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ATTITUDES TOWARD HIV/AIDS AMONG ZAMBIAN HIGH SCHOOL STUDENTS

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Introduction.

It might be expected that when a stigmatized disease becomes endemic in a particular society, the social stigma toward people with that disease would decline. But this has not been the case throughout much of sub-Saharan Africa where two decades after the visible emergence of AIDS, stigma toward and discrimination against persons living with HIV remain strong. In Zambia today, mean life expectancy has dropped from a high of fifty-two years in 1980 to thirty-seven years in 2005 (World Food Programme 2005). One-sixth of all adults (16.5%) in the nation are HIV-positive (World Food Programme 2005), a fact which the Zambian government during the 1980s and early 1990s was very reluctant to accept (Moszynski 1999). There are about a million persons living with HIV/AIDS, and an estimated 89,000 deaths each year in the country (*The World Factbook* 2005).

Hundreds of thousands of children have become orphaned by parents who died from AIDS. An estimated 15.1 percent of all children under the age of fifteen in Zambia are orphans (Kaimana 2005) Recent declines in infant and child mortality rates have been reversed due to AIDS in parts of Africa. Zambia's infant mortality rate increased 30 percent by 1996, and is projected to double by 2010 (Foster 1998). Chronic childhood malnutrition and infant mortality are high at 88.3 deaths per 1,000 live births (*The World Factbook* 2005). In the early years of the epidemic, wealthy and middle-class Zambians were more likely to become HIV-infected than poor Zambians. However, as the disease has spread into all segments of Zambian society, into the shanty compounds of urban Zambia and into the rural villages, poverty has significantly exacerbated the spread and impact of HIV. Poverty caused by having AIDS among

survivors leads to a worsening of children's health, as well as increased vulnerability of adolescent survivors to HIV infection (Foster 1998).

Nevertheless, the disease continues to impact those who have specialized professional training in key sectors of the Zambian economy, such as banking, teaching, and management. While many companies in urban Zambia insist on pre-employment medical examinations, often including HIV testing, few have developed policies relating to their mandatory test results (Baggaley, *et al.* 1995).

The AIDS epidemic has become an ever-present reality for Zambians. And yet, AIDS is rarely discussed. While social conditions are beginning to change with the advent of antiretroviral medications (ARVs), relatively few Zambians still have ever been tested for HIV. Most HIV-infected Zambians remain unaware of their serostatus, unless they have begun to develop end-stage symptoms. When death arrives, the true nature of their illness is infrequently discussed openly by family members. Obituaries and death notices in Zambian newspapers very rarely mention the cause of death if it is HIV-related. When AIDS is discussed, it is often talked about within a moralistic, fundamentalist religious framework.

Zambia has been singled out as one of twelve African nations that will receive significant funding from the United States through the President's Emergency Plan for AIDS Relief (PEPFAR). The US $15 billion dollar plan during 2004-08 will include testing and ARV treatment, HIV prevention (with a strong emphasis on abstinence prevention), and AIDS care (especially for "vulnerable children"). However, PEPFAR has so far provided ARV treatment for only 22,000 Zambians by March 2005 (PEPFAR 2005). Social stigma is an important factor that has inhibited many Zambians from

seeking HIV testing and free ARV treatment (Banda 2005; Zambia News Agency 2005a, 2005b).

This chapter describes the attitudes toward HIV/AIDS and people living with HIV/AIDS among 204 male and female public high school students in Lusaka, Zambia. It is part of a larger intervention study carried out by the authors to assess the usefulness of a particular approach in decreasing risky sexual behaviors among sexually active Zambian high school students. The study was carried out during 1997-2000, and represents a time period before ARV therapy was introduced beginning in 2004, along with a variety of other PEPFAR-funded programs.

The Zambian Social Setting.

Zambia is a nation that has undergone major social transformations during the twentieth century. There are seventy-three tribes or ethnic groups in the nine provinces of Zambia. The major ethnolinguistic groups are the Bemba, Nyanja, Tonga, Lozi, Nsenga, Chewa, Tumbuka, Ngoni, Kaonde, Lunda, and Luvale (Burdette 1988, Hakkert and Wieringa 1986, Siatwinda 1984). Today, English is the language used in the media, schools, and government. Other languages are widely spoken though, especially Bemba in the north, Nyanja in Lusaka (the capital and largest city) and the east, and Lozi in Livingstone and the west. Social stratification has been rendered quite complex with the advent of sharp class distinctions, especially in the urban areas, of increased regional identification (e.g., westerners, northerners), of the presence of other non-Zambian Africans (including in the 1990's an influx of refugees from Zaire, Angola, and Mozambique, and in the early 2000’s an intensification of new refugees from Angola

and the Democratic Republic of the Congo) and non-Africans (especially Asian Indians and British expatriates) in Zambia, and of massive migration patterns which has destabilized tribal residence patterns. Most (86%) Zambians live below the poverty line, while the highest income tenth of all households earn twenty-one times the income of the lowest income tenth (*The World Factbook* 2005).

Ethnographic research in Zambia has included several important studies. Colson's (1949, 1958, 1974, 1991) body of work on the Tonga, Turner's research on the Ndembu (1957, 1967), Richards' work on the Bemba (1939, 1956), and Gluckman's (1955) study on the Lozi have all become classics in anthropological literature. However, the ethnographic record is uneven, in that there is superb data on some tribes, but poor or little data on others. In recent years, there has been an increase of excellent urban ethnographies in Zambia, including Hansen's (1989) study of Zambian inequality in the workplace, Hansen's (1996) study on housework in Lusaka, and Schuster's (1979) study on professional women in Lusaka.

The extended family and the clan have traditionally been central to Zambian social life. Matrilineal descent has been common in southern Zambia (Colson 1958), while patrilineal descent has been common throughout most of the rest of Zambia. Today, the extended family is still important, although transformed in certain ways. The values placed on strong obligations to kin are maintained despite the breakup of the large co-residential households of relatives characteristic of the extended family in the rural areas (Burdette 1988). Bridewealth, traditionally a payment to the bride's father uniting the two families together and serving as a means of compensation for the loss of her labor power, continues in modern Zambia, even among persons belonging to tribes

which formerly did not emphasize the practice (Epstein 1981, Schuster 1979). Transient marriages and the absence of government assistance ensure the survival of blood kin ties as the major form of social and economic support for both groups.

Polygyny, having and supporting two or more co-wives, in traditional Zambia was common and widely preferred. Today, the practice is increasingly less frequent, occurring among 18 percent of Zambian married women (Gaisie, *et al.* 1993), especially in rural areas. But the common pattern of married men having a mistress or paying sex workers may serve a similar sociological function (Schuster 1979). A polygynous household where the husband and co-wives are all HIV-negative, and where sexual activity stays within that household, is not at greater risk for HIV than a monogamous and faithful couple that are HIV-negative. However, a marriage with a rotating mistress or access by the husband to sex workers who do not routinely use condoms is at high risk for HIV infection.

Many women in urban Zambia have found it necessary to take marginal positions as traders (Schuster 1982). Squatter settlements have developed throughout urban Zambia. Residents in these settlements are continually threatened with eviction, receive no government services, and live in a habitat with no basic infrastructure (Mulwanda 1989).

Zambia's population increased from 2.6 million in 1950 (GeoHive 2003) to an estimated 11.3 million in 2005 (*The World Factbook* 2005). The rate of population increase has slowed to 2.12 percent each year (*The World Factbook* 2005) because of the increased mortality rate and decrease fertility rate brought about by the AIDS epidemic, and it is likely (based upon prior projections) that there would have been

about a million more Zambians by 2005 if AIDS had never occurred. While seroprevalence data is conflicting, varying substantially between antenatal clinic studies and population-based studies (WHO/UNAIDS 2003), one study indicates alarmingly high HIV rates among Zambian adolescents with older female adolescents (18-19 years old) at 22.6 percent, younger female adolescents (15-17 years old) at 12.3 percent, and male adolescents (15-19 years old) at 4.5 percent (Fylkesnes, *et al.* 1998).

Sexually transmitted diseases (STDs) represent the third most common cause of adult outpatient attendance, with an estimated 300,000 new cases per year. Other common diseases reported to the Zambian Ministry of Health are malaria, diarrhea, and respiratory infections, including tuberculosis. The AIDS crisis has had a devastating effect upon the health, economic and social infrastructure of Zambia (Foster 1998; Mutangadura, *et al.* 1998; Timaeus 1998). The number of children surviving on their own in the streets of Lusaka continues to grow (Baggaley and Needham 1997, Daley 1998, Hastings 1999). Indeed, the HIV epidemic “is having a devastating impact on Zambia’s children who are being robbed of guidance, emotional nurturing and development and are often left alone to fend for themselves on the streets” (World Food Programme 2005:1).

There have been a number of studies conducted among Zambian adolescents focusing on their sexual behavior. Pillai and Barton (1999) found in a study of 390 females at seven schools, their inability to say “no” to their boyfriends was associated, as might be expected, with sexual activity. In a study of urban Zambian youth, Kalunde (1997) found that sexual matters are discussed with close friends of the same sex and peer group, as with cousins who are of the same age. Grandmothers, but never

parents, sometimes discuss sex with their granddaughters. Many do not regard AIDS as a threat to their lives, and do not even consider it as a hindrance to sexual relationships. Other STDs are taken even more lightly, since they are seen as curable.

However, the fear of pregnancy is very real for many sexually active female adolescents (Webb 2000). An estimated two-thirds of unwanted pregnancies end in unsafe abortions. Factors that lead to an abortion are the boyfriend's unwillingness to accept paternity or assist financially, the stigma attached to pre-marital pregnancy, and the desire to stay in school. Webb (2000) found that about 40 percent of young women who would obtain an abortion would carry it out either by themselves or with the help of other non-medical friends. The most popular methods of abortion are overdosing on chloroquine, taking traditional herbal medicines, or ingesting washing powder. In a community-based study in Western Province, Zambia, it was learned that more than half the abortion-related deaths were of schoolgirls (Koster-Oyekan 1998). Although abortion is legal in Zambia, most women resort to illegal abortions since legal abortion services are unacceptable and inaccessible.

Many young women in Zambia engage in "dry sex." In a study of 329 women at an STD clinic in Lusaka, 50 percent had engaged in at least one dry sex practice (Sandala, *et al.* 1995). The most common practices were drinking a kind of porridge used to dry and tighten the vagina, removing vaginal secretions with a cloth, and placing leaves in the vagina to clean it. Though 10 percent reported swelling or peeling of the vagina when using a cloth or leaves, there was surprisingly no association between dry sex and increased HIV seropositivity among these women. In a study of a rural

community, 73 percent of 312 women reported practicing dry sex, while 40 percent of them did experience vaginal soreness from dry sex (Ashworth 1998).

Some Zambian females at puberty during ritual initiation engage in the practice of elongating their genitalia by manually stretching it, so that it will curl around and grasp the male's penis during intercourse (Feldman, *et al.* 1997). It is not yet known whether this practice is associated with increased risk for HIV among these women or their male partners.

Condom use, during the early and mid-1990s, was usually inconsistent at best in Zambia, and used more for pregnancy control than HIV/STD control. In rural Zambia especially, condom use is usually only negotiated within some short-term relationships and then not at all consistently (Bond and Dover 1997). Since Zambian women, with very few exceptions, are economically and ideologically dependent on men, they are in a much weaker position to negotiate condom use. During the late 1990s and early 2000s, there has been an increase in condom use and a decline in multipartnering among the middle-class, elite, urban, and young in Zambia, but no or little change among the majority of the population who are poor, those who are married couples, and rural Zambians (Agha 2002; Fylkesnes, *et al.* 2001; Slonim-Nevo and Mukuka 2005).

There have been a very limited number of research studies conducted within Zambia that attempted to reduce HIV risk. HIV prevention programs in Zambia have generally suffered from insufficient financial resources, lack of management and organizational skills, the inability to monitor and evaluate program performance, difficulty in generating income, and often lack of culturally appropriate counseling (Leonard, *et al.* 1996). Agha and Van Rossem (2004) conducted an intervention in

Zambian high schools with 416 students and found that students at the intervention school decreased their number of partners, but did not increase condom use. Preliminary data from our study indicates nearly identical findings (Feldman 2000).

Yoder, *et al.* (1996) evaluated a radio drama broadcast about AIDS during nine months. At the end of the broadcast, the local population had increased their knowledge about HIV/AIDS, and some reported reducing risky behaviors, though it could not be determined if this was a direct result of the broadcast. Kathuria, *et al.* (1998) conducted a community peer education project in three residential areas of Lusaka to reduce HIV and STD transmission. The project included training peer educators, community outreach, community meetings, and condom distribution. Syphilis seropositivity fell at the three sites from a range of 17.4 - 47 percent to a range of 7.3 - 10 percent. There was not a corresponding decline of syphilis in other residential areas of Lusaka.

Kiremire and Luo (1996) evaluated a program directly involving almost 700 former female sex workers in Lusaka, which included AIDS education, condom distribution, counseling, and alternative skills development (such as tailoring, hairdressing, catering, and several other skills which are alternatives to sex work). The program was evidently successful in leading hundreds of sex workers out of their occupation. Nyamuryekung'e, *et al.* (1997) conducted an intervention study along the Tanzania-Zambia highway targeting 1,330 women at seven truck stops. The study, which included HIV/STD information, condoms, and drugs for treating STDs, was successful and cost-effective in treating STDs and lowering the risk for HIV. Chiboola, *et al.* (1994) evaluated the role of including persons living with AIDS in community-

based HIV prevention. They found that persons living with AIDS play a leading role in the process of destigmatization of AIDS at the community level.

Methods and Demographic Considerations:

A three-year HIV prevention intervention study was conducted by the authors between September 1997 and August 2000 at an experimental and control public high school in Lusaka, Zambia to learn how to effectively promote HIV risk reduction among male and female older adolescents (15-20 years old) in a peer-led workshop setting. An ethnographically informed approach--developed by the first author (called the value utilization/norm change, or VUNC, model)--was used that emphasized the cultural values of the students, while challenging some of the norms, attitudes and beliefs that may impede behavioral change (Feldman 1999; Feldman, *et al.* 1999). The study proved successful in significantly reducing HIV risk among sexually active experimental students, compared with the sexually active control participants (Feldman 2000).

As part of the overall study, fifteen questions were asked about the attitudes toward HIV/AIDS of the students on the lengthy (406-item) baseline written survey. A total of 204 students (91 in the experimental school and 113 in the control school), including 101 females and 103 males, participated in the baseline survey during September 1998. The study was nonrandom, since it was necessary to recruit more sexually active participants into the study in order to test the hypothesis predicting reduction of HIV risk. A prior screening survey administered in May 1998 to nearly all of the tenth and eleventh grade students at the two schools (n=1,156) indicated that while most of the males (55%) self-reported being sexually active at least once, only 30

percent of the females self-reported being sexually active at least once. For the baseline survey and intervention, selective recruiting increased the proportion of males who had been sexually active at least once to 66 percent and the proportion of females who had been sexually active at least once to 58 percent. A large minority of sexually abstinent students were intentionally included in the baseline survey and intervention, so that participants would not feel stigmatized by nonparticipants within their school as sexually “promiscuous.”

Students were recruited from the tenth and eleventh grades only, since many ninth graders are excluded from completing their high school education because they fail a rigorous examination given during their ninth grade, and we needed to follow the control students for more than one year. Also, twelfth graders were excluded from our study, since they would be leaving the school at the end of the year.

Public high school students in Lusaka are by no means representative of older adolescents throughout Zambia. More than half of the Zambian population (57%) is rural, living in small towns, villages, and hamlets, and few older adolescents living in rural areas have access to television, radio, telephones, newspapers, or cars that are found more commonly in Lusaka and other major cities. Even within Lusaka, most Zambian youth do not attend high school. Indeed, the mean number of years of education for adolescents not attending high school in a Lusaka sample of out-of-school youth (n=138) is 7.4 for males and 5.2 for females (Feldman, *et al.* 1997). Public high school is seen as a privilege and mostly the sons and daughters of the small middle class and some of the wealthy attend. Children of very wealthy Zambians, expatriate whites, and some wealthy Asian Indians are more likely to attend private schools in

Zambia. Three indicators of wealth in Zambia are family ownership of a car, a television set, and a refrigerator. In Zambia, passenger cars are owned by 1.5 per 100 population, television sets are owned by 3.2 per 100 population, and refrigerators are similarly uncommon. However, 31.5 percent of the students in our study lived in a household with a car, 92.6 percent of the students lived in a household with a television set, and 68.1 percent of the students lived in a household with a refrigerator. Nevertheless, some students from poor families also attend, especially if they are male, have shown promise in the lower grades, have excelled on the entry test for high school, and the family is prepared to make the financial sacrifice (e.g., school fees, books, uniform) necessary to send one of their children to a public high school. Overall, about twice as many males than females attend public high school.

The baseline survey was in English. While most students speak Nyanja or Bemba at home, all instruction and discussion at the public high schools is in English, and all students were fluent in speaking, reading and writing English. Participants read and signed a voluntary informed consent form approved by the institutional review board (IRB) at the University of Miami before participating in the study, and parents of those students under 18 years of age were also asked to read and sign a parental consent form before their child could participate in the study. The baseline survey was pretested with eight students.

The fifteen questions asked about attitudes toward HIV/AIDS used a five-point Likert scale from “strongly disagree” (=1) to “strongly agree” (=5). The items included the following statements: “Most people with AIDS deserve to die;” “I think people with AIDS should receive compassion and assistance;” “The government should ignore the

needs of persons with AIDS;" "In Zambia, male homosexuals are the major cause of the widespread transmission of the AIDS virus;" "People with AIDS should be locked up permanently so they cannot infect others;" "There are many other health problems in Zambia that are much more important than AIDS;" "Prostitutes should all be killed so that they do not infect others with AIDS;" "Homosexuality is perfectly natural and normal, and it should be fully accepted by society;" "Most of the time, condoms don't work in preventing AIDS;" "AIDS orphans should take care of themselves;" "If I learned that someone I know has AIDS, I would avoid coming anywhere near that person;" "Masturbation is an evil sin;" "Fornication is an evil sin;" "Adultery is an evil sin;" "Kaliondeonde and AIDS are the same thing" (see Table 1).

The selection and wording of these 15 questions were developed from focus groups, short-term ethnography, and social network semi-structured interviews conducted during the one year formative research period prior to the baseline survey. These questions or their antithesis reflect statements or themes that were heard from at least some informants during our qualitative research. The wording also reflected terminology used by the students: "homosexuals" rather than "gays," "prostitutes" rather than "sex workers," "AIDS virus" rather than "HIV," "fornication" rather than "pre-marital sex," "adultery" rather than "extra-marital sex," and "an evil sin" rather than "morally wrong."

"Kaliondeonde" is a local AIDS-like illness that is said to be less severe than AIDS and has been in Zambia and Malawi for generations (Feldman 1993; Feldman and Miller 1998). It is believed to be primarily transmitted by failing to use traditional medication after an abortion or miscarriage, or by having sex with a woman who fails to

do so. In two focus groups among students we had learned that some students believed that Kaliondeonde and AIDS are the same thing, while some believed that they are two separate diseases. Most adults in Zambia also are unclear about the relationship between Kaliondeonde and AIDS, with many believing they are identical. Data from our preliminary research conducted in 1999 indicates that some of the diagnosed Kaliondeonde patients we tested were not HIV-positive as we had expected, suggesting that the disease is indeed a unique entity caused by an unknown pathogen.

The mean scores for the fifteen items were calculated using SAS between 1.00 and 5.00, and differences based upon sex (male vs. female), religiousness (very religious vs. somewhat religious), age (15-17 vs. 18-20), and major ethnic group or "tribe" (Bemba vs. Chewa vs. Lozi vs. Ngoni vs. Nsenga vs. Tonga vs. Tumbuka) were calculated by Chi-square or Fisher's exact test. "Tribe" is the preferred term in Zambia, while "ethnic group" or "ethnicity" is preferred in many other African nations, especially in West Africa.

Results.

There was a general consensus among the students that, in principle, people should be compassionate for persons living with HIV/AIDS in Zambia. Nearly all of the students agreed with the statement, "I think people with AIDS should receive compassion and assistance" (mean = 4.54). Only three of the 204 students (1.5%) disagreed or strongly disagreed, and only three were not sure or had a mixed opinion (see Table 1). Nearly all disagreed with the statement, "The government should ignore

the needs of persons with AIDS" (mean = 1.50). Only nine agreed or strongly agreed (4.4%), and ten were not sure.

Students were also aware that HIV/AIDS was very commonplace, and that mere physical proximity to a person infected with HIV was not a danger. Nearly all disagreed with the statement, "If I learned that someone I know has AIDS, I would avoid coming anywhere near that person" (mean = 1.60). Only seven agreed or strongly agreed (3.4%), and nine were not sure.

However, there was less consensus when students were asked to make moral judgments about persons with AIDS. While most disagreed with the statement, "Most people with AIDS deserve to die" (mean = 2.20), a sizable minority did not disagree. Forty-seven agreed or strongly agreed with the statement (23.0%), and twelve were not sure. Also, not everyone was prepared to rule out quarantine camps to stop the spread of AIDS. Most disagreed with the statement, "People with AIDS should be locked up permanently so they cannot infect others" (mean = 1.92). Yet, twenty-three students agreed or strongly agreed with this statement (11.3%), and eighteen were not sure.

Not all students were sympathetic with sex workers. Most disagreed with the statement, "Prostitutes should all be killed so that they do not infect others" (mean = 2.00). But nineteen students agreed or strongly agreed with this statement (9.3%), and sixteen were not sure. Males were more likely to strongly disagree than females (Chi-square = 11.014, p=0.026). Surprisingly, very religious students were more likely to strongly disagree, while less religious students were less likely to strongly disagree (Chi-square = 10.107. P=0.039). Not all students were compassionate either toward AIDS orphans in Zambia. Most disagreed with the statement, "AIDS orphans should

take care of themselves" (mean = 1.88). But thirty-two students agreed or strongly agreed (15.7%), and five were not sure.

About half of the students did not see AIDS as a health crisis in Zambia. Nearly as many agreed with the statement, "There are many other health problems in Zambia that are much more important than AIDS," as disagreed with that statement (mean = 2.93). Sixty-four students (31.5%) agreed or strongly agreed, seventy-three (36.0%) disagreed or strongly disagreed, while sixty-six (32.5%) were not sure. Males were more likely to agree with the statement than females (Chi-square = 12.046, p=0.017).

About half of the students did not think that condoms were effective in preventing AIDS. About as many agreed with the statement, "Most of the time, condoms don't work in preventing AIDS," as disagreed with that statement or were not sure (mean = 3.37). One hundred three students (50.5%) agreed or strongly agreed, fifty-three (26.0%) disagreed or strongly disagreed, while forty-eight (23.5%) were not sure. Females were more likely to agree that condoms do not work than males (Chi-square = 26.673, p=0.001). Ngoni students were more likely to disagree that condoms do not work than members of six other major tribes (Chi-square = 5.76, p=0.016).

Many of the students were not sure what role gay and bisexual men play in HIV transmission. Slightly more than half (n=105, 51.7%) disagreed or strongly disagreed with the statement, "In Zambia, male homosexuals are the major cause of the widespread transmission of the AIDS virus" (mean = 2.38), while only fifteen (7.4%) agreed or strongly agreed. But a sizable number of students (n=83, 40.9%) were not sure or had a mixed opinion. Males were more likely to disagree than females (Chi-square = 6.00, p=0.014). Older students (18-20 years old) were more likely to disagree

than younger students (15-17 years old) (Chi-square = 5.14, p=0.023). Most of the students (n=114, 55.9%), however, strongly disagreed with the statement, "Homosexuality is perfectly natural and normal, and it should be fully accepted by society" (mean = 1.83). Only twenty-six (12.7%) agreed or strongly agreed, and eighteen (8.8%) were not sure or had a mixed opinion.

Students typically perceived masturbation, pre-marital sex, and extra-marital sex very negatively. A majority of the students agreed or strongly agreed with the statement "Masturbation is an evil sin" (mean = 3.52), though thirty-seven (18.2%) disagreed or strongly disagreed, and fifty-seven (28.1%) were not sure or had a mixed opinion. Very religious students were more likely to agree with the statement than less religious students (Chi-square = 10.904, p=0.028). Nsenga students were more likely to disagree with the statement than students from other tribes (Chi-square = 4.22, p=0.040).

Most students agreed or strongly agreed with the statement, "Fornication is an evil sin" (mean = 3.96), though twenty-four (11.8%) disagreed or strongly disagreed, and thirty-two (15.7%) were not sure or had a mixed opinion. Younger students were more likely to agree than older students (Chi-square = 15.601, p=0.004). Tumbuka students were more likely to agree than students from other tribes (Chi-square = 6.68, p=0.010). Similarly, most students strongly agreed with the statement, "Adultery is an evil sin" (mean = 4.29), while only nineteen (9.4%) disagreed or strongly disagreed, and five (2.5%) were not sure or had a mixed opinion.

Exactly half of the students (n=102, 50.0%) were not sure or had a mixed opinion about the statement, "Kaliondeonde and AIDS are the same thing" (mean =3.02). The

other half are nearly evenly split between those who disagree or strongly disagree (n=49, 24.0%), and those who agree or strongly agree (n=53, 26.0%). Tonga students were more likely to agree (Chi-square = 4.98, p=0.026, while Lozi students were more likely to disagree (Chi-square = 3.90, p=0.048), when both groups are compared with students from other tribes.

HIV Stigma.

During focus groups and individual interviews, some students were quite candid about how they felt about persons with AIDS in Zambia. One student told us:

> *"All AIDS 'victims' should be detained in hospitals. There is no need for them to be sent home, because once they are out of the hospital they are going to misbehave…. They shouldn't be allowed to marry….* [Two local discos] *should be burned* [down], *because these are places where anything goes – drugs, 'prostitution,' alcohol, you name it. It's there! 'Prostitutes' should be rounded up and locked up in prisons."*

Another student went further saying, *"Since there is not yet a cure for AIDS, people with AIDS should be killed to reduce the spread of AIDS, or to stop the spread of AIDS."*

People with HIV are often mistrusted. For example, one student asked, *"There are some unscrupulous people with HIV who will do anything to infect others. They would go to the extent of putting the virus in ice blocks. Can you get HIV from taking that kind of ice block?"*

In spite of the near invisibility of gay and bisexual men in Zambia, there is enormous antipathy toward them. One student said, *"I wish scientists and researchers*

should do some research on those people because I think there is something wrong with them, as God created Adam and Eve." Another 17 year old asked about same-sex relationships: *"It is entirely wrong. God created man and woman to produce* [children]. *So how do people of the same sex produce their babies?"* In discussing someone she knows who is gay, a 19 year old female exclaimed, *"He's a Christian man. He goes to church. But look at what he's doing, having a homosexual relationship! Isn't that a sin?"*

During prior research among Zambian youth conducted in 1992-94, it was learned that more than half (52.5%) of our sample of 276 adolescents believed that AIDS is a punishment of God (Feldman, *et al.* 1997). While Zambian youth live in a social environment where the tragedy of HIV/AIDS is omnipresent, moral judgments are often made condemning those who become sick, sex workers are despised, gay men are vilified, and God is ever wrathful. However, this worldview should not be unexpected. They live, at least at the time of the study, in a world where the schools had no formal curriculum about HIV/AIDS, the media rarely attempted to reduce stigma toward persons with HIV/AIDS, the governmental leadership was mostly silent about the epidemic, and the fundamentalist churches were moralistic against those who sinned.

Discussion.

While most students expressed compassion to persons living with AIDS, many did not. Some believed that people living with AIDS deserve to die, that female sex workers should be killed so that they do not infect others, AIDS orphans should take care of themselves, and people living with AIDS should be locked up permanently.

Most students have a family member or relative who has died of AIDS. Funerals are commonplace, and most of the hospital beds are taken by AIDS patients. It is, therefore, surprising that the social stigma against AIDS remains so strong within Zambian society. Clearly, while the strong societal norms against pre-marital and extra-marital sex has not substantially changed the sexual behavior of many, if not most, Zambians, the prevalence of AIDS has neither weakened those norms nor diminished the social stigma attached to those norms. Not even the orphaned children of parents who died of AIDS are exempt from the scorn of many of the students.

Interestingly, while it might be expected that less religious students would be more tolerant of female sex workers, the opposite occurs. The less religious students are more likely than the very religious students to believe that sex workers should all be killed so that they do not infect others. It is difficult to interpret this unexpected pattern, other than to surmise that very religious students are more likely to observe the Biblical injunction not to kill. Males are more tolerant than females toward sex workers. It is possible that males see sex workers as potential sex partners, and humanize them to that extent, while female students see them as conduits of disease who infect their potential male partners.

While Zambia is a nation plagued by many infectious diseases, including tuberculosis, malaria, other STDs, cholera outbreaks, and diarrheal diseases, it is surprising that about half of the students, especially the males, do not rank HIV/AIDS at or near the top of that list. By minimizing the importance of HIV/AIDS in Zambia, many students view HIV/AIDS as affecting only an immoral “Other,” and make an effective intervention directed at these students more difficult.

The key to safer sex practices among students who remain sexually active is, of course, condom use. However, half of the students, especially the females who were less likely to self-report sexual activity, did not believe that condoms were effective in preventing HIV/AIDS. Focus groups conducted with students before our baseline interview clearly indicated a strong anti-condom bias among many of the students, and a pervasive belief that condoms do not work, and that many condoms have holes intentionally put in them. The media, government, and religious leaders in Zambia emphasize that condoms "are not 100 percent effective" in preventing AIDS. When we asked the students during focus groups what percentage is correct, they estimated that condoms are between 50 percent and 75 percent effective. Research conducted on condom effectiveness, when used properly, indicates a much higher level of between 87-98 percent (Davis and Weller 1999; de Vincenzi 1994; Faundes, *et al.* 1994; Hira, *et al*. 1997; Pinkerton and Abramson 1997; Warner, *et al.* 1998), and perhaps about 85 percent effective when typical human error is considered.

Ngoni students were more likely to believe that condoms are effective than members of other tribes. A focus group of different Ngoni students were asked after the survey to explain why they thought Ngoni students would think this. There was no consensus among the students, but some thought that Ngoni students may be more sexually active, more acculturated in Western thought, or simply more likely to follow the instructions on the condom package.

At the time of the baseline survey, a small group of Zambian gay men and lesbians were attempting to start a gay rights group, named Legatra ("Lesbian, Gay and Transgendered Association"), in Lusaka. The government openly condemned the

group, refused to legally register the fledgling organization, threatened to arrest anyone found to be homosexual, and threatened to deport any non-Zambians who would assist the organization. The government-controlled press ran page one editorials and news stories attacking and condemning Legatra and homosexuality in general. Similar events occurred in Namibia, Uganda, and Namibia at about the same time (see Lorway's chapter in this volume).

It is within this political and social climate that the intervention occurred. In our study, it was verified through follow-up interviews that two male students and one female student engaged in same-sex sexual behavior. While it may be accurate to assume that about six percent or so of the adult male population globally, including Zambia, have a same-sex sexual orientation, the evidence has been clear since the mid-1980's that HIV is transmitted primarily through heterosexual transmission throughout sub-Saharan Africa (Melbye, *et al*. 1986; Quinn, *et al.* 1986; van der Graaf and Diepersloot 1986). However, it is likely that unprotected male homosexual sex is at least as risky for HIV as unprotected heterosexual sex in sub-Saharan Africa, and that males in Zambia who engage in same-sex behavior on a regular basis without condoms are at high risk for HIV. But, certainly, male homosexuals are not the major cause of HIV transmission in Zambia. The fact that so many of the students in our survey were unsure of this is indicative of widespread misinformation about HIV transmission, perhaps based within the pervasive homophobia in the nation and region. Very few students agreed with the view that homosexuality is natural, normal, and should be fully accepted by society. As expected, most students strongly disagreed with this view.

Religious fundamentalism, perhaps caused by a reaction against AIDS as well as economic and political influence from American-based missionary groups, has grown dramatically in Zambia during the 1990's. Behaviors such as homosexuality, masturbation, pre-marital sex, and extra-marital sex are widely considered "evil" and "sinful." As expected, most students saw masturbation, pre-marital sex ("fornication"), and extra-marital sex ("adultery") as "evil sins." Masturbation among adolescents in Zambia is not very common. In our baseline survey, forty males (40.4%) report never having masturbated during the previous five years, while sixty-seven females (67.7%) report never having masturbated during the previous five years. Very religious students (of which the majority of the students considered themselves to be very religious), as might be anticipated, were more likely to see masturbation as an "evil sin" than less religious students. While Nsenga students were less likely to see masturbation in negative terms than students from the other major tribes, a focus group of different Nsenga students held after the baseline survey was not able to discern a clear perspective for why this occurred.

Tumbuka students were more likely than students from other tribes to agree that pre-marital sex is wrong. A post-survey focus group of Tumbuka students who did not take the survey explained this difference by saying that traditionally pre-marital sex has always been considered wrong, and the Tumbuka have maintained their cultural values. One female student said, *"In our tradition it is not right to fornicate. When the girls reach puberty, they are not allowed to mix with boys. This is because as girls grow, they begin to develop feelings and they might want to experiment* [with] *things. So girls*

are taught to stay away from boys. They usually tell them fornication is not good because a girl might become pregnant...a taboo in our culture."

There is considerable confusion among the students on whether Kaliondeonde is the same thing as AIDS or not. Half of the students were not sure or had a mixed opinion. There is a need for research on Kaliondeonde to determine the etiology of the illness, the relationship--if any--to HIV-1, an evaluation of the herbal treatments administered by traditional healers, and the transmissibility of this AIDS-like disease. Following this research, health education programs will be needed in Zambia, and neighboring Malawi where Kaliondeonde is also reported, to clarify the distinction between the disease and HIV/AIDS. It is not clear from our data why the Tonga students in our survey were more likely to agree that Kaliondeonde and AIDS are the same, while Lozi students were less likely to agree.

Conclusion.

The pervasiveness of AIDS in Zambia has not resulted, as might have been expected, in a destigmatization of the epidemic. In spite of the reality that HIV is omnipresent in the lives of the Zambian high school students, many distance themselves from it by seeing AIDS sufferers as the "Other" and make strong moral judgments against those who are infected with the virus. While Zambian students continue to be influenced to some extent by their tribal cultural heritage, the rapid growth in Zambia of American-based fundamentalist religious doctrine has had a profound effect upon the lives of urban Zambians, especially during the 1990's. In order to bring about sustained change to lower HIV infection, it is not enough to provide

accurate information about HIV/AIDS. It is equally important to both challenge their negative assumptions and attitudes against persons living with HIV/AIDS, as well as to challenge their beliefs and norms that conflict with their basic values of good health, long life, family, and community.

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Table 1

ATTITUDES TOWARD HIV/AIDS

	1	**2**	**3**	**4**	**5**
Most people with AIDS deserve to die.	84	61	12	29	18
I think people with AIDS should receive compassion and assistance.	1	2	3	77	121
The government should ignore the needs of persons with AIDS.	135	50	10	4	5
In Zambia, male homosexuals are the major cause of the widespread transmission of the AIDS virus.	40	65	83	10	5
People with AIDS should be locked up permanently so they cannot infect others.	91	72	18	13	10
There are many other health problems in Zambia that are much more important than AIDS.	19	54	66	50	14
Prostitutes should all be killed so that they do not infect others with AIDS.	65	104	16	7	12
Homosexuality is perfectly natural and normal, and it should be fully accepted by society.	114	46	18	17	9
Most of the time, condoms don't work in preventing AIDS.	17	36	48	61	42
AIDS orphans should take care of themselves.	109	58	5	16	16
If I learned that someone I know has AIDS, I would avoid coming anywhere near that person.	110	78	9	2	5
Masturbation is an evil sin.	16	21	57	59	50
Fornication is an evil sin.	11	13	32	65	83
Adultery is an evil sin.	13	6	5	64	114
Kaliondeonde and AIDS are the same thing.	20	29	102	32	21

1 = Strongly disagree
2 = Disagree
3 = Not sure, mixed opinion
4 = Agree
5 = Strongly agree