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Implications of Diffusion of Innovations Theory for a Culturally Sensitive Multi-sectoral Approach to HIV/AIDS Prevention

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Abstract

The present research uses a collective case study analysis to compare the effectiveness of HIV/AIDS public policy and culturally sensitive communication campaigns in Uganda, Kenya and Tanzania. The first author conducted in-depth interviews with public policy officials to obtain unique insights into policy decisions in each country. Using the theory of diffusion of innovations to guide our analysis, three major concepts emerged as contributing to an effective campaign: Coordination of the dissemination of information with the social system, the time necessary for preventive messages to lead to the adoption of new practices, and the cultural compatibility and sensitivity of those messages. Unlike studies that rely on secondary research, this study contributes the perspective of policy makers to our understanding of public policy, the role of cultural sensitivity in health communication campaigns, and the organizational networks required for an effective multi-sectoral approach.

Keywords

Culturally sensitive health communication, Public policy, Diffusion of innovation

Introduction

Although only 6.2% of the world's population lives in Eastern and Southern Africa, over 50% of the people living with HIV/AIDS worldwide in 2016 were in Eastern and Southern Africa [1]. According to the same report about 19 million people were living with HIV/AIDS in Eastern and Southern Africa. The overwhelming burden of the HIV/AIDS epidemic on this geographical region is threatening to reverse all the economic, social, political and cultural developments that have been achieved since the independence of many African countries over the past 40 years. Since there is still no cure or vaccine for HIV/AIDS, preventive programs remain the best way to combat the disease [2-6].

The current study examines relevant public policies and health communication campaigns, specifically focusing on the question of how information about HIV/AIDS prevention has been effective in reducing prevalence in Uganda. Our analysis of interviews with high-level public policy officials in Uganda, Kenya, and Tanzania suggests that successful public policy requires openness, time, the participation of multiple constituencies and cultural compatibility of the prevention efforts and messages. A comparison of the experiences of health communication campaigns across the three countries from 1986 when the Uganda government established the National AIDS Control Program through 2005 illustrates how these components create an effective multi-sectoral approach, with implications for other nations confronting the struggle to combat HIV/AIDS prevalence. The comparison of three countries in East Africa makes a significant contribution to our understanding of the role that public policy and the coordination of social systems, time and cultural compatibility play in responding to global health epidemics.

Literature Review

Three distinct areas provide a foundation for this work. We rely on previous studies of HIV/AIDS public policy and public information campaigns and related

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work on health communication campaigns for definitions and criteria relevant to the campaigns under study. Diffusion of Innovations (DoI) supplies the theoretical framework for our analysis.

Public policy and public information campaigns

Scholars of public policy have defined public policy and public policy instruments differently, but the salient points can be summarized as follows.

- Public policy refers to actions taken by governments or public agencies on behalf of (or for the good of) the public [7-10].
- Well known figures, political elites, and administrative authorities can easily influence health public policy [11,12].
- Public policy instruments must be acceptable to those in power and those directly affected by the instrument, must be visible and understood by the public [13], and determine the institutions involved in public programs, their roles and the relationship of these institutions with each other [14].

The current research uses these concepts to describe the HIV/AIDS public policies and public policy instruments of Uganda, Kenya and Tanzania and the relationship between public policy and health communication campaigns.

Health communication campaigns

Ralston, Anderson and Colson, Muir and Rogers [15-17] all suggest that public policies influence organizations and their health communication campaigns, and Justice [18] suggests that poor policies lead to ineffective health campaigns. For instance, the Uganda government created an open public policy along with the multi-sectoral approach which resulted in collaboration among government agencies, the private sector, religious organizations and cultural groups to respond to the HIV/AIDS epidemic as early as 1992 [19,20]. It has been argued that this collaboration enabled the organizations running HIV/AIDS campaigns to conduct more research and to understand the cultural misconceptions about HIV/AIDS of the audience which in turn led to the effectiveness of these campaigns [4,21,22]. On the other hand, Anderson and Kiwanuka-Tondo [23] have suggested that lack of openness and existing cultural beliefs led to stigma and misconceptions about HIV/AIDS in Botswana which in turn have led to less effective campaign messages.

There is also an abundant literature on communication campaigns showing that while some campaigns have succeeded, many have failed [24-29]. The dismal effectiveness of health communication campaigns in general has prompted scholars to argue for a different approach to the study of these campaigns. Two of the most common suggestions are as follows.

- Investigate the organizational factors that influence health communication campaigns [4,30-32].
- Develop a theoretical framework that analyzes communication campaigns as results of their political, social, economic, cultural and natural environments [33,34].

While some scholars have analyzed the influence of public policy on the implementation of HIV/AIDS communication campaigns, [10,35,36] there has been insufficient study of the factors that affect the success of such campaigns. One goal of the current research is to use Diffusion of Innovations theory to closely examine the approach taken in Uganda, compare it to Kenya and Tanzania, and suggest aspects of Uganda's program that have and can continue to provide a model for other countries.

Diffusion of Innovations Theory (DoI)

The present research uses DoI [37,38] as a framework for analyzing the adoption of HIV/AIDS public policy and the subsequent strategies and preventive programs implemented to combat the epidemic in Uganda. Public health scholars have acknowledged the strong contribution of Diffusion of Innovations theory to campaign research, documenting over 5,000 published studies in this area as of 2004 [39]. Looking at the data through the lens of DoI brings the information into focus, allowing us to identify critical components of the campaigns that contribute to success. "Diffusion is the process through which (1) An innovation is communicated; (2) Through certain channels; (3) Over time; (4) Among the members of a social system" [40]. The innovation described in this study is a desired behavior or practice that is new to the majority of members in this social system; namely, the practice of safe sexual health behaviors.

Any communication campaign involves the use of specific communication channels, such as traditional media (radio, television, and newspapers), social media, or interpersonal message dissemination. Because changing individual behaviors is more likely to come from interaction with peers or opinion leaders than scientific information, mass media channels are more important when the goal is to increase public awareness, while interpersonal channels are necessary when behavior change is desired [40].

In DoI, time refers to how quickly leaders respond to a need, the time it takes for new ideas to spread throughout the social system, and the rate of adoption of the innovation. Because the first cases of HIV/AIDS

were documented in the early 1980's and these countries continue to struggle with HIV/AIDS prevention today, this is an example of a long-term health communication campaign, and it will be important to examine how time affects success. The timeliness of leaders' and organizational actions taken to promote the innovation play a critical role in the rate of diffusion.

DoI assumes that organizations are interrelated subsystems that continually interact with the environment within which they exist [41-43]. Rogers defines the social system as a "set of interrelated units that are engaged in joint problem solving to accomplish a common goal" [33]. Dearing [44] describes the success of smoking cessation programs in California in the 1970s as an example of system interdependence. Several forces simultaneously at play, including federal efforts, mass media campaigns, health promotion organizations and social pressure created "mutually reinforcing messages" that contributed to widespread behavior change (p.512). The relevant social system for our study context includes the government and relevant organizations created to address the HIV/AIDS epidemic, other organizations involved in the crisis throughout each country (such as religious institutions), and the citizens affected by, or in danger of contracting, HIV/AIDS. The relationship between diffusion and the social system calls attention to the effect of cultural norms on diffusion and the role of opinion leaders in connecting the sub-units, as well as the types of innovation-decisions and their consequences.

Rogers [33] has further described five characteristics that affect the rate of adoption of innovations: relative advantage, compatibility, complexity, trialability and observability.

Relative advantage is the perception that the benefits of adopting the innovation outweigh the costs. Diffusion research has found that the perception of relative advantage is the most important factor in increasing the speed of adoption. Preventive innovations, however, are new ideas that require action at one point in time in order to avoid unwanted consequences at some future time. The rewards to the individual from adopting a preventive innovation are often delayed in time, are relatively intangible, and the unwanted consequence may not occur anyway [40]. This makes relative advantage more difficult to illustrate for preventive innovations.

Evaluation studies of the DARE program, designed to discourage school-age children from drug use later in life, for example, have shown that exposure to the program had limited impact on children as compared to those who had not been exposed to DARE [45]. Rogers [40] uses this as an example of the challenge of encouraging adoption of preventive innovations. In the case of HIV/AIDS prevention, the advantage of adopting safe sexual practices is not contracting HIV/AIDS. The effectiveness of the campaign therefore depends on how successfully messages persuade the target population of the risk and dangers of contracting HIV/AIDS.

Compatibility is the "degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters" [46]. When an innovation conflicts with cultural values, beliefs, or norms, it impedes the adoption process. The issue of culture cannot be over emphasized. Several scholars have argued that most western heath communication campaign designers have not understood cultures in Africa, which leads to failure [47]. On the other hand, a United States Agency for International Development effort to conduct HIV prevention education in rural Haiti used their local knowledge to enhance campaign results. Knowing that village voodoo practitioners were perceived as highly credible and trusted advice providers, they recruited these practitioners to participate in meetings, and the attendance from villagers exceeded campaign objectives by 124% [44].

Complexity is the "degree to which an innovation is perceived as difficult to understand and use" [46]. If a new practice is cumbersome or if system members don't see it as relevant, the idea may be perceived as impractical [48]. The more complicated the innovation, the slower the rate of adoption.

Trialability is the degree to which an innovation may be experimented with on a limited basis. Greater trialability increases the diffusion process because it reduces uncertainty and creates the opportunity to practice the desired behavior in a safe space.

Observability is the ability to see the innovation in use and observe the positive results of adoption of the innovation. A review of diffusion studies over 40 years confirms that relative advantage, compatibility and complexity are more consistently found to be important attributes in the rate of adoption [44]. Innovations that are more complex, requiring greater risk, cost, or training, for example, would seem to benefit from the ability to try out the innovation on a limited basis and see the objective results for others. For example, a study of the adoption of wearable technologies (i.e., smart watches) among 454 college students found that students did not adopt due to the high cost, lack of knowledge and uncertainty of benefits of the wearable technology. Those who adopted the technology cited the ability to use it on a trial basis, cultural compatibility and observing others using it as factors in their adoption [49]. Given that adopting safe sexual health behaviors such as condom use and limited

sexual partners is low in innovation complexity, we suspect that the attributes of advantage and compatibility are more likely to be relevant to our study.

Research Questions

The DoI framework suggests key areas where the HIV/AIDS public policy decisions and communication campaigns can be compared. To conduct a historical analysis of the HIV/AIDS health campaigns in each country, three central research questions guided this study: (RQ 1) How was the public policy on HIV/AIDS evolved in Uganda, Kenya and Tanzania? (RQ 2) What strategies, activities, preventive programs and organizations have been put in place or been used to combat the spread of the disease in these three countries? (RQ 3) What gaps, weaknesses and challenges remain in the strategies, activities, preventive programs and organizations in combating the spread of the disease in these countries? The results of this study can be used to evaluate current HIV/AIDS communication campaigns and demonstrate how DoI can inform the implementation of HIV/AIDS programs in these and other countries.

Method

We use a collective case study [50] to highlight similarities and differences in the evolution of public policy, implementation of health prevention strategies, and socio-cultural contexts of Uganda, Kenya, and Tanzania. By comparing these three cases, we aim to provide an in-depth understanding of the phenomenon of HIV/AIDS public policy and communication campaigns in East Africa. The case study data come from several sources: Individual interviews with key informants in each country conducted by the first author, archival research of documents from each country's Ministry of Health and published statistics on the HIV/AIDS epidemic in Africa.

Individual interviews

Personal interviews were conducted by the first author with four key informants in Uganda, six in Kenya, and four in Tanzania. These individuals were selected for interviews because of their expertise on the HIV/AIDS programs in their respective countries. The informants included senior government officials (e.g., Commissioner for National Disease Control in a Ministry of Health) and directors of HIV/AIDS related non-governmental organizations (e.g., Managing Director of the Women Fighting AIDS in Kenya). The interviews in Uganda took place between July 23rd and July 31st 2003; in Kenya between July 20th and July 28th 2004; and in Tanzania between July 20th and July 29th 2005.

The first author developed an interview guide with ten questions for each of the informants and conducted all interviews in person. Although there was some variation in the questions based on the role of the informant and the specific situation in each country, the following questions were asked in all interviews:

- How did the HIV/AIDS issue climb onto the public agenda?
- Who played the most important role in formulating the HIV/AIDS public policy in your country?
- What strategies and organizational structure have been put in place to respond to the HIV/AIDS epidemic in your country?
- What are the gaps, weaknesses, and challenges that remain in reducing the rates of HIV/AIDS in your country?

The one-hour interviews were held in the offices of the informants. Notes were taken by the first author during the interviews and were typed up immediately after each interview. The first author received IRB approval from North Carolina State University to conduct the interviews. The interviewees were briefed about the research prior to the interviews and were asked for and provided oral consent to be interviewed. The use of oral consent was approved because the interviewees were all high-ranking officials in their governments or organizations and to respect the local culture.

Archival research

Archival research was conducted at the Ministry of Health headquarters in Uganda, Kenya, and Tanzania, and the headquarters of the organizations of the informants. Among the materials collected were reports, booklets, pamphlets, and newsletters published by these organizations. These materials were primarily internal documents produced for dissemination of information within a variety of government agencies, district and regional offices, and external funding agencies. The archival materials were useful for establishing timelines and providing detailed information about programs and policies.

Data analysis

An inductive process was used for analysis in three phases: Reducing the data and identifying its source, creating themes, and drawing conclusions, as suggested by Miles and Huberman [51]. The first author generated three to four pages of typed notes for each interview for a total of 50 pages.

We began by using interview notes and archival data to produce a detailed description of the case for each country along with relevant contextual information. Each author then engaged in a thematic analysis of each case using Diffusion of Innovations theory as a sensitizing framework [52]. We concluded our analysis by

drawing naturalistic generalizations based on the central themes that emerged from the data [50]. The second and third authors acted as validity checks by questioning the first author on interpretations of the interviews as well as asking for additional contextual information to assist in the interpretation of the data.

Results

Based on our analysis of the three cases, the DOI concepts that emerged as most relevant to the effectiveness of HIV/AIDS prevention campaigns in Uganda, Kenya and Tanzania were social systems, time and cultural compatibility. More specifically, we found that the coordination of organizations and agencies, early intervention, and compatible messages increased the success of health communication in Uganda, while approaches taken in Kenya and Tanzania were less consistent with these DoI recommendations, resulting in less successful campaigns in both countries.

Social systems

DoI reminds us that any health information campaign must include all components of the social system. In our case, the social system includes the government and relevant organizations created to address the HIV/AIDS epidemic, other organizations involved in the crisis throughout each country, and the citizens affected by, or in danger of contracting, HIV/AIDS. The first cases of HIV/AIDS infection were recorded in Uganda in 1982 [19,53,54], and by 1992 the government realized that HIV/AIDS was not simply a health problem, but was an economic, social and cultural problem as well [54,55]. As a result, it adopted a policy known as the multi-sectoral approach that involves an alliance of the private sector, communities, cultural groups, religious institutions, Non-Governmental Organizations (NGOs), and the public sector to combat the spread of HIV/AIDS [19,20,56]. This culminated in the establishment of the Uganda AIDS Commission reporting directly to the office of the President of Uganda [19,54,55,57]. The commission has five major goals: To coordinate all the sectors' interventions, to lead the planning of efforts to control HIV/AIDS, to promote information sharing among all sectors involved, to promote joint technical support for all sectors, and to mobilize resources to combat the spread of HIV/AIDS (personal interview, 2003).

The government's commitment to fighting HIV/AIDS created a climate conducive to the involvement of diverse organizations in HIV/AIDS-related activities in the country (personal interview, 2003). These include Ugandan organizations such as The AIDS Support Organization which provides counseling and medical facilities to people living with HIV/AIDS, trains HIV/AIDS counselors, works to minimize stigma, and advocates for the rights of the people living with HIV/AIDS in the country [55,58,59] and the Network of AIDS Service Organizations which brings together all NGOs that are involved in HIV/AIDS-related activities to share their experiences, information, and strategies in combating the HIV/AIDS epidemic in the country (personal interview, 2003). In addition, many international donor agencies such as the United States Agency for International Development, Overseas Development Agency, International Christian Outreach, World Council of Churches, European Union, Irish Aid, Swedish International Development Agency, Danish Development, and Australian Aid came to Uganda to fund various HIV/AIDS-related activities [60].

Faith-based organizations add to the multi-sectoral approach by playing a major role in educating and mobilizing the public to respond to the HIV/AIDS epidemic. Among these organizations are the Church of Uganda (Protestant), the Catholic Church, and the Islamic Medical Association of Uganda [61]. In Uganda, the government forced religious organizations to play a more active and supportive role in the response to the HIV/AIDS as evidenced by the fact that the President of Uganda appointed then Bishop of Namirembe Diocese as the first chairman of the Uganda AIDS Commission (personal interview, 2003). For instance, the Muslim leaders in the country decided that while they would not condone the use of condoms publicly, they would not oppose them if they saved lives of the people (personal interview, 2003). In contrast, it has been argued that in Kenya and Tanzania churches were actively opposed to the use of condoms which negatively affected the prevention efforts in both countries Another important aspect of the social system that contributes to the successful campaign in Uganda is the involvement of individual people-well-known figures who speak out about HIV/AIDS as well as everyday people who suffer from the disease themselves or suffer from the effect of the disease on their families or their communities (personal interview, 2003). According to the Uganda AIDS Commission and UNAIDS, the multi-sectoral approach stipulates that "all Ugandans have individual and collective responsibility to prevent HIV transmission, provide care for people infected and affected by AIDS and mitigate all negative consequences of the HIV/AIDS epidemic" [56]. Recognizing the importance of involving as many people as possible in the campaign, the Uganda HIV/AIDS Partnership was established in 2002 to bring together all stakeholders, including people living with HIV/AIDS, to get them to participate in the response to the epidemic [55].

One notable individual who has had a significant, positive impact on the campaign is the pop singer, Philly Bongoley Lutaaya, who declared that he was HIV positive in 1989 [62]. Lutaaya served as an important opinion

leader [38], and he was able to get the word out about HIV/AIDS prevention using both interpersonal and mass media channels. Lutaaya toured Uganda in 1991 to educate the people, particularly young people, about HIV/AIDS. The tour was made into a film, and Lutaaya also recorded a song which tells his personal story of living with AIDS.

The multi-sectoral approach developed by Uganda showcases the importance of the involvement of a wide variety of organizations and individuals, but that involvement must be coordinated to be successful. At least one study has attributed Uganda's success in preventing HIV to its effective use of networks [63]. In contrast, although Kenya had several hundred organizations involved in HIV/AIDS communication activities in the country by 2003, there was no coordination (personal interview, 2004). Each organization acted in isolation, with no reference points for comparing the types of services needed and offered, and no mechanism for monitoring and evaluating their activities (personal interview, 2004). Major weaknesses of the campaign in Kenya include lack of proper strategic planning and design of communication activities, poor links between communication programs and service delivery, failure of segmenting the intended audience and no accounting for audience diversity, lack of participation of the intended audience or public in research design of the campaigns, and lack of communication research [64].

The early years of the fight against AIDS in Tanzania lacked political commitment and leadership, and thus produced limited success (personal interview, 2005). Beginning around 1999, a strong political commitment and leadership at the top levels government developed, but the campaign lacked organization and involvement at the district and community level [65]. Although Tanzania adopted the multi-sectoral approach, not all ministries had the economic and technical support to effectively implement the program (personal interview, 2005).

Time

When the National Resistance Movement took over political power in Uganda in 1986, the government of Cuba offered to give professional training to the army of Uganda and, subsequently, a number of top tier soldiers were sent to Cuba for training (personal interview, 2003). Cuban regulations required that these soldiers be tested for HIV/AIDS. According to the Chief Executive Officer of The AIDS Support Organization, "90% of the soldiers were found to be HIV positive, which hit the government so badly that they decided to educate the masses" (personal interview, 2003). Similarly, the Commissioner for Community Health Services reported that because of the test results, "President Yoweri Museveni directed the Ministry of Health to make HIV/AIDS a priority" (personal interview, 2003).

Further socio-cultural factors included the fact that President Yoweri Musevini and other leaders were members of tribes in South Uganda where AIDS was most severe. They directly witnessed deaths and felt the urgency of the problem. This same sense of urgency was not felt in Tanzania, for example, where the most serious problems with AIDS in the 1980's were in the Kagera Region, which was far away from the center of power, Dar Es Salaam. Furthermore, the end of the longstanding Civil War and oppression by Idi Amin motivated Ugandans to rebuild the country and to tackle problems in the 1980's. This same culture was not present in Kenya and Tanzania at that time. Museveni has been commended for adopting the open public policy on AIDS in Uganda [66], which encouraged people to recognize the crisis, talk openly about the problem, and address sexual practices contributing to the spread of the disease.

There is a direct relationship between early attention to the HIV/AIDS crisis and the level of involvement and coordination in the social systems, as described above. In the three decades since Uganda began its campaign against the spread of HIV/AIDS, one of the most obvious effects of time is that as Uganda has promoted the multi-sectoral approach, more and more organizations have been formed or joined the campaign. In 1990, there were 50 organizations involved in HIV/AIDS-related activities in Uganda, by 1997 there were 1500 [61], and by 2003 there were over 2,500 organizations [67].

In comparison, Kenya and Tanzania did not declare the AIDS epidemic to be a national disaster until 1999, even though the first cases were reported in 1984 and 1983, respectively (personal interview 2004, 2005). By 2003, there were only a few hundred organizations involved in HIV/AIDS activities in Kenya, and their efforts still lack coordination (personal interview, 2004). Although Tanzania established their national AIDS Control Program in 1985, a year before Uganda made HIV/AIDS a priority, the campaign in Tanzania faltered because of a lack of leadership and political commitment (personal interview, 2004). According to the Tanzanian Prime Minister's Office [66] there are an increasing number of NGOs, community-based organizations and faith-based organizations that are involved in the response to the HIV/AIDS epidemic, but due to the lack of coordination, it is not known how many organizations may be involved at this point, and there is no inventory of organizations that are involved in HIV/AIDS related activities in Tanzania. In comparison, Uganda has a comprehensive inventory of all organizations that are involved in HIV/AIDS related activities.

DoI suggests that time is a critical factor in the dissemination of information about an innovation. In Uganda, there has been a continuous process of evaluation and education, allowing the policies and campaigns to develop and gain acceptance among the population.

Cultural compatibility

In East African culture, personal issues (such as sex) are traditionally considered taboo subjects not discussed in the public domain [68]. Yet as described above, the location and extent of the HIV/AIDS crisis created a sense of urgency that changed this cultural norm in Uganda.

In addition to the incompatibility of openly talking about sexual behaviors, other cultural realities create a challenge for HIV/AIDS campaigns in Uganda and all of East Africa. Poverty is one of the major causes of the spread of the AIDS epidemic [68]. According to Daily Monitor [69], the percentage of people living under the poverty line fell from 31.1% in 2006 to 19.7 in 20013. While the Uganda government reduced the percentage of people living under the poverty line this percentage is still high, and many women resort to commercial sex work, which increases the spread of the epidemic [68]. Another challenge comes from cultural practices found in some subcultures of Uganda such as polygamy and wife inheritance [70,71]. Polygamy allows men to have multiple sexual partners, while preventing women from inheriting their husband's property leaves widows and their children economically handicapped and may contribute to the problem of commercial sex. A successful HIV/AIDS prevention campaign must consider these cultural practices in its message design.

In 1986, Uganda initiated a health education strategy to respond to the HIV/AIDS epidemic with specific goals to inform the public about how HIV is transmitted and to promote less risky behavior (sexual personal interview, 2003). The strategy included providing materials for seminars, radio and television programs; publishing print materials such as posters and brochures for AIDS campaigns; and holding training seminars for parents, teachers, religious and political leaders, as well as modern and traditional health workers (personal interview, 2003).

From the beginning of the AIDS campaigns, the government initiated the ABC (Abstinence, Being faithful, Condom use) model to reduce HIV prevalence (personal interview, 2003). Over time, the campaign has been modified to "ABC Plus" to include voluntary testing and counseling [61]. The first campaign message was "Love carefully", intended to encourage Ugandans to use protection to prevent the spread of HIV/AIDS (personal interview, 2003). This message was communicated on posters, leaflets, radio and television. Another version of this message, "Love faithfully", was disseminated to congregations by religious leaders (personal interview, 2003). The second message, "Zero Grazing," was targeted to people in polygamous relationships [61]. Although this message to be faithful to one's sexual partner is virtually identical to the "Love carefully/faithfully" campaign, it was more readily accepted by the primarily agrarian society of Uganda. The "Zero Grazing" slogan was very concrete for the Ugandans, because in the early 1980's experts found that keeping cattle in a confined area known as a "kraal" reduced the prevalence of ticks and tick-borne diseases. Cows kept in the kraal were healthier and gave more milk and more meat, and this method was called zero grazing because cows did not graze outside the kraal. The method was widely spread in the cattle-keeper community, where Museveni was from, and therefore when used in the AIDS context, it was instantaneously understood. All vehicles of the AIDS commission had a bumper sticker that read "Zero Grazing, you know why". Ugandans thus resonated with the underlying message of fidelity encapsulated in "Zero Grazing" (personal interview, 2003). The examples of President Museveni declaring the open policy on HIV/AIDS and finding a campaign message that worked for the target audience illustrate the benefits of formulating messages that are compatible with the local culture. Kenya and Tanzania share many of these cultural factors, yet no open policy was declared and no clear and consistent message was disseminated, making it more difficult for any HIV/AIDS communication to be compatible with the local culture.

Discussion/Implications

This study makes a unique contribution to the discussion of HIV prevention in Africa by including the voices of high-level government and religious officials to help understand policy decisions in the three countries of Uganda, Kenya and Tanzania. Both Kenya and Tanzania have attempted to emulate at least some aspects of Uganda's multi-sectoral approach to AIDS prevention and awareness. For example, the Kenya National Communication Strategy 2002-2005 included the promotion of the ABC model [64] and Tanzania adopted the multi-sectoral approach in 2000 (personal interview, 2005). However, DoI suggests that there are critical components missing from their implementation that could contribute to greater success.

With regard to the social system, our DoI analysis suggests that there is a need for participation by many groups from many different sectors of society. In Uganda, public, private, community and religious organizations work together and with the assistance of individuals to promote a common message. In Kenya and Tanzania, there are fewer organizations representing fewer

interests. Importantly, religious officials have not been a central part of the policy decisions in Kenya or Tanzania. Secondly, the efforts of these organizations and individuals must be coordinated to avoid duplication of effort, inefficiency, and confusion. Thirdly, the organizations need to share resources to make the most of limited funds and other assets.

DoI says that you need time to disseminate an innovation, and there is no way that other countries can go back in time and allow their policies and programs to evolve as the policies and programs did in Uganda. However, other countries can take advantage of the years of Ugandan experience with public health campaigns pertaining to the control, prevention, and treatment of HIV/AIDS. While they will still need many years to reduce prevalence and gain control of the crisis, they should be able to achieve greater success in less time by using the Ugandan experience as a model.

There are two aspects of cultural compatibility that must be addressed. The first is that openness is a requirement for any public health campaign, but especially in the case of HIV/AIDS. If a culture's mores are incompatible with openness about sexual conduct, there can be no effective program. Strong leaders must create an environment where individuals and groups can talk openly about the crisis. Second, the message designers must understand the culture of the audience, particularly when dealing with sensitive topics such as HIV/AIDS and sexual practices [72]. If the designers understand the cultural intricacies involved they can design messages that are palatable, clear, consistent and compatible with the cultural values, norms, and lifestyle of the people.

The study has 2 limitations. First, the number of interviews that were conducted by the first author in all 3 countries was few because of limited funds. If funds were available it would have been possible to reach circulation before stopping data collection. This would have given us more data to work with. Second, because of limited funds, the time spent in each country was brief. So, the first author was not able to collect more data such as on the faith-based organizations in Kenya and Tanzania.

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