varieties of vegetables and many hybrids” were viewed as less nutritious than their traditional forms, and were thought to cause malnutrition, which decreased one’s ability to resist infections (2007:210).

To summarize then, a review of the academic literature demonstrates that comparatively few studies have directly investigated kaliondeonde. Of the nine studies conducted through fieldwork, one identified the condition as a result of “death pollution” from an abortion; while also associating it with AIDS (Banda 2008). A second study states “some [traditional] healers identify AIDS with the symptoms of ‘kalyondeonde,’ which is thought to be curable” (1996:320). Here, it is treated as a purely emic condition. Six other studies make the assumption that kaliondeonde is probably or definitely the same thing as AIDS. Except for the preliminary study conducted by Feldman (1993), none of these previously cited authors seem to have considered the possibility that kaliondeonde might be a biomedical condition, which is different from AIDS. Except for one other study which identifies kaliondeonde as a synonym for “wasting,” they all assume it either definitely is AIDS, or that it probably is AIDS. No testing was done among the additional nine studies to learn whether or not patients identified as having kaliondeonde were HIV positive. As Ramin notes, “it is exceedingly rare for medical doctors and anthropologists to sit down and exchange ideas, even about an issue as important as the global HIV/AIDS epidemic” (2007:136). We argue that there is a clear need for medical doctors and cultural anthropologists to design a new research study together, to determine whether kaliondeonde is the same as HIV/AIDS, an altogether different biomedical condition, or an emic sickness. If kaliondeonde is indeed a separate biomedical condition, it is necessary to find the etiology and an appropriate biomedical treatment.

There are, however, a few published descriptions of sicknesses from the folk or emic perspective which share some of the same traits as kaliondeonde. For example, kahungo is believed by the Tonga of southern Zambia to be caused by pollution associated with miscarriage. A woman who miscarries, but does not apply traditional medicine, is thought to develop a cough and sores. She can transmit these to men through sex. A person who steps over the grave of a miscarried fetus can also contract kahungo. However, it is believed to be self-limiting; a woman can transfer it to a man, but it cannot be spread further by him. This is in direct contrast to HIV, which is transmitted to further partners by intercourse without a condom (Mogensen 1995:37). Additionally, Kornfeld and Namate (1997:38) describe two similar AIDS-like illnesses (called tsempho and kanyera) in Malawi (Feldman 2008).

Methodology

In 1998, we returned to Zambia to examine to what extent AIDS and kaliondeonde are the same disease or a different disease. While the symptoms of the two diseases were nearly identical, the time line was different — with kaliondeonde preceding HIV/AIDS in Zambia by at least several decades. Though hunting and skinning of chimpanzees and gorillas may have resulted in the emergence of HIV-1 among humans in southeast Cameroon as early as the turn of the twentieth
century, and slowly spread outward from there, it appears unlikely that it would have made its way thousands of miles down to Zambia within the projected time line.

We planned to recruit about 20 *kaliondeonde* patients, interview them about their medical history and their sexual behavior, and test them for HIV. We enlisted the assistance of a prominent traditional healer in Lusaka ("Dr. Benji") who specialized in diagnosing and treating *kaliondeonde* patients. At the time, there was a false rumor that had spread throughout Lusaka during our study that some traditional healers were taking blood from patients and using it for malevolent witchcraft against the patients. The existence of rumors linking biomedical blood draws with witchcraft has been previously noted in Africa, and especially in Zambia. Kigori et al. point out that "[rumors] as to the purpose and outcome of research [are] a common feature of medical research in developing countries" (2010:4). They advocate for a more continuous process of informed consent, in which research participants are offered reassuring information about the purpose and methods of biomedical research, perhaps with the intervention of trusted community members (2010:6). While Feldman et al. now agree with this suggestion, it was not available in 1998, when we conducted this study.

As a result of the rumors of witches using blood for malevolent magic, it was not possible to recruit the intended number of patients into our study. The traditional healer did select seven of his patients to be interviewed for our study, who gave us written informed consent to conduct it. Four of the patients were medically examined by the second author of this paper (*blinded copy*) for symptoms relating to immunosuppressive disease, and were tested for HIV using ELISA and Western blot confirmation, and for syphilis serology.

We prepared an interview schedule which included the following: questions about sex, their current symptoms of illness, when their symptoms first began, the perceived cause of their illness, whether they feel that they have *kaliondeonde* or AIDS, if not – what do they have, their belief that AIDS and *kaliondeonde* are identical or different diseases, who do they believe infected them, when did this occur, whether they believe they were infected through sexual relations, what kinds of sexual activities have they engaged in, whether they have had an abortion or miscarriage (if female), have they had sex with a woman who had an abortion or miscarriage (if male), or whether ritual cleansing occurred after the abortion or miscarriage. Additional topics included specific sex practices within the previous four weeks, same-sex sexual behavior, medications taken, visits to other traditional healers or health professionals, ethnic group ("tribe"), age, occupation, residence, and income status.

A written consent form was read to all participants, and signed consent was requested and obtained. IRB approval was received by both the University of Miami School of Medicine, and the University of Zambia School of Medicine. The traditional healer recruited seven patients suspected of having *kaliondeonde* who were interviewed by our staff, diagnosed by the traditional healer, and treated herbally by him. Four of the seven were also examined by our team physician, tested for HIV and syphilis through the lab at the University Teaching Hospital of the University of Zambia School of Medicine. Our research assistants conducted the interviews with the seven patients prior to being seen by the traditional healer.

The traditional healer was dressed in a red robe and hat with a large white cross across the front. He was accompanied by a male assistant and several male relatives who were observers. Our two female research assistants vacated the house, since they believed that a demon would possess them if they remained in the house while the traditional healer went into a trance. The male research assistant stayed in the house to assist with the study, since the demon is believed not to affect males.

The traditional healer ("Dr. Benji" – named after the most dominant of the 31 spirits that can take hold of him while in an altered state of consciousness) then placed himself into a deep trance. He placed one hand on the head of each of the patients and the other hand on the New Testament Bible, while keeping his eyes shut. He said several prayers and recited Biblical passages with his eyes still closed. This lasted for several minutes. He then opened his eyes and enlisted the
Principal Investigator (* - blinded copy) to read selected passages from the Bible, as well. The traditional healer determined during the trance which of the four patients had kaliondeonde, and which instead had AIDS.

Following the diagnoses from the traditional healer, the physician (* - blinded copy,) conducted a brief physical exam of four of the patients to determine if they were symptomatic for HIV/AIDS. These four patients were also tested for HIV and syphilis by the physician. Results were available in a few days.

**Results**

The traditional healer determined that all four of the patients he examined had kaliondeonde, and did not have AIDS. He then provided an herbal treatment for all four patients to treat their kaliondeonde. Previously, the week before, the traditional healer had examined the three other patients we had interviewed, and also determined that they had kaliondeonde, and not AIDS.

The physician determined through physical examination that all four patients had immunosuppressive symptoms suggestive of HIV/AIDS. Since all four of the kaliondeonde patients had AIDS-like symptoms, it was expected that they would have all tested positive for HIV. However, the serology demonstrated that only two were HIV positive. The other two were HIV negative. This result was highly unexpected. While it is possible that both had biological false negative results, it is unlikely that this would have occurred, since they were confirmed with Western blot testing. If kaliondeonde was caused by HIV, and was equivalent to AIDS, it would have been expected that all four of these patients should have been HIV positive. The fact that two were not, opens the possibility that kaliondeonde is empirically a different disease than HIV/AIDS, with a different – and perhaps unknown – etiology. The serology, incidentally, also showed that none of the four were reactive (positive) for syphilis.

The interviews with all seven kaliondeonde patients revealed both similarities and differences among them (see Table 1). It needs to be emphasized that our sample size is extremely small, and not intended to be representative of the population. Three of the patients of the traditional healer were male, and four were female. Three believed that their illness was caused by too many sexual partners. Other reasons given were stress from job loss, thinking too much about their deceased child, and having been bewitched. When asked if they have kaliondeonde, most said “not sure/maybe/don’t know;” one said “no,” and one said “yes.” When asked if they have AIDS, most said “maybe/not sure/don’t know,” one said “no,” and no one said “yes.” Clearly, the patients were generally not sure whether they had kaliondeonde and/or AIDS.

The most prevalent symptoms of the patients mentioned (by at least three or more of the patients; see Table 1) were unexplained weight loss, fever, fatigue, severe coughing, nausea, vomiting, chest pain, and nightsweats. Additional symptoms mentioned by two patients were vision problems, swollen lymph glands, diarrhea, tingling in hands or feet, shingles, skin blotches, and stomach rumbling.

We asked the patients if they thought AIDS and kaliondeonde are the same or different. Five thought the two diseases were the same, one thought they could be the same, and one did not know. We also asked the patients if they felt that they had AIDS. Six said maybe; one said no. We then asked who may have infected the patient if they are HIV positive or have kalioondeonde? Two said their husband, one said a former girlfriend, one said her child’s father, one said his first wife, and two did not know.

We asked (in early 1998) when they believe they became infected with either AIDS or kaliondeonde. Three said it was in 1997, one said it was in 1996, one said during the early 1990s, one said it was during the 1980s, and one did not know. We then asked if they believe they became infected through sexual intercourse. Five said yes, and one was not sure. One related an interesting story about how she became pregnant, then had an abortion, and became ill afterwards. During this
time, she used biomedical medication (specifically, Flagyl), but failed to use muti. So it is not clear if she became infected with her current disease because she had sex that caused her to have an unwanted pregnancy ending in an abortion, or whether she became infected because she failed to use the muti.

Patients were asked what sexual activities they engaged in that may have caused their infection. Four said they engaged only in vaginal sex, while three did not answer. We asked the women if they had an abortion or miscarriage, and the men if they were aware of having had sex with a women who had an abortion or miscarriage. One had two abortions, another had one abortion, and two had a miscarriage previously. Two volunteered that they did not use muti, although suggested that this occurred at the hospital.

The age range (see Table 1) is 27 to 44, with a mean of 32.0. While in West Africa, the term "ethnic group" was widely accepted, Zambia continued to use the term "tribe" to describe cultural identity. At the time of the study, there were 73 different "tribes" in Zambia. Two of the patients were Bemba, two were Namwanga, two were NSenga, and one was Lala.

**Discussion**

Regardless of the small sample size, we should have expected that all four of the patients who had AIDS-like symptoms would have been HIV positive. But only two were. In our view, this strongly suggests that AIDS and *kaliondeonde* are empirically two different diseases with two different etiologies. We have known, since 1984, that HIV causes AIDS; but we still do not know what causes *kaliondeonde*. Clearly, this needs further investigation. The existing literature of this disease presumes that *kaliondeonde* is only a local word for AIDS. But we established evidence through our interview with an elderly man in eastern Zambia, as discussed previously, that *kaliondeonde* was – as he told us – definitely present and common during the 1920's in Zambia. This was long before HIV/AIDS could have entered the country. Certainly, more research is needed to verify this.

To summarize, *kaliondeonde*, spelled in various ways, has been published in the local Zambian media, such as *The Times of Zambia*, for several decades. However, in academia it was first mentioned in a paper presented at the American Anthropological Association in 1993 (Feldman, et al. 1993). It first appeared in a journal, *Social Science and Medicine*, in 1997 (Feldman, et al. 1997). Research on the disease has occurred since then, but – as previously indicated – it centered around emic conceptions of the disease with the general presumption that it was etically just a local word for AIDS (Green 1999, Houston and Hovorka 2007, Hunleth 2019, IPPF 2014, Muula 2005, 2008, Uys et al. 2005).

During 1992-93, we were conducting an unrelated study on HIV prevention among teenagers in Lusaka, Zambia, and consequently had access to groups of male and female teenagers. We conducted two focus groups in 1993 asking if AIDS and *kaliondeonde* were the same disease, or a different disease. The first group reached a unanimous consensus that AIDS and *kaliondeonde* were identical – two words meaning the same thing. The second group, conducted a day later, reached a unanimous consensus that AIDS and *kaliondeonde* are indeed different diseases, likely unrelated to each other.

If, in fact, our preliminary evidence is correct, and the two illnesses are not the same disease, it would then be imperative to learn what is the cause of *kaliondeonde*. There is no reason to believe that just because the two illnesses share similar symptoms that they are necessarily the same disease. Indeed, they appear to be two separate diseases producing similar, though not identical, symptoms due to their immunosuppressive qualities. Clearly, additional microbiological research is urgently needed to ascertain the cause of *kaliondeonde*.

In our survey in 1997 of 204 Zambian high school students, referred to earlier, there was considerable confusion about the relationship, if any, of AIDS and *kaliondeonde*. Half of the students did not know if they were the same disease, while the other half were nearly even split between those who thought they the same disease and those who thought they were
different diseases. Clarifying the biomedical etiology of *kaliondeonde* would permit more accurate HIV prevention, diagnosis, and treatment programs in Zambia.

Notes:

A. “Emic” refers to the way members of a specific society organize facts into a coherent framework in accordance with their own worldview. In contrast, “etic” refers to a neutral, outside perspective (McElroy and Townsend 2015:44).

B. “*Kaliondeonde*” has three additional variant spellings: *kaliondeone* (Uys et al. 2005), *kaliwondewonde* (Houston and Hovorka 2007; Muula 2005, 2008) and *kalyondeonde* (Cohen and Trussell 1996).

C. “Death pollution” refers to “one’s blood...[becoming] ‘bad’ or ‘dirty’ or ‘weak’...through association with death or other polluting influences...” (Green 1999:142)

D. Within anthropology, “disease” means biomedical condition, while “sickness” refers to how a specific society defines a perceived medical problem (McElroy and Townsend 2015:35).

Declarations

Disclosure Statement:

None of the authors derived any financial interest or benefit from the direct applications of this research.

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Table
Table 1
Key Data from *Kaliondeonde* Patient Interviews (n=7)

|                        | Patient 1                    | Patient 2                     | Patient 3                      | Patient 4                      | Patient 5                      | Patient 6                      | Patient 7                     |
|------------------------|------------------------------|------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| **Cause of your illness?** | Stress from losing job       | Don't know                    | Many sexual partners           | Thinking of dead child         | Many sexual partners           | Many sexual partners           | Bewitched with evil spirits   |
| **Have kaliondeonde?**  | Maybe                        | Don't know                    | No                             | Not sure                       | Yes                            | Not sure; not yet HIV-tested  | Maybe                         |
| **Symptoms**           | Night sweats, weight loss,   | Weight loss, fever, fatigue, | Blotches, night sweats, fatique,| Pain, possible tuberculosis,  | Herpes, rectal bleeding, constipation, fever, diarrhea, night sweats, weight loss, fever, vomiting, loss of appetite | Weight loss, stomach rumbling, night sweats, blotsches, vision problems, pain, tingling | Cough, stomach rumbling, headache, fatigue, night sweats, weight loss, nausea, vomiting, pain, tingling |
|                        | fever, fatigue, nausea,     | vomiting, vision problems,   | swollen lymph nodes, pain,     | night sweats, weight loss,     | night sweats, weight loss,     | night sweats, weight loss,     |                                                                              |
|                        | vomiting, vision problems,  | pain, blood discharge from   | diarrhea                        | fever, vomiting, loss of       | fatigue, severe coughing,      | fatigue, severe coughing,      |                                                                              |
|                        | fever, nausea, vomiting,    | ears, white spumton, internal|                                                                              | appetite                       | nausea, vomiting, pain, shingles|                                                                              |                                                                              |
|                        | vision problems, pain,      | vaginal swelling, itching,   |                                                                              |                                                                              |                                                                              |                                                                              |
|                        | blood discharge from ears,  | thrush                        |                                                                              |                                                                              |                                                                              |                                                                              |
| **Kaliondeonde and AIDS: the same?** | Same                        | Same                          | Don't know                      | Maybe same                     | Same                          | Same                          | Same                          |
| **Have AIDS?**         | Maybe                        | Maybe                         | No                             | Maybe                          | Maybe                          | Maybe                          | Maybe                         |
| **Abortion/miscarriage recently** | Miscarriage in 1977; no muti | Two abortions; no muti        | N/A                            | Miscarriage 2 years ago        | N/A                            | N/A                            | One abortion                 |
| **Intercouse with woman who had abortion/miscarriage** | N/A                          | N/A                           | No                             | N/A                            | Missing data                   | Not sure                       | N/A                            |
| **Ritually cleanse self** | No                           | No                            | N/A                            | Yes                            | N/A                            | N/A                            | No                             |
| **Sex**                | Female                       | Female                        | Male                           | Female                         | Male                           | Male                           | Female                        |
| **Age**                | 44                           | 29                            | 31                             | 36                             | 29                             | 28                             | 27                             |
| **Tribe**              | Bemba                        | Namwanga                      | Lala                           | Namwanga                       | Bemba                          | NSenga                         | NSenga                        |