ELSEVIER

Social Science & Medicine 59 (2004) 185–198

SOCIAL SCIENCE & MEDICINE

www.elsevier.com/locate/socscimed

Social, cultural and sexual behavioral determinants of observed decline in HIV infection trends: lessons from the Kagera Region, Tanzania

Joe Lugalla[a,*], Maria Emmelin[b], Aldin Mutembei[c], Mwiru Sima[d], Gideon Kwesigabo[e], Japhet Killewo[e], Lars Dahlgren[b]

[a] *Department of Anthropology, University of New Hampshire, 316 Huddleston Hall, Durham, NH 03824, USA*
[b] *Department of Public Health and Clinical Medicine, Epidemiology and Public Health Sciences, University of Umea, Sweden*
[c] *Department of Kiswahili, University of Dar-Es-Salaam, Tanzania*
[d] *Department of Sociology, University of Dar-Es-Salaam, Tanzania*
[e] *Department of Epidemiology/Biostatistics, Muhimbili University College of Health Sciences, Tanzania*

Abstract

This paper is a follow-up of earlier findings by the Kagera AIDS Research Project (KARP), which documented declining trends in the prevalence and incidence of HIV infection in the Kagera region of Tanzania. The paper examines socio-cultural and sexual behavioral changes as possible determinants of the observed declining trends in Bukoba, the largest urban area of the region. The study used in-depth interviews, focus group discussions, field observations and ethnographic assessments to collect the required data. The findings suggest that since the initial years of the epidemic there have been significant changes in sexual behaviors, norms, values, and customs that are considered high-risk for HIV transmission. The findings show an increase in condom use, abstinence, zero grazing (sticking to one sexual partner) and uptake of voluntary HIV testing while traditional practices such as polygamy, widow inheritance, excessive alcohol consumption, and sexual networking are declining. We suggest that these changes are partly a result of the severity of the epidemic itself in the study area, and interventions that have been carried out in this area since 1987. The major interventions have included health education, the distribution of condoms, AIDS education in schools, voluntary HIV counseling and testing. These are encouraging findings that give hope and we believe that other places within Tanzania and other countries experiencing a severe AIDS crisis have much to learn from this experience. However, changes in norms and behavior are vulnerable; people in Kagera are still at risk and there is a need for continued intervention together with monitoring of the direction of the epidemic.
© 2003 Elsevier Ltd. All rights reserved.

Keywords: AIDS intervention; Behavioral change; Socio-cultural changes; Health and AIDS education; Condom use; Tanzania

Introduction

The HIV-1 epidemic in sub-Saharan Africa is currently approaching its third decade, and various approaches have been used in order to monitor HIV trends in different settings (Kamali, 2000). In monitoring HIV trends, several studies in Africa have used population-based cross-sectional and longitudinal studies to better understand HIV infection prevalence and incidence trends in the general population. Some of these studies have been supplemented by studies attempting to understand patterns of behaviors associated with HIV/AIDS in the same population. Such study designs have been indispensable in identifying the factors that have been shaping the dynamics of the epidemic. Unfortunately, because of the high cost

*Corresponding author. Tel.: +1-603-862-1847; fax: +1-603-862-1131.
E-mail address: lugalla@hotmail.com (J. Lugalla).

0277-9536/$ - see front matter © 2003 Elsevier Ltd. All rights reserved.
doi:10.1016/j.socscimed.2003.10.033

involved, very few longitudinal studies have included qualitative components that focus on socio-cultural and sexual behavioral changes.

The Kagera AIDS Research Project (KARP) is a bilateral (Tanzania/Sweden) research project that is unique in that it is an interdisciplinary long-term research commitment that has been able to follow the progression of the HIV/AIDS epidemic in Kagera since 1987. Since Kagera was the first region in Tanzania to be severely affected by the epidemic, the government, local as well foreign NGOs have carried out many public health intervention programs in this area. However, little is known today about the impact of these efforts. Additionally, little is known about how the severity of HIV/AIDS itself has also been instrumental in transforming the ways of life of the people who live in this area.

A population-based survey conducted by KARP in the region in 1987 showed a high prevalence of HIV infection, ranging between 0.4% and 10% of the population in the rural areas and 24.2% in the urban area of Bukoba (Killewo et al., 1990). A follow-up study in 1989 showed corresponding incidence figures in which the highest HIV incidence was in the Bukoba urban area (Killewo et al., 1993). The age-specific annual incidence was highest in those between 25 and 34 years for men and 15 and 24 years for women (ibid.) The KARP has continued to monitor HIV-1 infection prevalence and incidence trends in both the rural and urban areas of Kagera using both sentinel surveillance and population-based studies. Findings from these studies indicate a downward trend in both prevalence and incidence. In the Bukoba urban area, the prevalence of age-adjusted HIV-1 decreased from 24.2% in 1987 to 18.2% in 1993 and later to 13.3% in 1996. The age-specific decline was steepest among females aged 15–24 years. No age group exhibited a significant upward prevalence trend (Kwesigabo, 2001). A follow-up study of the incidence also showed a significant decrease. Analysis of socio-demographic characteristics indicated a significant decline among Christians, among people with comparatively high education (at least 7 years of schooling), and among married couples. Questions about behavioral factors indicated a rise in condom use and a rise in the proportion of individuals getting married, accompanied by a decrease in age at first marriage. Age at first intercourse seemed to decrease over time, and a majority reported having only one sexual partner (Kwesigabo, 2001; Kwesigabo et al., 1998, 2000; Kwesigabo, Killewo, & Sandstrom, 1996).

Objectives of the study

We believe that the results from our quantitative studies described above, though of course encouraging, also raise new questions that cannot be answered using the quantitative toolbox alone. Thus, the overall objective of this study was to explore the underlying factors that might help to understand and explain the observed declining trends of HIV infection By carrying out a qualitative study, we wanted to understand how the HIV/AIDS situation was perceived at individual, group and community level. Our major research questions centered on how different actors perceived changes in sexual behavior, norms and collective values and their views on the role of intervention activities in behavioral change. If they perceived that there were changes, what behavior were changing, who was changing and why? We also wanted to know how HIV/AIDS was impacting people's lives and changing their usual ways of life. Finally we wanted to know their views about how HIV/AIDS-related interventions have influenced attitudes and behavior.

Theoretical framework

It is evident that heterosexual transmission of HIV infection is the most important in the AIDS epidemic in sub-Saharan Africa. As such, in the absence of cure or effective vaccine for AIDS, most African countries have focused on arresting the spread of the HIV virus by encouraging and promoting sexual behavior change (Benefo & Takyi, 2002). Risk reduction through sexual behavioral change is an important means of cutting the chain of transmission of HIV infection in high HIV prevalence and incidence areas. This is especially true given that effective vaccines, affordable antiretroviral drugs, or specific chemotherapeutic agents are lacking. Yet, it is often difficult to make an accurate assessment of risk reduction among individuals in the general population since such assessment depends on interviews regarding behaviors that are difficult to validate. Several population-based studies have been conducted in different settings to assess the role of sexual behavioral change in explaining the HIV prevalence and incidence decline in Sub-Saharan Africa (Ng'weshemi, 1996; Asiimwe-Okiror, 1997; Konde-Lule, 1997; Kamali, 2000; Baeten, 2000; Fylkesnes, 2001; Ghys, 2002; Alary, 2002). Some of these studies have found that reported sexual behavioral changes, mainly resulting from a variety of interventions to prevent transmission, might have partly explained the observed decline in HIV prevalence. Most of these studies have compared indicators of behavior change in follow-up and repeated cross-sectional studies with HIV status in individuals and with HIV prevalence and incidence trends. Their findings have generally agreed with each other and reconfirmed the role of sexual behavior change in the observed decline. However, a major limitation of such studies has been the persistent tendency of individuals to

over report the use of preventive measures such as condom use and to underreport sexual activity such as number of sex partners (Taha, 1996) thereby diluting possible associations with biological markers of infection. In addition, sexual behavioral change may not be the only factor in the observed decline. Other societal and cultural changes may also have significantly contributed to the decline. Even in a situation where behavioral changes occurred, it has been very difficult to confirm the exact type of intervention that has been the most effective so that it can be applied in other areas that experience severe epidemic crises. For example, many AIDS control programs in the continent rely heavily on mass media to disseminate information about the disease, reduce misinformation and induce behavioral changes that would protect against infection (Benefo & Takyi, 2002). However, it is difficult to assess how effective the mass media have been in meeting these objectives (ibid).

Some studies argue that change of behavior associated with a specific disease or epidemic is a social process. As for HIV/AIDS, Bowser (2002) argues that, first, there is a general knowledge of the disease within one's group or community, but this knowledge alone does not lead to lowering HIV risk behaviors. People perceive risks differently. If one has neither seen infected people nor witnessed the consequence of an infection, awareness and knowledge about AIDS may not pose any immediate threat to the person and the individual is unlikely to change his/her behavior. Secondly, he argues that the process of behavioral change is both complex and extended in time. It is not until people begin encountering people who are infected that the potential consequences become salient, and that many members of the community become conscious and begin to see the disease as a threat to them that knowledge of AIDS becomes generalized, worrisome and of great concern. Still, at this stage you are likely to continue to have people who resist changing their behavior. Third, Bowser argues that only when infected people start dying does knowledge of HIV and AIDS as a generalized worry transform to widely spread change in behavior toward lower HIV risk behaviors. At this point, the threat becomes immediate and the risk becomes real. Although at this time it might be too late for many, the more deaths there are, the more incentives there are to change behavior. Fourth, is when there is a consensus at community level for the need for change to low risk behaviors based upon witnessing the consequences of infection, does the change to low risk behavior become established. At this stage, communities or social groups are likely to introduce new norms and values that enhance the processes of sexual behavioral change. Those who break the new norms may be ridiculed or shunned or punished. What we learn from this is that the change of behavior is a social process, and that individuals, as members of social groups and communities, are more likely to be influenced by group or community dynamics in changing their behavior than by their mere personal knowledge and awareness. Usually people will continue to adhere to the new forms of behavior as long as the threat that forced them to adopt the new behavior continues to persist. If this continues for a longer period, a new way of life (culture) can evolve and can be transmitted from one generation to another as a ritual.

The above theoretical framework has guided our qualitative study. We have therefore attempted to assess the extent to which AIDS itself is transforming the norms and values of the society and related sexual behaviors on the one hand, and how these changes can be considered to be shaping the trends of HIV infection on the other.

Methods of data collection and analysis

This study was carried out in Bukoba, the regional capital of the Kagera region, located in the northwestern part of Tanzania on the shores of Lake Victoria. According to the 2002 National Population Census, the town has an approximate total population of 81,221 inhabitants of whom 40,822 are males and 40,399 are females. Most belong to the Bahaya ethnic group. The majority of the people living in this town are Christians (predominantly Catholics and Protestants) followed by Moslems and few others who do not hold any religious affiliation. Administratively, the town is divided into 14 wards that are in turn subdivided into streets for the more urbanized wards and villages and "vitongoji" in wards that are more rural (Kwesigabo, 2001).

The study is based on different types of qualitative methods with the aim of describing and evaluating the information on different levels. On the individual level, we conducted in-depth interviews with people who were purposively selected due to their different experiences with the epidemic. Data on norms and collective values, customs and practices were collected with the help of focus group discussions. To be able to describe and discuss social structures and the role of interventions, interviews were held with key-informants representing institutions like the church, the health-care system, schools and local NGO's. Data collection was supplemented by field observations and ethnographic assessments. To capture the variation in attitudes and perceptions in the area, the focus group discussions and the observations were concentrated in four of the 14 administrative wards in the Bukoba urban area. One ward was chosen because it was predominantly urban and accommodated many affluent social groups. The second ward was representative of a poor urban neighborhood and the third ward was chosen because

of its rural characteristics. Finally, the fourth ward was included in the study because of its rural-urban mix characteristics. Research assistants recruited from among the students of sociology at the University of Dar-es-Salaam were assisted by health personnel of the Bukoba Regional Hospital who were previously involved in doing research in the area. The research assistants conducted interviews, observations, facilitated focus groups discussions, and recorded field notes. Below is a description of how the fieldwork was organized and operationalized.

Focus group discussions

A total of 16 focus group discussions were conducted, four from each ward. In each ward we had one group of adult males and one of females aged 26 years and above. Of the remaining two groups, one was composed of male and another of female adolescents both aged between 14 and 25 years. The group size ranged between 6 and 8 persons. In order to get volunteers for focus group discussions, we held meetings with the Ward and Village Executive Secretaries. These officials organized special meetings with the people to whom we explained the nature of our study, its objectives as well the importance of having their informed consent. Since a lot of people volunteered to participate in the study, we decided to pick randomly just a suitable number for focus group discussions. A total of 125 people from all 4 wards participated in focus group discussions. The distribution of participants by sex and age was: Males aging 26+ (31), males aging 14–25 (31), females aging 26+ (32) and females aging 14–25 (31). The language used during discussions was Swahili, switching to the local Kihaya language when the exact meanings of some of the expressions used were needed. The discussions centered on general knowledge about HIV/AIDS, modes of spreading, interventions that are in place or available, what people are doing in order to protect themselves from HIV infection, and their views on whether or not people were changing their sexual behavior. Since discussions on sexual issues are sensitive, male research assistants held discussions with male focus groups, while female research assistants conducted the discussions with female focus groups. This created an enabling environment for people to discuss their opinions about sex and sexual relations without undue fear or shyness. Focus groups are capable of revealing the process whereby social norms are collectively shaped through debate and argument (Lunt & Livingstone, 1996). Kitzinger (1995) has argued that focus groups are also good for discussions about sensitive topics because the less inhibited members of the group often break the ice for shyer participants. Using focus group discussion we were able to collect information even about sensitive issues such as condom use and sex.

Qualitative research interviews

A variety of interviews were performed with representatives from governmental and non-governmental organizations that actively work on HIV/AIDS in the area. These key informants were people such as the regional and district AIDS coordinators, medical officers and social welfare officers, the regional education officer, the urban district health officer, counselors of post-clubs and leaders of the local fishermen's club, leaders of all NGOs that are involved in AIDS related activities in the study area, HIV/AIDS Community Counsellors living in the study area, religious leaders as well as leaders of different political parties that are dominant in the study area. Information sought from the key informants included their own assessment of the situation of the epidemic and its impact in the area, their opinion about sexual behavior, HIV risk behaviors and practices, the role-played by NGOs in controlling the epidemic and the effectiveness of interventions being implemented. Other key informants included randomly selected owners of guesthouses, hotels and representatives of their workers. Our research assistants talked also to a variety of bar maids and male bar workers. We also interviewed a total of 6 people living with HIV/AIDS often connected in connection with the visits to the different NGOs. Where possible, some of the researchers were also allowed to attend HIV/AIDS pre-test and post-test counseling sessions. When visiting shops that sold condoms the shopkeepers were interviewed about their perceptions about the trends in condom sales and also about the stigma that can accompany the purchase of condoms.

Field observations and ethnographic assessments

The field observations and ethnographic assessment involved locating and visiting all NGOs working with HIV/AIDS support and intervention activities in the Bukoba urban area. While in the premises of these NGOs, we spoke with the workers and visited their documentation centers where we read their various activity and annual reports and evaluation studies (if any). We then corroborated this information with what we collected from the focus groups and in-depth interviews. We also visited four secondary schools where we talked with some teachers and students about HIV/AIDS.

To get an in-depth understanding of organizations working on AIDS-related activities, we visited the places where these NGOs operate in order to observe and if possible, to participate in some of their activities. We attended two health campaign seminars and counseling sessions of people who are living with HIV/AIDS. We assessed how the sessions were organized, the content, people's participation, and how they coped with

HIV/AIDS. In the evenings, and particularly during weekends, we visited both local and modern beer drinking places, disco centers, and other premises of entertainment. We also participated in overnight wedding ceremonies and send-off parties (marriage) in order to make the necessary observations. While in the drinking places, we held informal talks with a variety of barmaids to solicit their opinions about AIDS, how it spreads, and how they protect themselves.

The analysis of data

First, we have sorted and ordered our data into categories. This analysis has generated themes expressing factors behind discovered changes in risk factor behavior in order to facilitate a thematic discussion. Second, we have tried to interpret our data, finding descriptive patterns and attached meanings to the information given by our informants (Patton, 1987). We have presented the results according to the themes that we focused on during the data collection phase. Simultaneously, we have also given space to the perceptions and experiences of the people themselves, to facts given by key informants, as well as to our own field observations. In discussing these findings, we have focused on a few main categories that we have generated from our coding of the data. Some categories constitute our own etic interpretation of what factors may be important in understanding and explaining the observed declining trends in HIV infection in Bukoba.

Our approach is mainly inductive in the sense that we have without prejudice, tried to discover new things in the study material. Based on our theoretical framework described earlier, we searched for both the cognitive and emotive properties of attitudes possible to relate to changes in risk behavior. Second, we searched for what Berger and Luckmann (1967) label "the social construction of reality". This means looking specifically for factors such as norms and values that are important in the construction of perceptions, emotions, cognitions, and consciousness about the epidemic and its consequences. This frame of reference is closely related to symbolic interactionism and thereby also to Erving Goffman's (1963) sociological theory of stigma, which is relevant to this study.

Our field observations helped us to reflect upon what people said in comparison with what we could see ourselves. In this way both subjective and objective measures have been considered in the interpretation of the data. From the focus group discussions we tried to capture the variation of attitudes and perception present in the different groups and then by comparing the different groups look for patterns in attitudes in different sub-groups. The same approach has been used in analyzing information derived from in-depth interviews with key informants and information from other interviews that we performed. By comparing information from many different sources we aimed at seeing patterns and getting a more full and trustworthy picture of the situation.

The findings

Marriage customs and family related practices

We asked our informants about the contemporary family institutions of marriage and also practices in relation to death and mourning. We also inquired about other customs and practices that have been associated with HIV/AIDS in the past. Our questions centered on abstinence, multi-partnered sexual relations, polygamy, widow inheritance, romantic sex, marriage rituals, and death and mourning customs. In their responses, we insisted that the informants compare the present with what has happened in the past. Focus group discussions as well as interviews with key informants suggested that this area is experiencing enormous change in almost every aspect of life.

Most participants expressed the presence of both early and late marriages, but at the same time, some expressed their concern that people are afraid to get married because they are not sure of the sero-status of their prospective partners. There are people who consider every individual as potentially infected and say: *"Do not trust anybody these days"*. One of our adult female informants described the situation as follows: *"Men look at women as their sisters and women look at men as their brothers. They no longer think of each other as potential sexual partners"*. Another female informant explained that due to the gender inequality, which prevails in this area, men put all the blame on women: *"For them, every woman is a carrier of the virus that causes AIDS"*.

As a result of AIDS, counseling and testing for HIV before marriage has become an official policy of the church in the Kagera region. Most Protestant and Catholic churches require that couples be tested for HIV infection before they are wedded. This church policy has raised much concern in terms of the ethical issues concerning confidentiality and on its usefulness in reducing HIV transmission. Yet it may either result in earlier marriages because younger girls or boys are believed to be less likely infected or in late marriages because of the fear of testing and the time spent looking for an uninfected partner. Our recent visit in Karagwe district (2002) recorded 4-marriage engagement that broke because one partner tested positive. We also recorded two cases where both partners tested positive and proceeded with their marriage arrangements. Our interviews did not confirm any increase in early marriages. They rather indicated the complexity of marriage patterns where additional factors like poverty

or an increase in the years of schooling may lead to later marriages.

Our informants described that before the AIDS era, it was not uncommon for men or women, married or unmarried, to have multiple sexual relationships with several partners. Sexually transmitted diseases like gonorrhea were considered as *mafua* (*common cold*), implying that people experienced some brief discomfort that cured easily, and therefore, would not deter them from sex networking. At that time, women were not very concerned about their male partners' sexual networking, as male extramarital affairs were sanctioned by societal norms and values and therefore more tolerated.

The HIV/AIDS epidemic appears to have changed the norms that sanctioned male promiscuity. Many of our informants argued that, since HIV infection of one partner means the infection of the other, a habit of sexual partners guarding each other is increasingly becoming common. Related to the institution of marriage is widow inheritance. The traditional norms that require either a brother to inherit his dead brother's wife or a brother in law to have sex with his brother's wives/wife are fading away. The following expression was recorded from one of the adolescent focus groups: *"People do not inherit widows nowadays because they are not sure whether the spouse died of AIDS or not"*. At the same time, findings from focus groups and in-depth interviews reveal that divorce, separation, and domestic violence happen in families in which one partner or both are infected with HIV.

There is a strong consensus among our informants that AIDS has transformed how death is perceived, accepted, and dealt with. Also the actual burial practices and associated rituals are changing. In the past, bereavement and mourning rituals *"Kuteka Orufu-Matanga"* would last for many days. In some cases, women who lost their husbands would stay indoors for 3 months or more. These traditions have disappeared. If these traditions had persisted, no one would be able to continue with their daily economic activities because of frequent deaths and extended family relations. Hence, today, most relatives and friends of the deceased disperse to their homes immediately after the burial ceremony is over. Only a few very close relatives continue to mourn for 1 or 2 days. This reduction in the number of days of mourning has also changed the size of the overnight burial ceremonies, some of which used to create opportunities for high-risk sexual behavior. Less money is now spent on food and drinks for the ceremony. Prior to AIDS, and also during the first few years of the epidemic, relatives, friends, and communities had to spend a fortune on funeral costs. One of our informants emphasized that *"Deaths have been so frequent, one after the other, that we are now bankrupt. People have nothing to contribute towards burial ceremonies anymore"*. Members of the focus group discussions agreed and pointed out that the customs of cutting or shaving their hair for every death of a close relative as a sign of mourning has virtually stopped because *"there is nothing to cut or shave for the next ceremony"*. However, where these customs continue to persist, people no longer share the same razor blades, as was the case before, because they now know how the blades can transmit HIV infection. Before the HIV/AIDS epidemic, it was customary in many ethnic groups in Tanzania to end the mourning period after 40 days (*Arobaini*). A variety of issues involving property inheritance, widow inheritance, and debts of the deceased, and orphan care would be discussed during this time. In Bukoba today, the *Arobaini* concept has increasingly become irrelevant and important issues are now resolved a few days after the funeral before the close relatives disperse. Widow inheritance is no longer on the agenda when a married man dies. The discussions center on property inheritance and how children will be taken care of. Although the breakdown of the custom of widow inheritance is encouraging both from a gender and an HIV-transmission perspective, it also raises new questions concerning the taking care of the deceased's family including the widow and the children. Originally this was the obligation of the person who "inherited" the widow.

Excessive drinking, night parties and sexual networking

Many studies on HIV/AIDS in sub-Saharan Africa have linked excessive drinking, over night parties and ceremonies to high-risk sexual behavior that can increase vulnerability to HIV infection (Mukiza-Gapere & Ntozi, 1995a,b; Talle, 1995; Heguye, 1995). Our previous studies have also noted this fact (Lugalla et al., 1999). In these studies people have identified alcohol drinking places, nightclubs, and discotheques as high-risk places. Participants in the focus groups unanimously agreed that overnight parties, accompanied by excessive drinking, tended to promote high-risk sexual behavior. This view was also supported by individual in-depth interviews and by most of the key informants. According to their opinion, is evident that, compared with the past, there are mounting evidence that the nature of excessive drinking is changing. The following viewpoint was expressed by the adult female focus group:

> "In the past, during wedding ceremonies, men spent all night partying and drinking. They would move from one party/ceremony to another sleeping with different women like animals. Thank God! That, this is no longer the case today". (Adult female focus group).

Although some participants doubted whether people are reducing their excessive drinking behavior and

patterns of sexual networking, there is a general consensus that people are becoming more careful. Some argue that besides the fear of AIDS, most people particularly men have changed their drinking behavior because of poverty. They go to pubs, bars and hotels less frequently. When they do go, they usually sit alone, buy their own drink and leave early for home. This is contrary to the past when men would be accompanied with women or would patronize barmaids; offer them drinks and barbecued meat in exchange for sex. The following viewpoint was expressed by the adult male focus group:

> "In the good old days, men used to go to bars, not only to drink but also to get women. The situation now has changed. They drink at home instead of going to bars. If one goes to a bar, he drinks alone. That has helped to curb down prostitution a great deal. Those who continue to hunt for sexual partners try to search for partners who are honest and trustful and they also use safe sex methods, like condoms". (Adult male focus group).

Although some of the informants believed that night parties/wedding ceremonies continue to take place. There is a general consensus that some of the people who attend these ceremonies continue to practice sex networking. In their opinion, what appears new compared to the past is the increase in the use of condoms in such relationships. Both male and female focus groups participants reported that used condoms are usually found littered around in premises of ceremonies the day after. The acknowledgement of an intimate connection between alcohol and sexual behavior has also been noted in Talle's study of bar workers in Namanga, a border post in northern Tanzania (Talle, 1995).

Condom use

Condoms are becoming increasingly popular now in the Bukoba urban district compared to the first decade of the epidemic. Participants in most focus group discussions argued strongly that condom use has increased during recent years. Participants in focus group discussions, key informants and opinion leaders associated the use of condoms by the general population, but particularly among youths, with increased knowledge, awareness, and understanding of HIV/AIDS and fear of death caused by AIDS.

Shopkeepers selling condoms also confirmed increased condom sales. Most of them stated that condom sales were now up compared to the last 5 years. One shopkeeper presented his opinion on condom sales as follows: *"Nowadays, people know that AIDS is a killer disease. Both men and women, old and young, come to us to buy condoms without shameful feelings"*. In another shop, a female shopkeeper had this to say: *"Five years ago, you could hardly sell two condom packets a day. Today, we sell more than ten packets a day. Most people are now very conscious about AIDS and they fear it. So they use condoms a lot"*. The NGOs that provide free condoms to their customers held a similar viewpoint.

On condom use, one project manager of an AIDS NGO had this to say:

> "Although both parents and teachers do not admit it, the truth is that many students use condoms nowadays. Certainly students can hardly admit that to their teachers or parents. They prefer to tell them that they are faithful and therefore abstain from sexual relations. But the truth of the matter is that they usually come to us and ask for condoms. The fact that they can indicate their condom type preference confirms that they usually use them. Most students (youths) prefer the "Life Guard" type to the "Salama" condoms.

Information from the Kagera Regional Education office confirmed that drop out rates of female students due to pregnancy have been declining progressively since the mid-1990s. This may be a result of increased knowledge and awareness of sexual and reproductive health matters among female students and the availability of the means to prevent pregnancies including condoms. Although condoms are increasingly becoming popular among students, the official school policy is still negative. According to the heads of the schools we visited, students can be expelled from school if found in possession of condoms within the school compound. The participants of an adolescent male focus group complained about the school policies of punishing or harassing students who were caught in possession of condoms. Their complaint was as follows: *"If students are taught by their peer educators to use condoms in order to protect themselves from HIV, why do teachers punish them?"* When asked what actually happened when teachers found a student with a condom, an adolescent male participant from the group responded as follows:

> "Certainly, you will be punished. You can either be suspended from school for 3 months or you can be expelled for good. But the official government punishment is usually a three-month suspension".

Our field observation confirms that, at present, condoms are more easily available in the Bukoba urban district than before. Almost every general shop keeps them. Their prices are relatively affordable, and the stigma against condoms and those who use them seem to be fading away. For those who cannot afford to buy them, regional and district AIDS coordinators as well as

some NGOs distribute them freely. Condoms are also dispensed freely in government health facilities.

In Africa, female bar workers have often been singled out as an important group in the spread of the AIDS epidemic (Talle, 1995). This contention is based upon the fact that HIV prevalence is higher among them than in the general population (Talle, 1995; Orubuloye, Caldwell, & Caldwell, 1994). In Tanzania, people know that female bar workers not only serve beer and other drinks, but also practice commercial sex in return for money, drinks, food, and other favors. Our research findings confirmed that condom use by Bukoba urban barmaids is high. Most of the barmaids we talked to reported having condoms with them in their wallets and discussed openly their importance. While some regarded condoms as (*silaha*) *"weapons"*, others labeled them as (*vifaa*) *"important tools"*. One of the barmaids told us the following: *"I do not like to die. Nowadays, I trust no one. As far as I am concerned, I consider every customer infected with HIV. So usually I ask my sexual customers to use condoms"*. These views were held by many of the other barmaids we interviewed.

Some of the women complained about the lack of availability of female condoms in the area. They stated that female condoms tend to lessen the hassle of negotiating with men about whether to use a condom or not. They claimed that with female condoms, they would just wear them without prior discussion with the sexual partner, which would enhance female empowerment in sexual encounters. When some of the barmaids were asked whether they felt ashamed carrying condoms in their wallets, the following response was given: *"It is a matter of life or death. You either decide to feel ashamed and die tomorrow, or you do not care what people say about you and live longer"*. Most participants in our focus groups, key informants, and opinion leaders also supported this view by saying: "*Nowadays, people do not feel ashamed of having condoms in their pockets*".

There is no doubt that the advantages of condom use have led to a situation where some people, particularly the youths and commercial sex workers, are now becoming increasingly courageous in facing the stigma that previously scorned those who carried condoms openly. An adolescent male focus group participant expressed his views by saying:

> "The girls know what they are doing. Maybe others perceive it negatively but I have seen several times girls carrying condoms with them to schools. Others go with them in disco halls. Sometimes they have many packets and are sometimes ready to help others protect themselves. Those who perceive it negatively usually say such girls are crazy or that they are prostitutes. But for me, such girls are courageous, clever and know what they are doing".

Barmaids' fear of men is only one half of the picture. Some men who go to drink in bars are also very suspicious of the sero-status of barmaids. One male bar visitor told us the following:

> "I never trust barmaids or 'Malaya"(commercial sexual workers). Usually, they are after money and because of that, they sleep with anyone who pays them well. I personally use a condom whenever I have sex with them. I will indeed be surprised if there are any men who sleep with these women without condoms given the seriousness of AIDS in this area".

Owners of hotels and guesthouses held similar views about the increase in condom use. Most of them explained that customers who spent nights or paid short visits in their hotels/guesthouses with sexual partners usually used condoms that were either at their disposal in their guest rooms or came with their own condoms.

Voluntary counseling and testing for HIV

Our findings suggest that the number of volunteers in counseling and testing for HIV in Bukoba town is increasing. Information derived from the Bukoba AIDS Information Center and different NGOs working with testing and counseling activities indicates that the number of volunteers is increasing. When asked whether people came for voluntary counseling and testing, one of the project managers responded as follows:

> "People are aware. Youths who are healthy come to test for HIV infection A few days ago, in one week alone, 48 youths came to test voluntarily. They also volunteered to be trained as counselors".

As explained earlier, some Catholic and Protestant churches in the area are increasingly advising people to seek counseling and to test for HIV before their marriages are officiated in the church. They usually demand certificates that confirm that couples have been tested and that each individual is HIV negative. Although this policy has caused uproar both within and outside the church, it is nevertheless leading to a situation where those who want the blessings of the clerics in their marriages have to comply. However, the fear of testing positive has also led to a situation where some people prefer to marry traditionally, outside the church.

Despite people's fears of testing positive, according to the NGOs that provide such services, the demand for counseling services seems to be increasing. At the time of this study, there were approximately 70 community counselors and 40 peer educators, of whom 20 worked in secondary schools, operating in the Bukoba urban area alone. According to the district supervision report on HIV/AIDS/STD activities for 2000/2001, the Bukoba

regional government hospital had 32 counselors by June 2001.

We also noted the presence of a variety of both old and new pre- and post-test clubs/associations that operate in the area. Some of these clubs are made up of people who are living with AIDS (PLWA), and others have members who are HIV positive and HIV negative. Those who are HIV positive appear to have accepted it and talk openly about it. In both clubs, people discuss openly how to live positively with AIDS. They also share strategies and experiences of fighting AIDS and how to live longer with HIV/AIDS. Some also educate others who are virus free about how to protect themselves from HIV infection.

Our participation in one meeting of a post-test club revealed that the majority of the members of this club were people living with HIV. Discussions with the 14 members of this club dealt with how to cope with life, potential income generating activities, advice about preferred medicines for opportunistic infections (i.e. fungal infection, skin rashes, and other skin diseases), and where to obtain them at affordable prices. Discussions also included protecting each other during sexual acts even when both partners are positive, how to convey their situation to children and relatives, and preparing themselves for the worst outcome (i.e. death). The discussions were powerful and helped members a great deal to lead an ordinary and normal life. Most participants explained to us how they acquired HIV, how they learned that they were HIV positive, their experiences and reactions, and what has kept them strong, positive and alive up to now.

We also had in-depth discussions with some HIV positive individuals who are leaders of such clubs. One female leader told us that she had been living with HIV since 1985. She decided to test her sero-status after the death of her husband. She gave the following narrative:

> "After noting that the results were positive, I knew what had killed my husband. I looked at my children who were still young by then. I cried severely that day. Then I said to myself, 'I am not going to die from this disease and leave my young, beautiful children alone.' I then decided to undergo more counseling. After that I decided to be open about my fate because I knew I would get advice from different people on how to live positively with AIDS. This helped me a lot. I received a lot of moral/psychological and material support from different people, friends and relatives. This gave me strength. I have now lived 16 years with the virus and have managed to raise my children well. I have also traveled to different countries where I have not only attended AIDS conferences but have also met other people living with AIDS from other countries. We exchange ideas through letters and newsletters. This has also enhanced my courage and strength. It is this experience that I share with my colleagues in meetings. I also share with other people my knowledge and experience of living with HIV through poetry. My message to the members of PLWA is that if they accept their fate they can live a normal and happy life like other people. Being infected does not necessarily mean death. To those who laugh at people who are HIV positive, my message to them is summarized in a poem I wrote recently titled "AIDS is a dangerous secret, the one who has it does not know".

Discussion

In general, the findings of this study indicate that the Bukoba urban area is no longer the same. The presence of a severe AIDS epidemic in the town is forcing people to change not only their sexual behavior but also some traditions and customs that they consider as high-risk for HIV infection. The findings indicate that condoms are more accepted today than before by both women and men and that the stigma against those who use them is fading. Most youths who are sexually active understand the importance of condoms in protecting them against pregnancy, AIDS, and other sexually transmitted infections. Adolescent school children are also aware of condoms and their use, and it is possible that condom use, abstinence, and other methods of family planning contribute to declining female school dropout rates due to pregnancy. These findings support our previous data based on a cross-sectional study that observed some behavioral changes. The study revealed an increase in condom use from 23.1% ($N = 546$) in 1993 to 30.9% ($N = 1291$) in 1996 ($p = 0.0001$) (Kwesigabo, 2001). If condom use is consistent among adolescent females, one can associate it with the significant declining trend of HIV infection in this area that has been reported among females aged 15–24 years. Condom use is increasingly popular among both barmaids and adult males who seek barmaids as casual sexual partners. Findings also show that excessive drinking, with its associated behavior of sex networking, is increasingly becoming unpopular. There are also indications that both awareness and the actual practice of voluntary HIV counseling and testing are increasing, albeit slowly. People living with AIDS are increasingly coming out to talk openly about their situation and the epidemic. The above-mentioned behavioral changes are much more evident today than in our previous studies.

A variety of traditions, customs, and practices are also changing. For example, multi-partnered sexual relationships, polygamy, and extramarital affairs that were very common in the past are declining. The practices of widow inheritance and sex with in-laws are becoming obsolete. The findings suggest that the number of people

who are "zero-grazing" (sticking to one partner) or abstaining from sexual encounters is increasing. Catholic and Protestant churches are increasingly requiring couples to test their HIV sero-status before their marriages are officiated in the church. Those who adhere to this policy look for partners who are perceived honest and trustworthy. As a result, there are cases of late marriages due to fear of HIV/AIDS. Parents would rather tolerate unmarried adult children than see their children getting married and dying early from AIDS. On the other hand, some people tend to marry early in order to start their sex life in marriage and to reduce the risk of HIV infection before marriage.

While AIDS is forcing people to be faithful, abstain from sex, stick to one sex partner, or become strong in their marriages, in some cases, the epidemic is also leading to separation, divorce, and domestic violence. If AIDS is present in a family, women are more likely to be accused of bringing the virus into the house. Wives are also more likely to be assaulted if they enforce condom use or deny sex to their husbands for suspecting them of being promiscuous. Unlike in the past, men today are more likely to separate/divorce/abandon their wives if they appear to be unfaithful. Divorce and separation, processes that were highly culturally condemned in the past, are now becoming common because of HIV/AIDS. Mukiza-Gapere and Ntozi (1995b) have observed a similar situation in Uganda. Fear of HIV infection is forcing sexual partners to monitor each other. For example, as Mukiza-Gapere and Ntozi (ibid) have noted in Uganda, in polygamous marriages, co-wives cooperate in monitoring their husband to make sure he has not *"turned out of the ring"*. The wives also guard each other in an effort to prevent any one of them from bringing the HIV virus into their cobweb of sexual relationships.

The findings show that the habit of excessive drinking among men is declining. Whether this is due to AIDS or some other factors it is a subject of further research. One can also argue that it is not only HIV/AIDS that has forced men to change their drinking behaviors, but also increasing poverty is contributing to this change. Poverty has intensified in the area leading to a situation where some people cannot afford to pay for alcoholic drinks. At the same time one would expect that increasing poverty could also increase the number of women who are desperate and could resort to survival sex as a source of livelihood. Although we do not have specific statistics to enable us to argue either way, in-depth interviews suggest that the fear of HIV infection is forcing some women to opt for alternative forms of generating income rather than entering into the commercial sex industry. More studies ought to be carried out in order to examine the impact of poverty and the gender dimension of coping strategies in the era of HIV/AIDS in sub-Saharan Africa.

HIV/AIDS has not only changed marriage practices and patterns of sexual networking, it has also overhauled the customs and practices associated with death, bereavement, and mourning. Since many people have been dying, funeral services/sermons are quick and short. Rituals that are performed after burials have been minimized and the traditional practices of shaving and of women staying indoors are disappearing slowly.

Although the general findings suggest these positive behavioral changes, it is also important, however, that information about sexual behavior is not over interpreted (Kamali, 2000). The numbers of subjects that reported some of the behavioral changes that have been recorded were too small to warrant us to make solid conclusions. It is also important to note those behavioral changes or changes in people's norms and values, traditions or customs are social processes that can either go back and forth, or are positive or negative. While on one hand, we see these positive trends; on the other hand, we continue to see people who are resistant to change. For example, although it is true that condoms are easily available and that most people, particularly the youth, are using them, it is also true that not all members of the society condone the use of condoms in preventing HIV infection. The government's policy on condoms is unclear and very ambivalent. On the one hand, billboards promoting the use of condoms can be seen everywhere in the town of Bukoba and other parts of Tanzania. All health officials teach people the importance of condoms, and government health facilities provide free condoms. But the same government prohibits the distribution of condoms in schools and the teaching of sexual and reproductive health education. Students who are caught with condoms in the school environment risk suspension or expulsion. This is a clear indication that we still have some conservative people in the Tanzanian society who continue to fight against condoms. The same thing can be noted in regard to the stigma against condoms. On the one hand, the stigma is slowly fading away, but on the other hand and to some people, it is still there. The fact that condoms are popular and that people carry them in their wallets and use them does not necessarily mean that they are constantly used. Some informants stated that condoms are more likely to be used and accepted in casual sexual unions than in permanent and stable unions. Several studies carried out in Tanzania and elsewhere in sub-Saharan Africa have also recorded a similar response (Asiimwe-Okiror, 1997; Kwesigabo, 2001; Kapiga & Lugalla, 2002). It is also believed that condoms can be used occasionally in stable unions if one partner has a sexually transmitted disease, suspects the other of having a disease, or when the female partner is having her period. How people perceive the meaning of sex determines a great deal how they perceive condoms and their use. It is obvious that beliefs that associate sex with

procreation rather than recreation are still persisting in Bukoba. Our previous study in the area observed the presence of a cultural belief that proper sexual intercourse must involve the deposition of an ejaculation into the vagina (Lugalla et al., 1999). With such beliefs in place, it is likely that some people will continue to resist condom use.

Equally true is the idea that many people are becoming open about HIV/AIDS and are prepared to talk about it. At the same time, however, we also continue to see the dominance of silence in certain social groups particularly adults, both male and female. Such findings should not be seen as conflicting and contradictory, but rather as evidence for the fact that processes of behavioral change are not easy. Change may take years, and not all people internalize interventions in the same way and decide to change at the same time. In view of this, it is possible that even the decline in HIV infection might decrease in some groups but at the same time be pushed to marginalized vulnerable social groups like widows, orphans and street children.

How, then, can one explain the behavioral and cultural changes that are taking place? What kinds of factors have influenced such changes? In other words, what has been happening in Bukoba that has led to these behavioral and cultural trends? Our findings have identified at least the following possible determinants of sexual behavioral and cultural change that can be linked with the observed trends of HIV infection in the Bukoba urban district.

The first one is what we have called the "Agony of AIDS". HIV/AIDS has been one of the major public health problems not only in the Bukoba urban area, but also in the entire Kagera region and Tanzania as a whole. The epidemic has destroyed families, communities, and the normal patterns of economic production and social reproduction, like elsewhere in sub-Saharan Africa. AIDS has touched almost every family. There are hardly any families in this area that have not lost a close relative, member of the family, or friend. People have lost brothers, sisters, parents, children and other close relatives as a result of the AIDS epidemic. Due to this, the epidemic has created a lot of powerless and helpless orphaned children and widows. To many people, AIDS is a reality rather than an abstract threat. Most people young and old, male and female are now aware of HIV/AIDS and its devastating consequences. Almost everyone has either seen or nursed an AIDS patient. Therefore, many people know what it means to suffer from this disease. They know how painful to the body AIDS is and how both the sick and the cost of funerals drain meager family resources. This makes people fear not only death, but also death due to AIDS. Traditionally, the Bahaya do not have a public cemetery for burying their loved ones. They bury their dead on their immediate farms and around their houses. The presence of graves in front of the doorsteps of their homes presents a powerful message and warning about AIDS. This proximity to dead love ones offers a constant visual reminder of the specter and agony of the disease that threatens all who are still living. As a warning to others, the people of Bukoba usually say, *"If you do not know what death means, peep into a grave"*. In the era of HIV/AIDS, this is not only a proverb but also a powerful public health message and a reality. It is true that awareness alone is not enough to make people change their behavior. The reported changes in behavior in our study are likely to have resulted from a combination of increased awareness and the agony of AIDS that, in Kagera, has become a powerful internalizing agent. It is obvious that the emotive component signal a demand for knowledge about the disease and how to avoid it. This demand seems to be present on both the individual and community level. Previous reports from KARP have focused on the role of language in the process of understanding the disease. Mutembei (2001) and Mutembei et al. (2002) showed how people's construction of new terms, with help of which they could communicate and reflect about the disease, helped them to reach awareness about the seriousness of the situation.

Second has been the role and impact of health education and the adoption by the government of special policies aimed at addressing HIV/AIDS. A variety of health educational activities implemented by government agencies as well as Non-Governmental Organizations (NGOs) have been taking place in Bukoba during the last decade of the HIV/AIDS epidemic. For example, the government decided in the early 1990s to adopt a special policy that allowed Kagera alone to introduce a curriculum on "Education against AIDS" in primary schools. The Institute of Curriculum Development, in collaboration with Kagera Region Education Inspectors, developed this curriculum. They also trained two teachers from each school to teach this curriculum. The curriculum focused on AIDS and its symptoms, how it spreads, what risk behaviors and risk environments exist, how to protect oneself from getting infected, and how to provide care to AIDS patients. Although it never promoted condom use, it provided basic information that helped young children not only to understand AIDS, but also how to avoid being infected with HIV. There is no doubt that this kind of education must have increased the level of knowledge and awareness about HIV/AIDS among elementary school children.

Third is the role-played by specific national policies. Since the onset of the epidemic, the National AIDS Control Program (NACP) has invested a great deal in Kagera in order to control the further spread of HIV/AIDS. There is a Regional AIDS coordinator (RAC) assisted by District AIDS coordinators (DACs). NACP

has also been instrumental in publishing and distributing a variety of information materials to the entire region. They organize multiple seminars, workshops, and public meetings and have used these forums as avenues for promoting health education, condom use, and the distribution of free condoms. These interventions have been of great help in raising people's awareness and consciousness about AIDS. Our findings have shown indirect evidence for increased condom use as reported by the study participants. However, more efforts need to be made to educate parents and school managers on the need for school youth to learn openly about sexuality and to protect themselves from unwanted pregnancies as well as sexually transmitted infections including HIV. This may require specific national policies to be reviewed from time to time. These government initiatives have always been complemented by activities carried out by a variety of NGOs.

Since the advent of the epidemic, many non-governmental organizations, both local and foreign, have become active in this region. Part of the focus of these NGOs has been on social work-related activities (i.e. health care, taking care of orphans, and community-based care of those who have full blown AIDS), but most of them have also been very instrumental in implementing a variety of intervention programs. These organizations have had a major role in training community counselors, and some of them have also set up their own counseling and HIV testing centers. They provide health education campaigns against HIV/AIDS either by organizing public meetings or by printing and distributing a variety of information, education, and communication (IEC) material about the epidemic. These organizations have trained peer educators, some specifically oriented toward secondary schools and other vulnerable social groups. Besides educating people about how HIV/AIDS is spread and how to protect themselves, these organizations also have promoted condom use (social marketing) and some of them have distributed free condoms. As a result of the activities of these NGOs, HIV testing and counseling services are available, and the majority of the people have easy access to national health messages via public forums, seminars, billboards, and through schools.

Finally, is the role of the research process itself in influencing social change The presence of a severe AIDS epidemic in Kagera did not attract AIDS NGOs alone, but also brought in local as well as international researchers who decided to begin to understand the dynamics of the epidemic. The Kagera AIDS Research Project (KARP) started in 1987 with population based epidemiological studies designed to understand the magnitude of the problem, the risk factors, and the consequences of the epidemic. In the early 1990s, the World Bank also initiated a major study in the area focusing on the economic impact of the epidemic. At the same time, most NGOs that came to Kagera to carry out activities on AIDS began their work with their own social surveys that provided them with baseline information. There was a time at the beginning of the epidemic when researchers and service providers from different institutions were meeting or passing each other in the villages and urban areas of the region in the course of doing research and providing services.

While most other research studies were temporary, KARP is a longitudinal study. It is one of the first major research projects on AIDS in Tanzania and the only one that continues its studies in Kagera today. As years passed, the nature of KARP and its study components changed both in form and in content. KARP started as a multidisciplinary research project with experts from epidemiology and microbiology gradually expanding the methodological mix to include the disciplines of sociology, medical anthropology, linguistics, and literature. This interdisciplinary character has assisted KARP in understanding the dynamics of HIV/AIDS in the area. KARP has been able to contextualize the AIDS epidemic in the region with a social and historical perspective. Many social, economic, political, and cultural factors have been identified, and KARP has described how these and other factors are contributing simultaneously to shaping the dynamics of AIDS in the region (Lugalla et al., 1999).

The role of AIDS research in Kagera can be described in the following ways. First, by identifying HIV risk factors, behaviors, customs, and practices, they have been instrumental in assisting NGOs and the government in planning and charting out their intervention programs. Secondly, the findings have been used by the government (NACP) in designing AIDS policies not only for Kagera, but also for Tanzania as a whole. Thirdly, by using participatory research methodologies in collecting data, KARP and other research studies indirectly have provided AIDS interventions. When researchers interact frequently and for a long period of time with members of the community on a specific topic (AIDS), people learn more about the subject matter of the research. They are more likely to become inquisitive about the results, internalize the message, and feel that they are part of possible change. This may hopefully influence their way of thinking and behaving. In this context, research studies can become potential intervention programs. The KARP studies have included activities such as feed-back to the community including discussions about possible interventions (Killewo, 1994; Lugalla, 1997), arranging workshops on intervention strategies together with the NGO's (Workshop report), and initiating research training courses on the evaluation of interventions for those responsible for the planning of such activities in the region. The pre- and post-test counseling offered in connection with blood

sample collection is also a form of voluntary counseling and testing with possible intervention effect.

Conclusion

The nature of the AIDS epidemic in Kagera in general and Bukoba in particular is changing. The indication that the prevalence and incidence of HIV is decreasing in the general population is encouraging and gives hope. However, further studies are needed to find out if the epidemic is being pushed towards marginalized social groups. The first lesson learned from the Kagera experience is that the situation of HIV/AIDS in sub-Saharan Africa is not completely hopeless. The declining trends of HIV infection in the area and the changing trends in behavioral aspects associated with AIDS confirm that even severe epidemics like AIDS can be brought under control. Second, what has taken place in the Kagera region is equally applicable elsewhere. What is needed is the adoption of interventions that are pragmatic, realistic, and participatory and conform to local people's norms, values, and socio-economic conditions. The struggle against AIDS in the Kagera region has been multifaceted and multidimensional. It has been a result of the consulted joint efforts of a variety of stakeholders such as the local people, foreign NGOs collaborating with local ones, government commitment, the pragmatic and realistic approaches of religious institutions, and research studies involving foreign and Tanzanian researchers. It is this joint effort and approach that is bringing these encouraging positive results. We strongly believe that this can be applied elsewhere and at any time. Therefore, other places with a severe AIDS epidemic have a lot to learn from this experience. What Kamali et al. (2000) have observed in Uganda is also equally true for Bukoba in Tanzania. The burden of HIV associated morbidity and mortality remains unacceptably high in the Bukoba area. Simply monitoring the progression of the epidemic is not enough. It is important to increase efforts that focus on mitigating the impact of the epidemic in general, but particularly on vulnerable social groups like widows, orphans, and street children. Although changes in behavior are beginning to occur, not all people are changing. It is therefore important that intervention activities continue, and that attempts be made to direct the interventions to those people who appear to be conservative and resistant to change. There is evidence from our findings that youth are changing their behaviors more quickly than adults. Future efforts must pay attention to searching for ways in which more adults can be encouraged to adopt attitudes that are pragmatic and realistic in terms of the epidemic. The people of Kagera are still at risk for HIV infection, and therefore, monitoring infection and behavior trends must be continued. We also need to acknowledge that processes of social change and development have a tendency to create new contradictions. More studies are therefore required in order to understand what new issues are emerging as a result of the observed changes. Examples include: how HIV/AIDS has affected traditional patterns of sexuality, child rearing, and socialization; how agony, fear, and suspicion influence social relations and quality of life for people; and how interventions are addressing equity issues in terms of gender and poverty. The list is not exhaustive, but the questions cited here are crucial for the Kagera AIDS Research Project to answer in future research studies.

Acknowledgements

We wish to convey our sincere acknowledgements and thanks to the Swedish International Development Agency, Department of Research Cooperation (SAREC) for funding the research activities of the Kagera AIDS Research Project (KARP) that included the fieldwork for this study. We would also like to acknowledge the support of the KARP team members based in Kagera for assisting us in collecting these data. A variety of government officials at the regional and district levels assisted us a great deal during our fieldwork. We are very thankful to them all.

References

Alary, M. (2002). Decline in the prevalence of HIV and sexually transmitted diseases among female sex workers in Contonou, Benin, 1993–1999. *Acquired Immune Deficiency Syndrome*, *16*, 463–470.

Asiimwe-Okiror,, G. (1997). Change in sexual behavior and decline in HIV infection among young pregnant women in urban Uganda. *Acquired Immune Deficiency Syndrome*, *11*, 1757–1763.

Baeten, J. M. (2000). Trends in HIV-1 incidence in a cohort or prostitutes in Kenya: Implications for HIV-1 vaccine efficacy trials. *Journal of Acquired Immune Deficiency Syndrome*, *24*, 458–464.

Benefo, K. D., & Takyi, B. K. (2002). Mass media effects on AIDS knowledge and sexual behavior in Africa with special reference to Ghana. *International Journal of Sociology and Social Policy*, *22*(4–6), 77–99.

Berger, P., & Luckmann, T. (1967). *The social construction of reality. A treatise in the sociology of knowledge*. New York: Anchor books.

Bowser, B. P. (2002). The social dimension of the AIDS epidemic. *International Journal of Sociology and Social Policy*, *22*(4–6), 1–20.

Fylkesnes, K. (2001). Declining HIV prevalence and risk behaviors in Zambia: Evidence from surveillance and population-based surveys. *Acquired Immune Deficiency Syndrome*, *15*, 907–916.

Ghys, P. D. (2002). Increase in condom use and decline in HIV and sexually transmitted diseases among female sex workers in Abidjan, Cote d'Ivoire, 1991–1998. *Acquired Immune Deficiency Syndrome*, *16*, 251–258.

Goffman, E. (1963). *Stigma. Notes on the management of spoiled identity*. New Jersey: Prentice-Hall.

Heguye, E. (1995). Young People's Perception of Sexuality and Condom Use in Kahe. In: Knut-Klepp, Knut-Inge, Biswalo, Paul, & Aud, Talle (Eds.), Young people at risk: Fighting AIDS in Northern Tanzania (pp. 107–120). Stockholm, Sweden: Scandinavian University Press.

Kamali, A., et al. (2000). Seven-year trends in HIV-1 infection rates and changes in sexual behavior among adults in rural Uganda. *Acquired Immune Deficiency Syndrome*, *14*, 427–434.

Kapiga, S. H., & Lugalla, J. L. P. (2002). Sexual behavior patterns and condom use in Tanzania: Results from the 1996 demographic and health survey. *AIDS Care*, *14*(4), 455–469.

Killewo, J. Z. J. (1994). Epidemiology towards the control of HIV infection in Tanzania with special reference to the Kagera Region. *Umea University Medical dissertations,* New Series. No. 421, Umea, Sweden.

Killewo, J. Z. J., Nyamuryekunge, K., Sandstrom, A., Bredberg-Raden, U., Wall, S., Mhalu, F., & Biberfeld, G. (1990). Prevalence of HIV-1 infection in the Kagera region of Tanzania: A population-based study. *Acquired Immune Deficiency Syndrome*, *4*, 1081–1085.

Killewo, J. Z. J., Sandstrom, A., Bredberg-Raden, U., Mhalu, F., Biberfeld, G., & Wall, S. (1993). Incidence of HIV-1 infection among adults in the Kagera Region of Tanzania. *International Journal of Epidemiology*, *22*(3), 528–536.

Kitzinger, J. (1995). Qualitative research: Introducing focus groups. *British Medical Journal*, *311*, 299–302.

Konde-Lule, J. K. (1997). Trends in attitudes and behavior relevant to AIDS in Ugandan community. *East African Medical Journal*, *74*, 406–410.

Kwesigabo, G. (2001) Trends of HIV infection in the Kagera Region of Tanzania 1987–2000. *Umea University Medical dissertations,* New Series No. 710, Umea, Sweden.

Kwesigabo, G., Killewo, J., Godoy, C., Urassa, W., Mbena, E., Mhalu, F., Biberfeld, G., Wall, S., & Sandstrom, A. (1998). Decline in the prevalence of HIV-1 infection in young women in the Kagera Region of Tanzania. *Journal of Acquired Immune Deficiency Syndrome and Human Retrovirology*, *17*, 262–268.

Kwesigabo, G., Killewo, J. Z. J., & Sandstrom, A. (1996). Sentinel Surveillance and a cross-sectional study on HIV infection prevalence: A comparative study. *East African Medical Journal*, *73*, 298–302.

Kwesigabo, G., Killewo, J. Z., Urassa, W., Mbena, E., Mhalu, . F., Lugalla, J. L., Godoy, C., Biberfeld, G., Emmelin, M., Wall, S., & Sandstrom, A. (2000). Monitoring of HIV-1 infection prevalence and trends in the general population using pregnant women as a sentinel population: 9 years experience from the Kagera Region of Tanzania. *Journal of Acquired Immune Deficiency Syndrome and Human Retrovirology*, *23*(5), 410–417.

Lugalla, J. L. P. (1997). The availability and acceptability of intervention strategies against HIV/AIDS infection in the Kagera Region of Tanzania. *Internationales Afrika Forum*, *4*, 355–366.

Lugalla, J. L. P., Emmelin, M. A. C., Mutembei, A. K., Comoro, C. J., Kwesigabo, G., Killewo, J. Z. J., Sandstrom, A., & Dahlgren, L. G. (1999). The social and cultural context of HIV/AIDS transmission in Kagera Region, Tanzania. *Journal of Asian and African Studies*, *34*(4), 378–402.

Lunt, P., & Livingston, S. (1996). Rethinking focus groups in media and communications research. *Journal of Communications*, *4*, 79–98.

Mukiza-Gapere, J., Ntozi, J. P. M. (1995a). Impact of AIDS on family and mortality in Uganda. *Health Transition Review*, *5* (Suppliment), 191–200.

Mukiza-Gapere, J., Ntozi, J. P. M. (1995b). Impact of AIDS on marriage patterns, customs, and practices in Uganda, *Health Transition Review*, *5* (Suppliment), 201–208.

Mutembei, A. K. (2001). Poetry and AIDS in Tanzania: Changing metaphors and metonymies in Haya oral traditions, CNWS, Vol. 101. Netherlands: Leiden.

Mutembei, A., Emmelin, M., Lugalla, J., & Dahlgren, L. (2002). Communicating about AIDS-changes in understanding and coping with help of language in urban Kagera, Tanzania. *JAAS*, *37*, 1–16.

Ng'weshemi, J. Z. (1996). Changes in male sexual behavior in response to the AIDS epidemic: Evidence from a cohort study in urban Tanzania. *Acquired Immune Deficiency Syndrome*, *10*, 1415–1420.

Orubuloye, I. O., Caldwell, P., & Caldwell, J. C. (1994). *Commercial sex workers in nigeria in the shadow of AIDS. Health Transition Working Paper no. 20*. Canberra: The Australian National University.

Patton, M. Q. (1987). *How to use qualitative methods in evaluation*. London: SAGE Publications.

Taha, T. E. (1996). Reported condom use is not associated with incidence of sexually transmitted diseases in Malawi. *Acquired Immune Deficiency Syndrome*, *10*, 207–212.

Talle, A. (1995). Bar workers and the border. In: K. Knut-Inge, Biswalo, P. M., & A. Talle (Eds.), *Young People at Risk: Fighting AIDS in Northern Tanzania*, Scandinavian University Press, Oslo-Stockholm-Copenhagen-Boston, (pp. 18–30).