ANTHROPOLOGY AND AIDS: THE CULTURAL CONTEXT OF SEXUAL RISK BEHAVIOR AMONG URBAN BAGANDA WOMEN IN KAMPALA, UGANDA

ANNE W. MCGRATH, CHARLES B. RWABUKWALI, DEBRA A. SCHUMANN, JONNIE PEARSON-MARKS, SYLVIA NAKAYIWA, BARBARA NAMANDE, LUCY NAKYOBE and REBECCA MUKASA

1Department of Anthropology, Case Western Reserve University, Cleveland, OH 44106, U.S.A.
2Department of Sociology, P.O. Box 7062, Makerere University, Kampala, Uganda and
3Department of Population Dynamics, The Johns Hopkins University, School of Hygiene and Public Health, 615 N. Wolfe Street, Baltimore, MD 21205, U.S.A.

Abstract—One hundred and thirty Baganda women (65 HIV antibody positive and 65 HIV antibody negative), recruited from the Makerere University–Case Western Reserve University Collaborative Pediatric follow-up clinic in Kampala, Uganda were interviewed about cultural rules and norms for sexual behavior and HIV-specific risk behaviors. Interviews were analyzed for themes related to sexual risk, cultural rules regarding sex, and individual sexual practices. Statistical relationships were tested using $x^2$ and $t$-test statistics. The mean age of the women was 21 years (range 15–30). Despite sexual norms prohibiting sex for women outside marriage, subjects reported that there are certain circumstances when a woman may take other partners, including economic need, desire for greater sexual satisfaction, or revenge on a husband with other partners. Cases were more likely to state that women may have outside partners for economic reasons ($P < 0.05$) and that women have outside partners for sexual satisfaction ($P < 0.01$). Women interviewed for this study are complying with Ugandan AIDS control messages to ‘zerograze’ and ‘stick to one partner’. Fear of AIDS remains high, however, because women fear that their partners have not responded to risk reduction messages. Of those women stating fear of AIDS, 57% of cases and 62% of controls based their fear on their perceptions of their partners’ activities. Therefore, women feel that they remain at risk of infection despite their own behavior change. We find that, while the potential for risk reduction is high for these women, cultural norms permitting males to have multiple partners limit a woman’s ability to control her risk reduction. Important conclusions are: (1) a focus on women’s behavior alone is not sufficient as both partners must respond to risk reduction messages; (2) knowledge about AIDS is not sufficient to achieve change in sexual behavior because sexual behavior is linked to economics, gender relations, and other complex socio-cultural factors; and (3) a study of Baganda male sexual values and behavior is urgently needed.

Key words—AIDS, Uganda, anthropology, behavioral risk

INTRODUCTION

Because of the importance of human behavior in HIV transmission, the AIDS epidemic has posed multiple research questions about the social and cultural context of sexual behavior that constitutes a risk of HIV infection (e.g. [1–4]). Since the epidemic of AIDS was recognized in Africa in the early 1980s anthropologists have been active in African AIDS research (e.g. [1–15]). One contribution of anthropologists to research on AIDS in Africa has been to stress the importance of the cultural and biological diversity of the populations of the continent [7]. We have been caught short as a discipline, however, by the relative dearth of ethnographic research that can help to describe the current cultural context of sexual risk behavior in Africa. While there are many ethnographies of Africa, there are fewer recent ones, especially in areas at the heart of the epidemic in East and Central Africa. The reasons for this are manifold and include war, decreased access to research sites, and changing funding opportunities for ethnographic fieldwork. Nevertheless, with few exceptions [16–17] there is sparse recent ethnographic information that can contribute to our understanding of the culturally relevant variables influencing behaviors that are associated with HIV infection. This paper reports on a study of the cultural determinants of sexual behavior and risk of HIV infection in urban Baganda women in Kampala, Uganda and uses the AIDS Risk Reduction Model (ARRM) [18, 19] as a framework to examine sexual behavior change for risk reduction.

Epidemiology of AIDS in Africa

Numerous summaries of the epidemiology of AIDS in Africa have been published [12, 20–23]. As of 1 March 1991 there have been 83,749 cases of AIDS reported to the World Health Organization for the continent of Africa with estimates for the number of individuals in Africa who may already be infected running as high as $5.6$ million [26, 28]. HIV infection in Africa is focused in Central and East Africa. It is spread primarily through heterosexual contact, with perinatal and blood transmission
constituting secondary routes of infection (Pattern II, [23]). Seroprevalence surveys indicate that up to 17–20% or more of the populations of some African urban areas may already be infected, but there are difficulties in interpreting seroprevalence surveys [25]. Data from rural areas report considerably lower infection rates, although this is not universally true [25, 29]. While it is true that high seroprevalence rates may primarily reflect the adequacy of reporting [30], it is clear that HIV infection rates are high in some areas and that AIDS is a common reason for hospital admissions [31–33].

AIDS in Uganda

The first case of ‘slim’ disease or AIDS was identified in Uganda in 1981 [34]. Based on current reporting programs, Uganda is second only to the United States in number of AIDS cases in the world. By 31 December 1990, 21,179 cases of AIDS had been reported to the AIDS Control Programme in Uganda [35]. It has been estimated that a million or more people in Uganda may be infected with HIV [36], including more than 20% of the population of the city of Kampala [31].

The highest rates of infection and disease in Uganda occurs in women aged 20–30 [35, 37], many of whom were likely infected in their early teens. In addition, HIV infected women who bear children have as much as a 40% likelihood of infecting their child [38], producing a high prevalence of pediatric AIDS.

In Africa the first identified groups at high risk of HIV infection were commercial sex workers, truck drivers and other mobile male workers known to have a large number of sexual partners. In Uganda up to 67% of the barmaids and 32% of the truck drivers were reported infected in 1987 [39]. Today, however, 28% of the mothers attending a prenatal clinic at Mulago Hospital in Kampala are reported to be HIV infected [40] and 16.6% of blood donors in Kampala were HIV infected during the period 1986–1989 [35]. These data support the position that focusing on ‘risk groups’ is no longer appropriate. As Goodgame [31] notes, and these figures confirm, once the prevalence in a community exceeds 10% “knowing a patient’s social history rarely helps in making a diagnosis of HIV infection” [see also 41]. With high baseline seroprevalence rates essentially every sexually active person is at risk of becoming infected.

In response to the epidemic the Ugandan government has responded through, first, an active National AIDS Control Program [42, 43] and, more recently, established the AIDS Commission which utilizes a ‘multisectorial’ approach that encompasses programs in communication, rehabilitation, education, community services, defence, and economic planning [44]. These programs have resulted in a high level of awareness about AIDS which appears to have resulted in a decline in other sexually transmitted diseases [44]. But the epidemic is far from over. Therefore, continued focus on behavior, specifically behaviors that pose a risk of HIV infection, is essential to understand the future course of the epidemic in this setting.

Behavioral determinants of HIV risk

Extensive research has been conducted on the determinants of preventive health measures and behavioral risk reduction in populations at risk for HIV infection in the United States (e.g. [19, 45–49]). General models of health behavior have been used for some time (e.g. the Health Belief Model [see 50]). The only model of the determinants of behavioral risk reduction that has been published to date specifically for HIV/AIDS is the AIDS Risk Reduction Model (ARRM) [18, 19]. This model has been applied to several different populations in the U.S. In addition, Lindan et al. [51] used the ARRM to identify variables predicting behavior change in women in Kigali, Rwanda.

Models of health behavior have had some success in predicting the initial decision to change behavior, but have not been predictive of maintenance of these changes [48]. In a study by Joseph et al. [47], for example, the only variable consistently related to risk reduction behaviors six months after the first interview was the presence of social norms supporting such behavior change. What these results suggest is that the cultural and social context within which the person operates is critical to understanding the likelihood of sustained behavior change, since the social norms occur within a cultural system. Therefore, individual actions with respect to behavior change must be examined within the cultural setting within which they occur.

In a context in which HIV infection is transmitted primarily through heterosexual contact a specific risk reduction strategy or strategies is also affected by gender relations. Sociocultural norms and values regarding sexuality often differ for males and females [4, 16] and therefore the specific costs and constraints of a specific risk reduction strategy may be gender-specific. In addition, specific status and power in sexual and social relationships may condition the ability of individuals to alter traditional patterns of sexual communication and ability to introduce innovative behaviors into sexual relationships [17, 52], skills that may be necessary to reduce the risk of becoming infected with HIV. Patterns of sexual and marital relationships are strongly influenced by culture. As such, gender relations are conditioned by factors such as the relative economic independence of women, rights to land and inheritance, patterns of bridewealth, etc. [4, 17].

This study examines the cultural factors that influence sexual risk behavior of Baganda women in Kampala, Uganda. The focus of this paper is the examination of the cultural rules and values governing sexual relations and their implications for risk reduction in this population.
Cultural background of the Baganda

The Baganda are the predominant ethnic group in Kampala, which lies in the heart of what was once the Kingdom of Buganda, one of the most powerful of the Bantu Kingdom States. The ethnography of the Baganda has been recorded by many anthropologists [e.g., 16, 17, 53–65].

The Bagandan method of recognizing descent is patrilineal and individuals are traditionally associated with the clan of their father, although this association need not include residence in the clan village [16, 54, 62, 65]. Subsequent to marriage a couple is expected to establish a household separate from their parents. Even early accounts of foreign researchers indicate that multigenerational extended family households were rare [55, 64]. Buganda was ruled by the Kabaka or king. The organization of the kingdom is thought to have been, in part, responsible for the high degree of physical and social mobility in the Baganda [16, 54, 55, 63–65]. This mobility in Baganda social organization applies to sexuality and marriage as well. Movement between sexual partners was and is reportedly frequent for both males and females [see 53, 60, 66–68]. Anthropologists have commented on what they perceive to be the impermanence of Baganda marriages [e.g. 56, 66], linking this to, among other things, bridewealth rules that discourage stable partnerships [56]. Traditionally, bridewealth was returned to the husband if the marriage ended, through the initiation of either party, so that marital dissolution was a simple transaction between the two families [56, 57, 69]. These authors argue that there appear to be no significant institutional constraints on marital separation among the Baganda, so that high rates of marital dissolution are not unexpected.

Objectives

In 1987 Case Western Reserve University in Cleveland, Ohio and Makerere University in Kampala, Uganda began a multi-year research collaboration in cooperation with the Ugandan Ministry of Health. One component of that project was the examination of the cultural context of sexual risk behavior of those in the population who appear, in epidemiological terms, to be at high risk—women aged 17–30. The objective of the study was to ascertain the cultural context of sexual behaviors that place Baganda women living in Kampala, the primary urban area in Uganda, at risk of HIV infection.

Models of health and risk behaviors have often failed to examine the cultural context of health behaviors [e.g. 50]. Many of the important barriers to behavior change can only be understood in the context of norms and values influencing behavior within a particular social group. Although the cross-cultural applicability of the ARRM has not been firmly established, Lindan et al.'s [51] work in Rwanda suggests that the ARRM is a useful frame-

work in which to explore the variables associated with behavior change in different populations. Use of the ARRM as a framework for examining sexual risk behavior in Baganda women doesn't constitute a formal test of the ARRM, but may offer further insight into the cross-cultural validity of the variables employed in the ARRM.

MATERIALS AND METHODS

Subjects for this study were recruited from the Case Western Reserve University–Makerere University collaborative pediatric follow-up study at Mulago Hospital in Kampala (K. Olness and C. Ndugwa, Project Directors). As participants in the pediatric study, each woman was given an HIV antibody test at an antenatal visit to Mulago Hospital (the exact stage in pregnancy of this visit varied), at the time of delivery at Mulago Hospital, and a proportion of the women were tested again at 10–12 weeks postpartum. Classification of HIV antibody status is based on consistent results on at least two blood draws. There is the possibility of seroconversion between that time and enrollment in the behavioral risk study. Most of the women chose not to be informed of their serostatus, despite being fully informed concerning the procedure (L. Guay, personal communication) [70].

Subsequent to HIV testing and enrollment in the pediatric project, women were recruited into the behavioral risk study at the clinic through the cooperation of the clinic staff. Women were eligible for inclusion in the behavioral study if they were Baganda, aged 15–30, and at least 3 months postpartum. Clinic staff prepared a list of potential subjects that was presented to the interviewers. Interviewers did not review clinical records and were not informed of the serostatus of the individual women. The women were approached by one of four Luganda-speaking female interviewers (SN, BN, LN, RM) who explained the objectives of the study. Each woman was asked if she was willing to participate through extensive interviews in her home. It was emphasized that participation was voluntary, all responses would remain confidential, and that refusal would not jeopardize access to clinic or home medical care. If the woman consented, the interviewer collected specific information on the location of the respondent's home and made an appointment to visit her at home. The record of each interview includes only a study identification number, but no name. Subjects' names and identification numbers were only linked on a master list retained by the senior Ugandan investigator (CBR).

Demographic information was collected either at the clinic or during the first home visit. Information included: age, marital status, income, education, and religion. Subsequently, each woman was interviewed in her home over a period of several days. Interview topics included: cultural rules regarding sex, marriage, and fidelity; individual sexual attitudes and
behaviors; contraceptive knowledge and use; self-reported history of sexually transmitted diseases (STDs); AIDS knowledge and practices; and preferences and patterns for health treatment (Appendix). Questions about specific sexual practices and risk factors for HIV infection were constructed based on other studies of AIDS in Africa and Uganda [24, 37, 71]. Interviews were conducted in Luganda and translated into English by the interviewers. Complete sets of interviews are on file at Makerere University and the Johns Hopkins University Case Western Reserve University.

Analysis of the interviews focused on themes identified in the Appendix. Descriptive statistics from the demographic questionnaire were coded and analyzed using Epi-Info and SPSS/PC+. Relationships were tested using $\chi^2$ statistics, $t$-test statistics, and Pearson's correlation coefficients generated by SPSS/PC+. Other quantitative findings are forthcoming [72].

RESULTS

Table 1 presents the socio-demographic characteristics of the sample [73]. The mean age of the sample was 21 years (range 15-30). Forty-two cases (65%) and 41 controls (64%) have completed primary school or less, compared to 55.4% of the general population of women in Kampala [74]. Thirty-seven (57%) of cases and 41 (64%) of controls reported earning less than 3000 Ugandan shillings a month (approx $4.30 at a rate of 700 shillings to the dollar). Twelve (19%) of cases and 17 (26%) of controls are Muslims, 21 (32%) of cases and 30 (47%) of controls are Catholic and 27 (42%) of cases and 15 (23%) of controls are Protestant ($P = 0.007$) [72].

Ninety-four (73%) of the women reported that they are currently living with a sexual partner. These sexual unions take several forms including civil or church marriages, consensual unions, and visiting unions. Twelve (18%) of cases and seven (11%) of controls have been married previously. Polygyny is common among the Baganda: 31% of urban Ugandan women reported that they are currently in a polygynous union [74], while 25 cases (39%) and 24 controls (38%) in this study reported that their husband has more than one wife. In addition, 44 (68%) of cases and 35 (56%) of controls reported that their husband has children with other women. It was not ascertained whether these children were born prior to their current marriage. Therefore, this measure cannot serve as a measure of previous or 'extramarital' sexual activity.

Both cases and controls reported an average of only one sexual partner in the last year. Over the last 5 years cases reported an average of 2.5 partners and controls reported an average of 2 partners ($P = 0.001$) [72]. Cases and controls had the same mean age at first intercourse (15 years, range for cases: 12-19 years, range for controls: 15-20 years) and years of sexual activity (5.7 years). We recognize that the number of sexual partners over the last 5 years may not accurately reflect the number of lifetime partners.

### Table 1. Socio-demographic data

<table>
<thead>
<tr>
<th>Socio-demographic factors</th>
<th>Cases (N = 65)</th>
<th>Controls (N = 64)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Education:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>4</td>
<td>6.2</td>
</tr>
<tr>
<td>Some primary</td>
<td>27</td>
<td>41.5</td>
</tr>
<tr>
<td>Primary completed</td>
<td>11</td>
<td>16.9</td>
</tr>
<tr>
<td>S3 completed</td>
<td>21</td>
<td>32.3</td>
</tr>
<tr>
<td>S4-S6</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>Teacher's training/technical school</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>Income: (Ugandan Shillings per month)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>32</td>
<td>49.2</td>
</tr>
<tr>
<td>1–3000</td>
<td>5</td>
<td>7.7</td>
</tr>
<tr>
<td>3001–5000</td>
<td>9</td>
<td>13.6</td>
</tr>
<tr>
<td>5001–7000</td>
<td>10</td>
<td>15.4</td>
</tr>
<tr>
<td>7001–10,000</td>
<td>2</td>
<td>3.1</td>
</tr>
<tr>
<td>&gt; 10,001</td>
<td>5</td>
<td>7.7</td>
</tr>
<tr>
<td>Unknown</td>
<td>2</td>
<td>3.1</td>
</tr>
<tr>
<td>Religion:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muslim</td>
<td>12</td>
<td>18.5</td>
</tr>
<tr>
<td>Catholic</td>
<td>21</td>
<td>32.3</td>
</tr>
<tr>
<td>Protestant</td>
<td>27</td>
<td>41.5</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>7.7</td>
</tr>
<tr>
<td>Marital status*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legal marriage</td>
<td>21</td>
<td>32.3</td>
</tr>
<tr>
<td>Consensual union</td>
<td>26</td>
<td>40.0</td>
</tr>
<tr>
<td>Visiting union</td>
<td>14</td>
<td>21.3</td>
</tr>
<tr>
<td>Formerly married</td>
<td>2</td>
<td>3.1</td>
</tr>
<tr>
<td>Single</td>
<td>2</td>
<td>3.1</td>
</tr>
</tbody>
</table>

* $P = 0.008$.

*Legal marriage is defined as one involving a religious or civil ceremony. Consensual unions exist when the couple live together with no such ceremonies. Visiting unions exist when one partner comes and goes from the household. The remaining categories are self-explanatory.
years is a measure that may be confounded by years of sexual activity. Because the average age of the women is 21 years this sample represents primarily women who are at the beginning of their sexual lives. The older women in the sample (who have been sexually active longer) may have had more life-time partners than the other women. Therefore, for some younger women this measure represents lifetime partners, while for the older women it represents only the sexual partners over the last 5 years.

Cultural rules and values regarding sexual behavior

Insight into the sexual values of this sample is gained from examining responses to three specific questions. First, subjects were asked to name occasions when a woman should not have sex with any man, even her husband. Occasions named include, during menstruation, after delivering a baby, when a child is sick, particularly with measles, and during mourning, especially for a close family member. Secondly, women stated that it is wrong to have sex with men other than one's husband during pregnancy, immediately after delivery, and while breast feeding. Violation of these prohibitions is believed to lead to the death of the child, unless appropriate preventive actions, such as herbal baths from a traditional healer, are taken. Finally, 24 (37%) of cases and 13 (20%) of controls (P < 0.05) identified occasions when a woman is traditionally expected to have sex with men other than her husband. These occasions include: rituals around the birth of twins; funerals, especially the funeral of her husband, when a woman might be expected to have sex with the husband's brother; and weddings, when the parents of the bride (whether currently married or not) might have sex, or the bride's paternal aunt might have sex with the groom before the bride does. This sample of urban women widely regard these as traditional practices that are generally ignored today. The importance of these findings, however, is that they identify a set of cultural rules about sex, including when it is or is not acceptable, expected, or appropriate to have more than one sexual partner.

Women reported that a woman's infidelity is a common reason for a man to leave his wife, while it is less often the case that a wife leaves her husband because of his extramarital sexual partners. This difference in the impact of infidelity for males and females stems from the fact that it is acceptable, even expected, for Baganda males to have more than one sexual partner [e.g. 17, 53, 67], while women are expected to remain faithful to their husbands. The sanctions against a woman's infidelity include beatings, divorce or being chased from the home, or withdrawal of monetary support. Nevertheless, subjects gave several reasons why women have partners outside of their primary union, despite these cultural prohibitions (Table 2). Men are expected to provide material assistance to their girlfriends. Women often stated that if a husband fails to provide properly for his wife she is justified in having sex with a man who will provide either money or items such as clothing. Eighty-two (63%) of the women state that women have other partners for economic reasons, with cases significantly more likely to state this reason (P < 0.05). Subjects also reported that women have additional sexual partners in order to obtain greater sexual satisfaction (36 (28%) total, 25 (39%) cases and 11 (17%) controls, P < 0.01); to revenge on a philandering husband (18 (14%)); and because some women are just born 'sex maniacs' ('abakasagazi')—literally 'itchy like elephant grass' (41 (32%)).

Response to AIDS

All of the 130 women have heard of AIDS. Subjects were asked to name any routes of HIV transmission of which they were aware (Table 3). There were no significant differences between cases and controls in the modes of transmission named. Sixty-three (97%) of cases and 65 (100%) of controls mentioned sexual activity as a means of transmission of AIDS. Other methods of transmission mentioned include: blood transfusions [14 (22%) cases, 12 (18%) controls, P > 0.5], unsterile needles use [13 (20%) cases, 9 (14%) controls, P > 0.3], mother to child [6 (9%) cases, 3 (5%) controls, P > 0.2], breast feeding [4 (6%) cases, 1 (2%) controls, P > 0.1], witchcraft [2 (3%) cases, 0 controls, P > 0.1], and houseflies [1 (2%) cases, 0 controls, P > 0.3].

Sixty-three (97%) of cases and 62 (95%) of controls have heard of ways to protect themselves from getting AIDS (Table 3). There are no significant differences between cases and controls in the means of protection they named. Of these, 47 (75%) of cases and 42 (68%) of controls mentioned 'zerograzing' or 'stick to one partner' (P > 0.3) [75]. Fourteen (22%) of cases and 12 (19%) of controls mentioned reducing the number of partners (P > 0.5) and 22 (35%) of

<table>
<thead>
<tr>
<th>Table 2. Reasons why women have partners outside their primary union</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic reasons</td>
</tr>
<tr>
<td>Cases (N = 65)</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>Economic reasons</td>
</tr>
<tr>
<td>47</td>
</tr>
<tr>
<td>Lack of sexual satisfaction</td>
</tr>
<tr>
<td>25</td>
</tr>
<tr>
<td>Some women are naturally promiscuous ('sex maniacs')</td>
</tr>
<tr>
<td>23</td>
</tr>
<tr>
<td>Revenge on a promiscuous husband</td>
</tr>
<tr>
<td>8</td>
</tr>
</tbody>
</table>

*Significant at the 0.05 level.
*Significant at the 0.01 level.
cases and 14 (23%) of controls mentioned abstinence (P > 0.1). Nineteen (30%) of cases and 25 (40%) of controls specifically mentioned using condoms as a means of protection against infection (P > 0.2) [76].

Fear of AIDS is high in this population. Fifty-six (86%) of cases and 50 (77%) of controls feared getting AIDS through sexual activity. Of those stating this fear, 32 (57%) of cases and 31 (62%) of controls gave a reason related to their male partner’s sexual behavior, such as his having more than one partner (P > 0.8). This finding parallels that of Lindan et al. [51] in Rwanda who report that 62% of the women in their sample who perceive themselves at risk of HIV infection report that their risk is due to their partner’s behavior. In the current study, when women were asked how many partners they think that their sexual partner has had in the last year the cases reported an average of 1.8 and the controls 1.9. They reported that they think that their partners have had 3.6 partners (cases) and 3.4 partners (controls) in the last 5 years. These figures represent only the woman’s opinion about her partner’s number of sexual partners. This, in combination with the women’s own fears and concerns about using condoms as a means of protection against infection, may be related to two things. First, the women described a strong cultural belief that having sexual intercourse with a man other than the baby’s father during pregnancy and lactation leads to the baby’s death (‘makiro’, [11]; ‘amakiro’ [61,77]), unless appropriate actions (such as ritual baths in traditional herbs) are undertaken as protection. Therefore, it is not unexpected that this sample of women reported that they did not have additional partners in the 12 months preceding this study, a time which coincided with pregnancy and nursing. A second important reason for this finding is that some of the women reported that they have changed their behavior out of fear of AIDS, and therefore have remained faithful to one partner.

This group of Baganda women have a high level of knowledge about AIDS, regardless of their serostatus. Their primary response to the threat of AIDS is to limit the number of partners by remaining faithful to their current partner. Despite these attempts by some of the women to reduce the risk of infection, subjects expressed fear that their partner is not practicing similar risk reduction strategies. This fear stems from the cultural value described above which deems that men can (and should) have multiple sexual partners. This, in combination with the woman’s own fears and concerns about using condoms [76], limits the extent to which women can control their own risk of infection. The women, therefore, perceive themselves to be at risk of infection despite their own behavior change.

These results indicate the difficulty of only examining what women know about HIV/AIDS, for it is not knowledge of the disease alone that reduces the risk of infection, but rather a combination of knowledge and culturally permissible behavior change. In addition, in order for behavior change to successfully reduce risk of infection it is necessary for both partners to change. In other words, even if the women change their behavior there is a need for partners to change. In this group of Baganda women, although they have changed their behavior, both partners need to change for the effective transmission of knowledge of HIV prevention

<table>
<thead>
<tr>
<th>HIV transmission</th>
<th>Cases (N = 65)</th>
<th>Controls (N = 65)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Through sexual activity</td>
<td>63</td>
<td>97</td>
</tr>
<tr>
<td>Blood transfusion</td>
<td>14</td>
<td>22</td>
</tr>
<tr>
<td>Urimeter needles</td>
<td>13</td>
<td>20</td>
</tr>
<tr>
<td>From mother to child</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Breast-feeding</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Witchcraft</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Housefleis</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Knowledge of HIV prevention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stick to one partner</td>
<td>47</td>
<td>75</td>
</tr>
<tr>
<td>Abstinence</td>
<td>22</td>
<td>35</td>
</tr>
<tr>
<td>Condoms</td>
<td>19</td>
<td>30</td>
</tr>
<tr>
<td>Decrease number of partners</td>
<td>14</td>
<td>22</td>
</tr>
</tbody>
</table>

DISCUSSION

There are no significant differences between cases and controls with respect to AIDS knowledge and prevention strategies in this sample of Baganda women. The women in this study reported an average of only one sexual partner in the last year, a fact that may be related to two things. First, the women described a strong cultural belief that having sexual intercourse with a man other than the baby’s father during pregnancy and lactation leads to the baby’s death (‘makiro’, [11]; ‘amakiro’ [61,77]), unless appropriate actions (such as ritual baths in traditional herbs) are undertaken as protection. Therefore, it is not unexpected that this sample of women reported that they did not have additional partners in the 12 months preceding this study, a time which coincided with pregnancy and nursing. A second important reason for this finding is that some of the women reported that they have changed their behavior out of fear of AIDS, and therefore have remained faithful to one partner.

This group of Baganda women have a high level of knowledge about AIDS, regardless of their serostatus. Their primary response to the threat of AIDS is to limit the number of partners by remaining faithful to their current partner. Despite these attempts by some of the women to reduce the risk of infection, subjects expressed fear that their partner is not practicing similar risk reduction strategies. This fear stems from the cultural value described above which deems that men can (and should) have multiple sexual partners. This, in combination with the woman’s own fears and concerns about using condoms [76], limits the extent to which women can control their own risk of infection. The women, therefore, perceive themselves to be at risk of infection despite their own behavior change.

These results indicate the difficulty of only examining what women know about HIV/AIDS, for it is not knowledge of the disease alone that reduces the risk of infection, but rather a combination of knowledge and culturally permissible behavior change. In addition, in order for behavior change to successfully reduce risk of infection it is necessary for both partners to change. In other words, even if the women change their behavior there is a need for partners to change their behavior as well.

Interestingly, McCombie [79] found that males and females in a sample of Ugandans are equally likely to report that they feared AIDS because they did not trust their partners. Although we only have data on women it is clear that the issue of a partner’s risk reducing behaviors is an important one in this population. These findings, therefore, support earlier work [e.g. 51] that suggests that a focus on individual sexual behavior alone is insufficient—as both
partners must respond to risk reduction messages for the risk reduction to be effective.

AIDS prevention advice usually involves two messages: be faithful to one partner and use condoms. The results of this study suggest two dilemmas for Baganda women in responding to this advice. First, although subjects report limiting their number of partners at the present time, they emphasize that there are situations, such as economic need, when a woman is justified in having another partner or partners. For women who employ multiple partner strategies out of economic need, advising them to reduce their sexual contacts, without recognizing the potential economic harm to them, is unlikely to result in behavior change. Secondly, in a context in which males frequently have multiple partners, women can only control their exposure to infection to a limited extent. The reasons for this include the expectation that Baganda males will have more than one sexual partner, while women will not. The result of this cultural pattern is that women feel that they can only reduce their risk of infection to a certain extent, because of their inability to alter male behavior.

The AIDS Risk Reduction Model

It is useful to explore these data in the context of the AIDS Risk Reduction Model proposed by Catania et al. [18, 19]. The model proposes three stages of risk reduction: (1) The presence of variables supporting change, (2) a decision to change, and (3) taking action.

Variables identified in the ARRM as relevant to supporting change include: perception of the morbid event as problematic; perception of associated behaviors as problematic; knowledge of behaviors involved in disease transmission; perceived susceptibility; perceived norms; and aversive emotional states associated with problem behavior. Our study population has a high perception of the morbid event (AIDS) as problematic, as well as a high perception of associated behaviors as problematic and a depth of knowledge about behaviors that transmit the disease. In addition, these women express a high degree of perceived susceptibility to infection. Perceived norms place women at risk of HIV infection, however, by sanctioning non-monogamous male sexual practices, thus limiting female control over sexual behavior. Yet despite the cultural values that limit their options in terms of specific behavioral changes, these data suggest that the women in our sample may be in a strong position to decide in favor of behavior change due to their high perception of susceptibility to risk of infection. That is, according to the ARRM framework these urban Baganda women are in a situation that is supportive of behavior change, based on their education about HIV and AIDS.

The decision to change one's behavior according to the ARRM involves: perceived costs of low vs high risk behaviors; perceived benefits of low vs high risk behaviors; skills and self-efficacy; and perceived norms. The women in our study perceive multiple sexual partnerships to be a 'high cost behavior' and perceive a reduction in partners as a benefit in terms of risk for contracting AIDS. While they state that they have chosen to reduce their number of partners, they do not express the skills necessary to achieve any further reduction in risk of infection through negotiation with their sexual partner. This is linked to the women's limited ability to control their sexuality. These data suggest that while women may make the decision to change their own behavior this results in only a partial removal of the risk of infection.

Taking action to change behavior involves: help-seeking behavior, skills in healthful sexual behavior, sexual communication skills; and perceived norms. Despite a high perception of risk of infection and personal decisions to reduce such risk, these women report little ability to take action beyond the step of reducing their number of partners, because this is the only action that is within their control. However, despite the fact that traditional values favor a woman's fidelity to her primary union, women report that the realities of economic needs may cause some women to seek outside partners. The value of single partnerships as 'safer sex' has not yet been fully operationalized in this population.

What does examination of the AIDS Risk Reduction Model tell us about risk behavior in this population? By consideration of these data, in association with the elements of ARRM, it is clear that cultural values regarding sexuality serve as significant barriers to further risk reduction in this population of women. Risk of infection is, therefore, not reduced despite high levels of perception of risk of infection, susceptibility, and benefits of behavior change. This suggests that the ARRM may need to be modified for use in this context because it overemphasizes individual behavior and choices without fully recognizing the influence of sociocultural factors on behavior choices. Furthermore, our data demonstrate clearly that while education may have laid the foundation for a 'decision to change' other factors are now critical in achieving behavior change.

CULTURE, SEX AND AIDS: POLICY IMPLICATIONS

The policy implications of these findings are clear although not startling: education about risk of infection is not sufficient. Cultural determinants of health behaviors serve as important barriers to health behavior change. The ramifications of this as regards AIDS in Uganda have yet to be fully explored.

The women we studied have heard of AIDS and know the messages for reducing risk of infection. These messages include practicing partner reduction in the form of 'zerograzing' and 'loving carefully'. Despite somewhat different interpretations of these messages, these women believe that they are acting upon them. It is clear, however, that the women do not believe that their male partners have received or acted
upon the same messages [79, 80]. Without data on males we cannot directly address the degree to which this perception is accurate. However, the women we interviewed clearly state that they are afraid of getting AIDS because of their partner’s behavior. No comparable study on Baganda males has been published to date, but the data presented in this paper stress the urgency of understanding male sexual behavior that poses a risk of infection in this context. Our data clearly indicate that focusing only on women is not sufficient.

The importance of knowledge alone in reducing risk of HIV infection seems to decrease over time [45]. Therefore, while it may be true that knowledge about AIDS has been important in reducing risk of infection in this population of Baganda women, it is now clear that knowledge alone cannot overcome barriers to further behavior change. The implication of this for planning education and intervention programs in that emphasis should now be on programs that will teach about how to accomplish risk reduction and programs that make such changes possible. These programs will have the maximum value in this group.

Because Baganda women have limited ability to reduce their risk of HIV infection due to prevailing cultural values with respect to sexual behavior, policy makers are faced with the dilemma of how to alter the sexual norms and values of a cultural group. To reduce risk for HIV infection it would appear to be necessary to promote better sexual communication, faithful sexual unions, and increased sexual decision-making powers for women.

At the present time behavior change for risk reduction is the only available response in the fight against AIDS. This study illustrates the complexities of sexual behavior which is linked to economics, gender relations, and a host of other socio-cultural factors. To say simply that we must increase women’s sexual decision-making powers glosses over these complexities. But AIDS educators must now realize that AIDS control programmes must move beyond teaching facts of AIDS if AIDS prevention is to be achieved.

Acknowledgements — This project was funded under the National Institutes of Health International Collaboration on AIDS Research Program project ‘HIV Infection and Acquired Immunodeficiency Syndrome (AIDS) in Uganda’, Grant no. A02624-03, Samuel Okware, M.D. and Frederick Robbins, M.D., Principal Investigators; Roy Mugerwa, M.D. and Jerrold Ellner, M.D., Co-Principal Investigators. The project ‘Family Structure and the Social Organization of Risk Behaviors’ was awarded to Debra A. Schumann and Janet W. McGrath, Co-Project Directors.

The authors wish to thank the research staff: Laura A. Guay, M.D., Patricia Ball, and the staff of the CWRU-Makerere Pediatric Follow-up clinic who provided invaluable assistance in recruiting subjects. Cindie Carroll-Pankhurst assisted with data analysis and David A. Zordan produced the tables. We also gratefully acknowledge the helpful advice of the reviewers and the kind assistance of the editor. We thank, in addition, the women who agreed to participate in our study.

REFERENCES


20. Mann J. M., Francis H., Quinn T., Asila P. K., Bosenge N., Nzlambi N., Bila K., Tamfum M., Ruti K., Piot P.,
70. All study procedures involving testing and informing of patients were approved by human subjects review committees in the United States and Uganda and were undertaken in accordance with the PHS policy for informing those tested for HIV status (National Institutes of Health, Policy on informing those tested about HIV serostatus. PRR Rep. 10 June 1988). All the women participating in the pediatric follow-up study were informed that they would receive an HIV test. This information was transmitted to them in their native language at the time of enrolment. Participation in that study included a blood test at the times described in the text plus continued medical follow-up for the infant. Due to the inability to diagnose HIV infection in infants prior to 18 months infants were not given HIV tests until their 12 and 18 month clinic visit. Prior to this time they were given continuous clinical follow-up and may have shown symptoms of clinical AIDS, in the absence of serodagnosis. At the time that this behavioral study was completed only a proportion of the infants had reached 12 and 18 months.
71. It is important to note that at the time that the Case Western Reserve University-Makerere University collaborative study began the Ugandan policy in general and at Mulago Hospital in particular was not to inform patients of their HIV status, unless they had advanced clinical AIDS. This policy was based on a complex set of parameters, including lack of adequate counseling facilities and lack of adequate facilities for confirmatory tests. Policies worldwide require that positive serostests be confirmed using a Western Blot serostet and technical difficulties in Uganda delayed attainment of confirmatory results. In the absence of proper confirmatory tests and adequate counseling, Case Western Reserve-Makerere University researchers were not permitted to inform patients of their serostatus unless they specifically asked for the results. All of the women attending the clinic received AIDS education in Uganda, following the UNICEF model for AIDS education. As the study progressed, more and more of the women requested their test results, usually because they or their children had fallen ill. Today in Uganda, counseling services are more widely available and informing patients of their serostatus is acceptable. In addition, it is the policy of Mulago Hospital, in accordance with the World Health Organization, not to recommend that HIV infected women in developing countries discontinue breastfeeding. The data on transmission of HIV by breastmilk, while inconclusive, suggests that the risk of HIV transmission is small, while the risk of infant mortality from cessation of breastfeeding remains high. As a result, the policy has been not to discourage women from breastfeeding at this time (see, for example, Heymann S. J. Modeling the impact of breastfeeding by HIV-infected women on child survival. Am. J. Publ. Hlrh 80, 1305 1309, 1990).
74. One control subject was removed from quantitative analysis because he was identified as an extreme outlier. Quantitative analysis was therefore performed on 64 controls and 63 cases. This subject was retained for qualitative analysis of cultural themes and rules as she did not constitute an outlier with respect to this analysis.
76. ‘Stick to one partner’ or ‘zerograzing’ are messages from the Ugandan government AIDS Control Programme. ‘Stick to one partner’ promotes monogamy and is interpreted as such by the respondents. Zerograzing is a term taken from herd management theory. The idea is to ‘graze’ only within your own compound. The interpretation of this slogan varies from ‘have only one partner’ to ‘have fewer partners, that you know well’. A less frequent interpretation is ‘abstinence’.

APPENDIX
The Social Organization of Sexual Risk Behavior Interview topics
1. Cultural rules regarding sex, marriage and fidelity.
   • Sex inside marriage.
   • Sex outside marriage.
   • Attitudes toward fidelity and infidelity.
   • Sexual behavior in general.
2. Individual behavior.
   • Sex inside marriage.
   • Sex outside marriage.
• Attitudes toward fidelity and infidelity.
• Sexual behavior (including age at first intercourse, sexual practices, frequency of intercourse, etc).
3. Contraceptive knowledge and use.
4. Sexually transmitted diseases.
  • Woman’s history.
  • Woman’s report of her husband’s history.
5. AIDS knowledge and practices.
  • Knowledge about AIDS.
  • Knowledge of methods of prevention.
  • Knowledge about causation.
  • Attitudes and practices regarding condoms.
  • Personal risk reduction behaviors.