

## Social context of HIV infection in Uganda\*



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### Abstract

**Some of the important policy and research implications of accumulating HIV/AIDS data are being ignored because of the attraction of social science research focused on the 'multiple sexual mechanism' of infection and transmission. Attention is drawn to the other policy and research issues relating to information on the timing of infection through a re-analysis of existing data on cumulative AIDS cases. The most urgent need is to supplement the mainstream research on risk groups with studies of the timing and circumstances of entry into sexual activity in the pre-teen years.**

### Social science response to the epidemic

The initial social science research response to the appearance of HIV/AIDS in Africa was based on the broad information that heterosexual intercourse was the dominant channel of HIV transmission (Piot and Carael 1988; Carael et al. 1992; Carael and Piot 1992). Studies of the patterns of sexual behaviour and associated cultural practices soon confirmed that, like the epidemics of STDs before it, HIV was being rapidly propagated through the high numbers and dense networks of sexual partners (Musgrave et al. 1990; Orubuloye, Caldwell and Caldwell 1991; Katsivo and Muthami 1991; Somse, Chapko and Hawkins 1993; Orubuloye 1993). But after that initial observation of the role of multiple sexual partners in the evolution of the epidemic, not much has changed in the agenda of research on the dynamics of sexual behaviour.

The main directions of investigation and the main findings can be summarized as follows:

1. Why do Africans have many sexual partners? There is no general sense of shame about multiple sexual relations, the romantic notion of love is not idealized and the status of women is often precarious with respect to their own control of their sexuality (Caldwell, Caldwell and Quiggin 1989). In addition, there are a number of persistent cultural practices that encourage dense networks of sexual contact (Ntozi and Lubega 1992; Orubuloye et al. 1994).

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2. Given the predominance of multiple sexual partnerships, what groups constitute the reservoir and what groups the channels of diffusion? The concept of high risk based on having multiple sexual partners draws attention to the fairly obvious groups such as 'sex workers', workers in the entertainment industry, and people of 'easy virtue'. The long distance truck drivers served as the conduit through which the virus moved from the foci, in the main urban centres, to the secondary nodes in trading centres, and from there, through local migrant population, into the rural areas (Bwayo et al. 1991; Orubuloye, Caldwell and Caldwell 1993; Orubuloye, 1993).

3. Given the apparent difficulty of effecting changes in sexual behaviour (Musgrave et al. 1990; Wilson et al. 1991), what option is there for controlling the spread of the epidemic? The resounding answer to this question was that the condom offered the only option: an unfortunate answer for Sub-Saharan Africa, given the very limited success that had been achieved in the propagation of condoms as a contraceptive in family planning programs and the qualified success achieved among high-risk groups who have been tested and counselled appropriately (Ngugi and Plummer 1991; Wilson et al 1991).

Meanwhile two sets of information were accumulating that point to the significance of other elements in the epidemiological equation of the reproduction of infection, namely, the density and the duration of exposure.

The first set is the reported cases of so-called adult AIDS, so called because, as will be discussed, the term 'adult' only fitted the early stages of the epidemic. Less than a decade after the first adult cases, paediatric and pre-teen cases were emerging. The second set of data, mostly from developed countries, sheds light on the natural history of HIV by identifying the timing of infection, progression to AIDS Related Conditions (ARC), and AIDS and eventual death.

With reference to these sets of data the response of social science research to new stimuli has been less than rapid. The first set of data, especially those coming from countries that have a policy of openness about the epidemic, strongly suggests that apart from having multiple sexual partners, the early stages of exposure to a rising density of infected population could well sustain the epidemic even if multiple sexual partnership was on the decline. The second set of data reinforces the reported data by confirming that the age at entry and the circumstances of that very first sexual act are important to an understanding of the reproduction of infection and equally important to the design of programs of control.

## **Objectives, materials and methods**

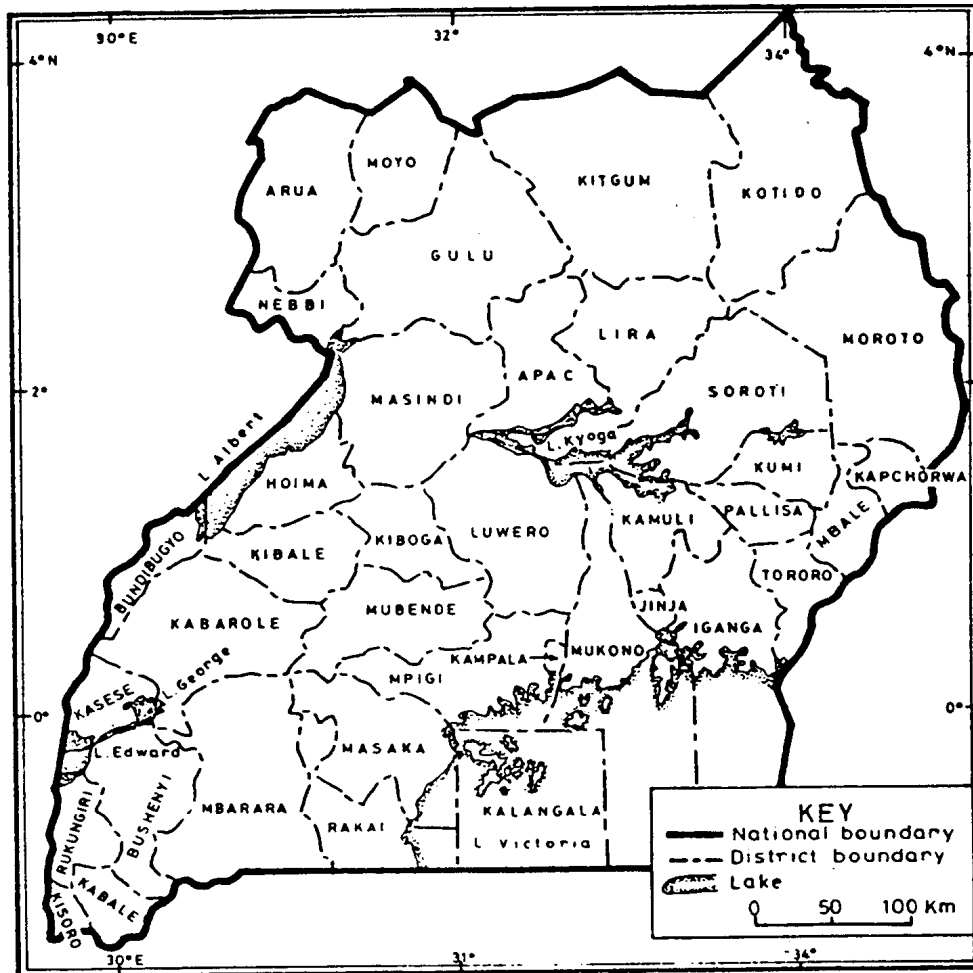
The main purpose of this chapter is to broaden the scope of discussion of the socio-economic context of the rapid reproduction of infections and to focus on the role of early, that is, pre-teen girl-child sexuality in the dynamics of the epidemic. The materials involved in the discussion are drawn from a number of sources.

The first is a re-analysis of the cumulative total of 42,000 adult AIDS cases, defined as those aged 12 years and above, reported between 1982 and 1994 (STD/ACP 1995), and constituting one of the most consistent AIDS data sets in Africa. The purpose of that re-analysis will be to clarify the relationship between the time of infection and the time of appearance of infected persons in AIDS case files to gain some idea of the volume and significance of pre-teen infection in the sustenance of the levels of new infection. The validity of that estimation of the timing of infection is further reinforced with a brief review of data on pre-teen and early teen pregnancy, which is a form of risk similar to, and sexually sustained in the same way as, STDs and HIV/AIDS infection.

A third set of material is drawn from the review of the findings from studies of adolescence in Eastern and Southern Africa and from findings from a recent study carried out in school populations in Pallisa and Tororo Districts of Uganda (Mbunda 1988; Helitzer-

Allen and Makhambra 1993; Twa-Twa 1995). A fourth set of data is drawn from the information about the preparation of young girls for womanhood among various tribes of Uganda, with particular attention to the practices among the Baganda. These practices will be related to the upsurge of concern for the *defilement* of minors in Uganda and to the point that a significant proportion of female HIV infections occur in very young girls, and that the circumstances of those infections require greater attention than is possible within a research focus on adult sexual practices. The bulk of the information comes from the qualitative study of 'Household Functioning in the age of AIDS' being conducted in the districts of Rukungiri, Masaka and Kabarole (see Map 1).

**Map 1**  
Uganda districts



**Course of HIV/AIDS**

Central to the exercise of estimating the timing of infection from reported AIDS cases is the understanding of how the natural history of HIV/AIDS can assist the establishment of some

broad parameters upon which the exercise can be based. The landmarks in the course of infection from HIV and the progression to AIDS-related conditions (ARC) and the development of full-blown AIDS are based on scientific information which is constantly under review, because of the complex nature of the virus and the associated diseases. But in general the landmarks are as follows:

### ***Exposure and infection***

Sexual contact between an infected individual and an uninfected person (a discordant couple) is not a guarantee of infection. This is because of the relative difficulty of transmission of infection under some conditions which are not fully known. But the outcome of those conditions is that it is easier to pass the virus from an infected male to a female in a heterosexual contact than vice versa. The probability of infection from a sexual contact (Sewankambo et al. 1987) varies with such other considerations as the circumcision or non circumcision of males, the presence or absence of genital tract infections, and the stage of progression, and consequently, the infectivity of the person to whom the sexual partner is being exposed (Hyman and Stanley 1988).

In effect, it is often impossible to tell which particular episode of sexual contact produced infection, especially, when individuals have a fairly active sexual life and have a number of partners within short periods of time. The situation is further compounded by the fact that people do not usually get themselves tested after every sexual contact and AIDS does not have a short incubation period as is the case with some other STDs. In spite of these difficulties in establishing the specific occasion of exposure, it is now well established that the next stage of the infection is that of seroconversion.

### ***Seroconversion***

This takes place at a period of three to six weeks after infection. The event of seroconversion is marked by a flu-like episode which soon clears and may not be remarkable in any other way until viewed in retrospect, when the individual may have moved on to other stages of the disease. It is doubtful therefore that, other than in a longitudinal clinical study of a population, the event of seroconversion can be accurately recorded. In such a study, the presence of antibodies to the virus in the blood, which establishes the fact of infection, would not have reached a level where they can be easily detected by routine tests.

### ***'Window period of infection'***

The time between infection and the presence of detectable levels of antibodies is the period often described as the 'window period of infection' through which an individual, who in reality is infected, may escape with a false 'negative' blood test. It is when the 'negative' result has been confirmed after an interval of six months that the assurance of being HIV-negative can be accepted, that is, provided no other occasion of exposure has taken place in the interval.

### ***Latent period and infectivity***

After infection has taken place, the virus can lie dormant in a person for periods that have been documented to be as short as six months and as long as over ten years in some people, without any adverse effect of the HIV infection. However, it is equally established that those people are, in fact, infective. The infectivity of such individuals also varies through the course of the infection (Anderson et al. 1989, 1992; Palloni and Glicklich 1991). The

determinants of the duration of this latent period are not well documented in African populations; what information there is, suggests that the amount of viral 'load' at infection, the infectivity of the infecting persons and the immune status of the infected are all involved (Palloni and Glicklich 1991).

### ***AIDS Related Conditions (ARC)***

Because of the depletion of T-cells in the infected individual, the ability to fight off infection declines and the end of the latent period is marked by increasing episodes of common ailments and infections. The frequency and severity of these infections increase and draw attention to the likelihood of immune compromise. When the fact of infection has been established in those suffering these conditions, they are then recognized as being at the ARC stage of the disease; otherwise, the onset of ARC may go unrecognized. The duration of this stage can be prolonged by effective treatment of each episode, or shortened by the rapidity of health status decline which is a function of the socio-economic status of the individual. The poor, the nutritionally deprived, those with low initial health status, and the immune compromised on account of other diseases, or on account of pregnancy, run a higher risk of rapidly progressing to the full stage of AIDS (Palloni and Glicklich 1991).

### ***AIDS***

Full-blown AIDS is reached when the immune system has virtually collapsed and the individual has no capacity at all for warding off infections. This stage can also be prolonged by all of the same factors which affect the duration of the ARC stage. The most frequently associated diseases at the final stage of AIDS in Africa include tuberculosis, meningitis, chronic diarrhoea and weight loss or 'slim' (Palloni and Glicklich 1991). According to the WHO guidelines, a number of markers of the syndrome must be present before persons are reported as AIDS cases. Whilst these guidelines do not rule out the inflation of AIDS cases from other causes, they somewhat prolong the progression of the disease before they are reported and somewhat shorten the survival time for persons who are documented as AIDS cases.

### ***Death from AIDS***

In the absence of a 'cure' by either reversing the fact of infection or preventing the total collapse of the immune system, death is a certainty. Although no large-scale follow-up of AIDS cases is available for African countries, a study in Zaire of a small sample of patients admitted to hospital provides an estimate that case fatality was 50 per cent three months after diagnosis (Piot et al. 1984 in Palloni and Glicklich 1991). However, death comes more precipitately for some than for others, depending on the opportunistic infection which serves as the last straw. Some conditions kill faster than others, and the susceptibility of the individual is again a function of the various factors cited earlier.

### ***Variability of progression***

In addition to these grim facts of the course of HIV/AIDS, the following should be borne in mind in the interpretation of the stages of the diseases. The movement of any individual through the stages to death will tend to be unpredictable (Anderson et al. 1989); for example, one person may be dead within a year of infection and another at the end of a decade of infection. It is strongly suggested that Africans move through the stages rather more rapidly than is indicated for some other populations. It is not certain if the socio-economic variables

are the only explanations or if there are other environmental factors, but the result is that the AIDS cases data provide a shadow effect of the real parameter needed for effective education, motivation and change of behaviour for halting the epidemic.

Consequently, the data on individual experiences offer very limited guidance to public health response to the disease. What is required then is the aggregated experience of a representative sample of persons. The next section is devoted to an estimation of the timing of HIV infection based on a re-analysis of such a group experience.

### **Estimating the timing of HIV infection: a re-analysis of adult AIDS cases data 1982-1994**

Apart from the clinical problems of interpreting the AIDS cases data, there is a less critical problem of the under-reporting of the cases. Less critical, because there is no reason to believe that the under-reporting is systematically biased against any one group. Consequently, the main point of this section is that the reported cases are representative of the pattern of occurrence of AIDS cases in the population. Attention will, therefore, be focused on the validity of the demographic pattern of cases and how the pattern may form the basis of estimating the timing of infection.

In the very early stages of the epidemic or of the reporting of AIDS cases, the pattern is bound to be sketchy, but the cumulation of increasing numbers of cases and a clearer understanding of the dynamics of the epidemic soon alert the observer to the emerging pattern. Among the strongest evidence of the representativeness of the AIDS cases is that, with the advanced stage of the epidemic, the pattern of cases shows a convergence from country to country, although there are some very telling differences.

**Figure 1**  
**Adult AIDS cases by age, Zimbabwe 1993; South Africa 1982-93; Uganda 1982-94**

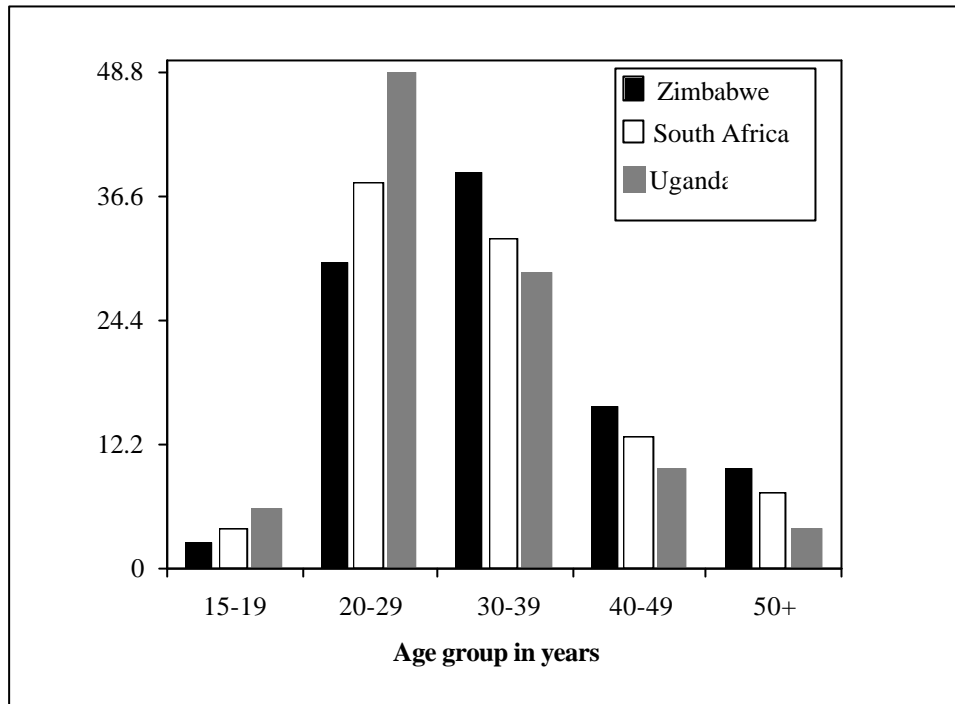


Figure 1 shows the pattern of adult AIDS cases for three African countries and for different time frames. Data for July to September 1993 in Zimbabwe cover 1,613 cases. Data for South Africa cover a ten-year period and involve 1,657 adult cases. The data for Uganda cover a 12-year period and involve about 42,000 adult cases. In spite of these differences, there is an astonishing similarity in the general shape of the curves of cumulated adult AIDS cases in these countries. This is largely a product of the predominance of sexual transmission of the HIV in the region. For all three countries, the overall male to female ratio is about 1:1.

The superficial interpretation of the pattern of cases is that because of early age of entry into sexual activity in all three countries, the cases show up in the teens, rise rapidly thereafter to a peak in the late twenties and early thirties and decline in the older ages. But then there are significant differences in the curves of cases and in the sex ratio at different age groups. The modal age group is 20-29 in both Uganda and South Africa but Zimbabwe has the modal group in the 30-39 age group; however, when the breakdown of AIDS cases is displayed by sex, some rather disturbing patterns emerge which draw attention to the potential for misinterpretation of gross data on adult cases.

**Figure 2**  
**Zimbabwe AIDS cases by age and sex July-September 1993**

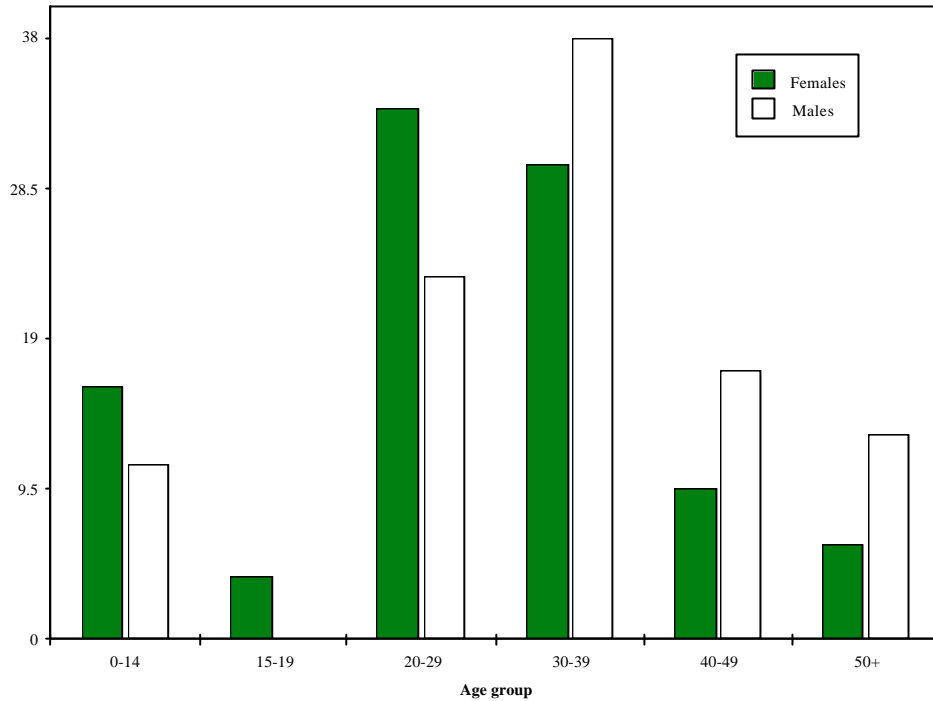
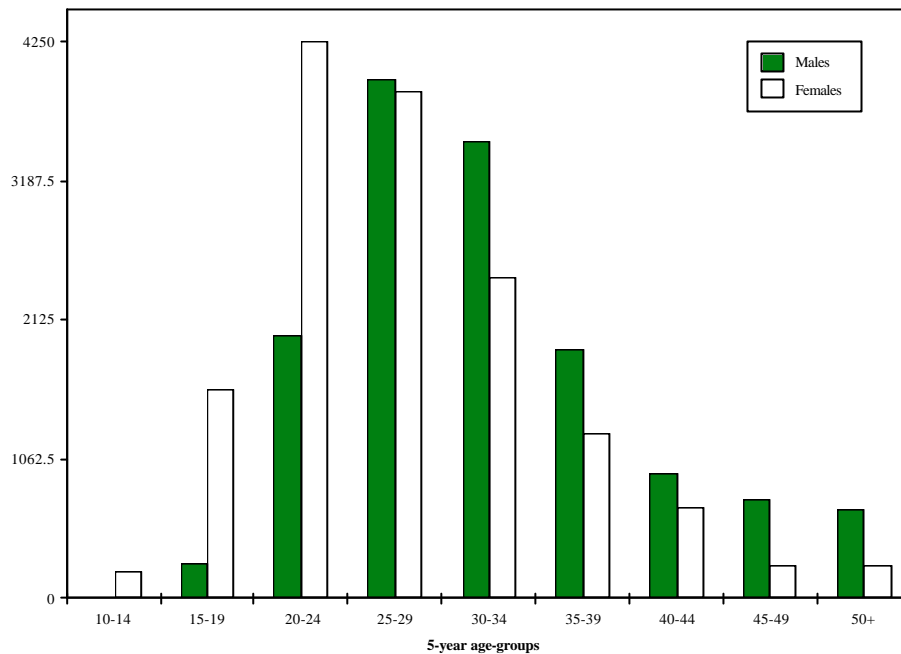


Figure 2 shows the Zimbabwe AIDS cases by sex and by age group. The female curve is very different from the male curve: whilst the male curve is nearly a normal curve, the female curve is skewed to the left and shows a peak of female AIDS cases in the 20-29 age group. An inspection of the Uganda data in Figure 3 reveals a greater similarity in the male and female curves except that the female curve shows a five-year shift to the left. In both countries, however, the major observation is the predominance of young people in their teens and early twenties.

**Figure 3**  
**Uganda AIDS cases by age and sex 1982-94 STD/ACP, MOH, 1995**





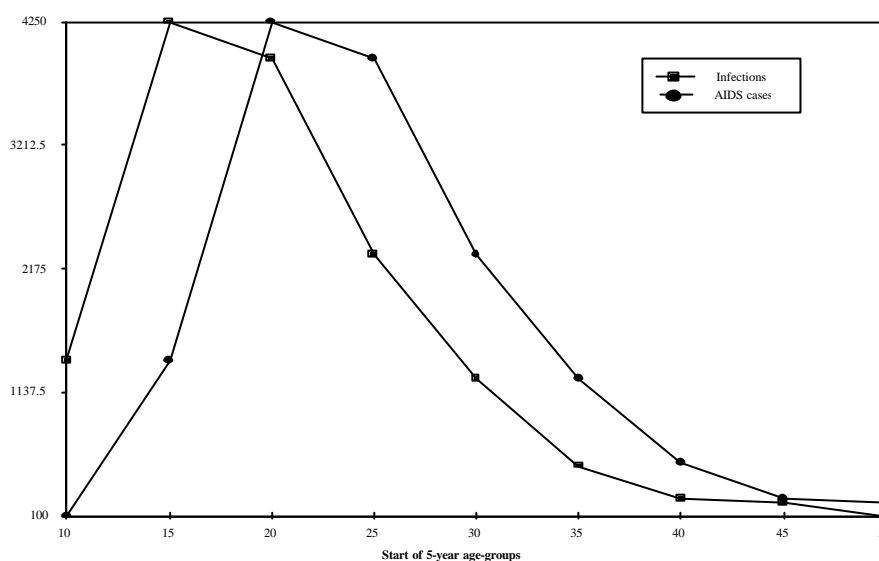
The policy response to this pattern of AIDS cases has been the aiming of some IEC programs at these young people (Ndlovu and Sihlangu 1992; Wilson, Mparadzi and Lavelle 1992); some policy concession is also made to the fact that cases occur at other ages and that everyone is at risk. However, because of the moral and religious prejudices about advocating the use of the condom, there is a hesitation to tackle the issue of just when sexual activity begins and when infection takes place so that the preventive strategies can be much better focused at the appropriate ages and institutions in society. These prejudices are strong enough to override the overwhelming evidence from demographic and sexual behaviour studies that marriage and childbearing come very early in Africa (Kajjuka et al., 1989); that there is a rapid rise in the proportion of people who are sexually active in their early teens (Konde-Lule 1994a); and that a major proportion of the reported sexual activities, including those that produce infection of STDs and AIDS, occur within marriage, and involve couples who have introduced infection through the extra-marital contacts of one of the partners, most often the males (Carael et al. 1992).

### ***The graphic estimation procedure***

After a search of the international data on infection and course of HIV/AIDS, the conclusion is inescapable that for practical purposes the variability of the course of the disease cannot be easily built into an estimation of age at infection with any great precision (United Nations 1991). But two alternatives present themselves. The first and simpler procedure adopted in this paper is to assume a uniform time of progression from HIV infection to AIDS case and eventual death; that approach takes a mean time for all cases as applicable to each case. The choice as to which duration to use is based on the pragmatic consideration that for some time to come, there is not likely to be clinical information for Uganda (F. A. Mmiro, personal

communication 1994), or for any large population for that matter, on this parameter (Piot et al. 1987). The other consideration is that a mean of five years is not only demographically convenient but conforms with the clinical impressions reported for parts of Africa which place the duration from infection to death at a mean of 6.3 years (Whiteside and Wood 1994). In effect, the mean survival from the time of reporting as AIDS case to AIDS death is assumed to be about another year and a half.

**Figure 4**  
**Age at infection and as AIDS case: Ugandan females based on five year incubation**



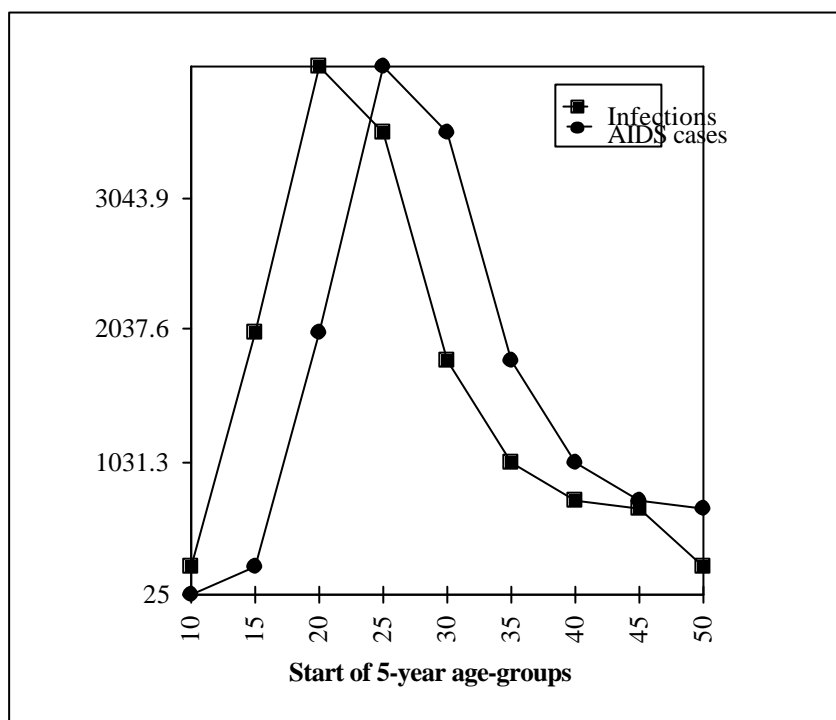
The alternative approach calls for a more subtle modelling of the relationship between the fact of infection and progression to death from AIDS, taking into account the underlying probability of the likelihood of death at given ages, if AIDS were not a factor. The nature of deaths resulting from HIV/AIDS, arising from a systematic collapse of the immune system, suggests that the probability of that death is likely to be a mathematical function of the status of the immune health of the patient before infection. In other words, the healthier a person is at the time of infection, the longer the person lives. That function can reasonably be expressed as similar to the probability of dying at any given age, before the advent of the epidemic. The life table function  ${}_nq_x$  is a rough approximation that can be adopted.

It is also possible that the fact of infection may alter the determinants of survival by altering the patient's employment, income and other socio-economic parameters. Such a reality further complicates the modelling. But for the policy and program orientation of this chapter, the general assumption of a five-year incubation period from infection to reporting as AIDS case is adopted to illustrate the main message. The outcome amounts to a shift of the curve of adult cases by five years to the left on the X-axis. The resulting curves of infection for females and males are shown on Figures 4 and 5 respectively.

In spite of the simplicity of the estimation procedure adopted, a number of implications are obvious from the curves of infection. The peak of infection comes five years earlier than the peak of AIDS cases and seven years before AIDS deaths. The peak of female infection is at age-group 15-19 and that for males 20-24. For both sexes, the gap of five to seven years

makes significant differences to the life style that can be associated with each sex at the time of infection and at the time of death. For example, the Uganda Demographic and Health Survey, 1988/89, shows that a significant proportion of females aged 15-19 could be in some form of schooling; and that just over a quarter of them were married at the time of the survey, a proportion which increases sharply to 56.3 per cent of those women aged 20-24 (Kaijuka et

**Figure 5**  
**Age at infection and as AIDS case: Ugandan males based on five year incubation**



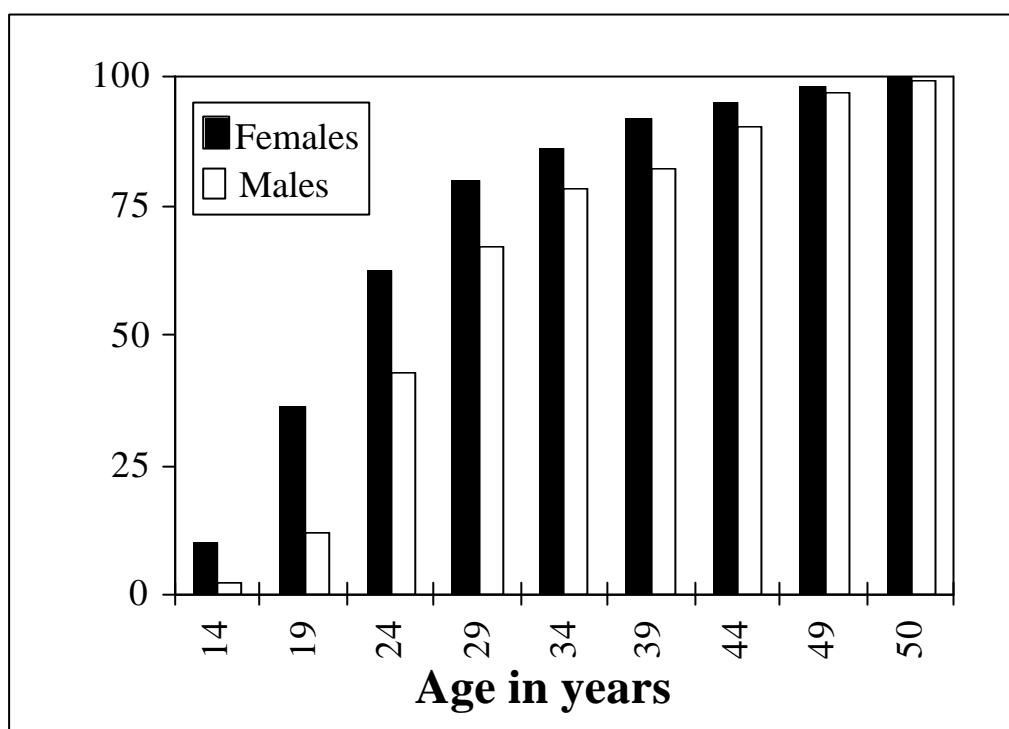
al. 1989). In contrast to the one in ten of the 15-19 age group who were living together with sexual partners, the proportion for age group 20-24 was 15.8 per cent. The implication of these lifestyle circumstances for HIV infection at the respective ages includes the probability that most females could be infected before marriage while still in educational institutions. Another group of females may eventually be infected very soon after marriage in the age group 20-24.

*Cumulative curve of infections*

When the estimated levels of HIV infection are cumulated from age ten onwards (see Figure 6), then one in ten of the female AIDS cases acquired their infection by the time they were 14

and 64 per cent by age 24. Among males, the proportion infected at the respective ages is considerably less, below 3 per cent by age 14 and at 43.5 per cent by age 24. By age 29, 80.4 per cent of female and 66.9 per cent of male infections are accounted for. More than a third of male HIV infections and a fifth of female infections take place after age 30 when virtually all those infected are in marital unions (Kaijuka et al. 1989).

**Figure 6**  
**Cumulated per cent infected by given age and by sex based on estimation**



**Evidence of early exposure to sexual and reproductive risks**

Once confronted with the startling observation of how predominant early female infection is, the next step is to look for corroborative evidence that reinforces the validity of that observation. Apart from the DHS data to which reference has been made, attention was turned to two types of information: studies of sex behaviour and contraception carried out before the advent of the HIV/AIDS epidemic which define the age criterion generously enough to include the pre-teens; and recent sexual behaviour studies, some of which have been mounted in response to the epidemic.

**Sexual behaviour and contraceptive studies**

Before the advent of the HIV/AIDS epidemic, the circumstances which tended to draw attention to the pre-teen girl-child were the changes in physical growth and the onset of menarche. Interest in these dimensions grew out of concern for the reproductive health of the girl (Arkutu 1978a, b). That concern was consistent with the level of adolescent marriage and pregnancy in Sub-Saharan Africa and its role in the determination of maternal health.

Countries of Sub-Saharan Africa have the highest levels of early child bearing in the World. In Cameroon, 23% of all births are to women aged 15-19. It is the norm in traditional African society for women to marry young. Recent surveys in northern Nigeria showed that 43% of girls aged 14 were married. Ten percent of women of reproductive age reported that they had their first child before the age of 14, and nearly one in five infants born to mothers aged 17 or under die during the perinatal period (Ladipo, Omu). A major problem is that very young mothers have not finished growing. Thus, the young mother's pelvis is relative small, and pregnancy-related complications, including obstructed labor and cephalopelvic disproportion, are more common (World Federation of Health Agencies 1987: 9-10).

These figures are confirmed in the multi-country surveys in which the data on premarital childbearing, which is a proxy for these early sexual experiences, varies from 20 per cent of all childbirths in Kenya, through 30 per cent in Liberia to 50 per cent in Botswana (Caldwell et al. 1989; van de Walle 1993; Gage and Meekers 1994).

Another area of reproductive health concern is the risk of infection from STDs arising from early sexual activity and childbearing. The risk is the direct outcome of the biological and sexual anatomical immaturity of the pre-teen girl: not only is the pelvis small, but the breaking of the hymen and the bruising of the epithelium of the vagina are other trauma that increase the risk of infection. The other co-factors of infection are of social origin: they include the age gap between girls and their first sexual partners; the density of existing infection in that older age group; and the unlikelihood that the girl will seek treatment, even if she knows of the fact of an infection. This last issue is related to the clandestine nature of some of these premarital sexual activities even if the first sexual partner is the one the girl eventually marries.

Concern with early pregnancy in Tanzania, resulting in part from very low levels of contraception in that country, drew attention to the issue of sexual activity of those under 15 (Arkutu 1978a, b). Although these studies came well before the HIV/AIDS epidemic, they provide a much needed insight into the risks that very early sexual activity constituted for young people.

Another dimension of early sexuality in Tanzania that attracted attention was that of physical growth and onset of menarche (Hautvast 1971); these two aspects of human biology are also relevant to the culture of early sexual activity and marriage in Sub-Saharan Africa. The quick development of secondary sexual organs in females, especially those who are exposed to the improved care associated with going to school, is further complication of the sexual attitudes to this age group.

The most pertinent of the Tanzania studies was the 1985 Adolescent Fertility Survey (Mbunda 1988) in which the sexual experiences of some 3,200 adolescent males and females were investigated. Although the study was focused on the conventional 12 to 24 age group (p.10), the actual range covered was much wider, being from 6 to 'over 25 years'. The tabulation of information on age at first sexual intercourse allows an appreciation of how early such intercourse was being experienced (Mbunda 1988: 30, 31). Both the youngest female and youngest male reporting such experience were in the 6-9 age group. About one in every five of males under 15 had sexual experience and the corresponding female proportion was over one in every 10. For both sexes the median age was 14.8 years. This again illustrates the weakness of the analytical strategy of taking age 15 as an entry point as opposed to the midpoint of entry into sexuality. The proportions that had had sexual experience rose to 64.6 per cent for the 15-19 age group, 83.9 per cent for the 20-24 and 77.7 per cent for those over 25 years, but that is beside the point.

Turning to Uganda, there are only a handful of studies that have addressed the sexual activity of youth in school and at a level of disaggregation that allows an appreciation of the timing of entry into sexuality (Arya and Bennett, 1967; Kisekka, 1976). In a study of new students of Makerere University, the majority of whom would have been in their late teens and early twenties, Arya and Bennett (1967) found one in four infected with STDs; and the study of Senior Six students around Kampala between 1970 and 1971 by Kisekka (1976) found that nearly all the males and just over two-thirds of the females had had sexual intercourse.

Another study among Primary 6-7 pupils around Kampala in the late 1980s reveal early initiation of sexual activity: by the age of 13 and 14, 10 per cent had had sexual intercourse (Ankrah and Rwabukwali 1987). Much more recently also, Agyei and his collaborators drew attention to the sexual behaviour of teenagers and youths and their contraceptive behaviour (Agyei and Epema 1992; Agyei, Epema and Lubega 1992; Agyei, Mukiza-Gapere and Epema 1994). But in the delimitation of the boundaries of adolescence, the studies make a cut-off at age 15; consequently, they do not form a basis for understanding the preparatory years of sexual activity which produce a given teenage and youth pattern. A recent analysis of attendance at an STD clinic in Uganda points out that 33 per cent of females and 12 per cent of males attending are aged 12-19 years (Uganda, Edith Mukisa National STD Control Program 1992).

### ***Sexual behaviour and HIV/AIDS***

Most of the studies of sexual behaviour made in Sub-Saharan Africa in response to the AIDS epidemic were on the conservative side in addressing the early stages of sexuality (Carael et al 1992). One of the notable exceptions is a study of initiation of Malawi girls (Helitzer-Allen and Makhambra 1993):

From 1991 to 1992, we conducted research involving almost 600 young females, ages 10 to 18. First we lived in two villages and worked with 258 girls. We held in-depth interviews with the girls, their mothers and grandmothers; observed the girls in their daily activities; attended initiation ceremonies; talked with the village leaders, male and female; and held focus group discussions on questions of reproductive health, sex and STD/HIV/AIDS prevention. From that work, we then developed several hypotheses, which we tested through a survey of 300 adolescents in 10 other villages.

However, from the generous interpretation of age range to be involved in the study, the authors turn to the safety of the 'adolescent' category in testing their hypotheses. Nevertheless, a number of the findings give enough indication of the onset of sexual activity to be of importance to the present discussion:

A girl is not supposed to have sex before menstruation or before initiation, according to social norms, yet seven of every 10 girls had sex before one of these occurred. The average age at first intercourse is 13.6 years (Helitzer-Allen and Makhambra 1993).

This statistic suggests that half the respondents had their first intercourse before the age of 14 years. In other words, defining the teenage or adolescent population from age 15 effectively leaves out half the population who satisfy the minimum requirement of exposure to the risk of pregnancy, STDs and HIV/AIDS.

In Uganda, the earliest case of adult AIDS was reported in Rakai District in 1982 (Sserwadda et al. 1985). That event and the rapid evolution of the epidemic from the District as a possible point of entry and outgrowth has attracted the attention of the clinical and

epidemiological community to the area; the attention has yielded a number of helpful observations on the natural history of HIV/AIDS in that district of Uganda. There are significant variations in HIV seroprevalence from area to area and from village to village (Wawer et al. 1991). Information is available about the production of new infections and about the possibility of some behaviour change, especially in the extent of multiple sexual partnership. However, there is, as yet, only limited information on the central issue of the timing and correlates of infection (Konde-Lule 1994b).

### ***School-based studies of sexual behaviour and risks***

There are various ways of establishing the patterns of pre-teen and teenage sexual behaviour and risk taking. One approach is to study the institutionalized population in schools (Owuamanam 1982; Wilson, Greenspan and Wilson 1989; AMREF 1993) and in other organized groups (Wilson, Lavelle and Hood 1990). Although this omits the out-of-school population who may be significantly different in behaviour, it is a simpler alternative for the methodological convenience it offers. However, the cultural and social barrier between researchers and the study population may be the real problem that has set a limit on the study of young adolescents in or out of school. Researchers assume an arbitrary cut-off point of anything between 15 and 18 years as the entry point for eligibility for sexual behaviour studies. Parents, especially in this era of AIDS, would like to believe that their children are too young to be involved in voluntary or involuntary sexual activity, and put an arbitrary age limit on their participation in sexual behaviour surveys. Meanwhile, mass media reports of school based sexual activities and resulting pregnancies are on the increase. It is against the background of the varied interests that the studies of school-age sexual behaviour in Uganda must be seen. The decision to rely on information on school population studies, however, can be justified in the case of rural-based schools where the gap between the in-school and out-of-school youth behaviour is not as great as that postulated between rural and urban youth (Agyei et al. 1992).

### ***The Pallisa/Tororo districts school studies***

Using self-reported sexual history of 670 primary and post-primary school children aged between 11 and 24, and 'best friend' sexual history from 633 of these respondents, the study explored sexual experiences and practices among primary and secondary school pupils in the districts of Pallisa and Tororo in Eastern Uganda (Twa-Twa 1995). Of this number a fifth (123) were below the age of 15. In contrast to the usual truncation of this age group into a general under-15 category, the discussion in this paper focuses on this very category as a way of illustrating the extent of their participation in sexual activity and the predictors of such participation.

The two multi-ethnic rural districts (see Map 1) are peopled by the Bantu-speaking tribes of Bagwere, Basamia and Banyole and the Nilotic-speaking Iteso and Adhola tribes. Over 85 per cent are Christians and about 12 per cent are Muslims (Uganda Population and Housing Census, 1991). Primary education services in the districts were rated amongst the best in Uganda during the 1960s, but twenty years of political and social unrest have affected the area and only a quarter of the 6-24 year olds are enrolled in schools. Nearly all the primary and post-primary institutions in the area, and also those included in the study, are day-schools and mixed schools; there are a few single-sex and boarding schools in the area as well as in the study. Because there are few such schools, most children are ten or more kilometres from the nearest educational institution; consequently, many children of both sexes in secondary schools rent rooms in the nearest trading centres. This pattern of accommodation has some implications for the sexual experiences of the school children; the AIDS literature from

Uganda has highlighted the role of these trading centres in the dynamics of the epidemic (Berkley et al. 1989).

**Table 1**  
**Age range and mean age of some sexual practices among Pallisa/Tororo districts students**

<b>Sexual activity</b>	<b>Age range, both sexes</b>	<b>Mean age, both sexes</b>
Masturbation	11-22	15.3
Kissing	8-23	14.7
Embrace	8-23	15.7
Sexual Intercourse	7-23	15.8

Table 1 illustrates the problem of the mean statistic in the study of such incremental behaviour as becoming sexually active. The age range of transition from not being sexually experienced and becoming active is 7 to 23 for the present data set (see Agyei and Epema 1992 for the out-of-school data). The mean of 15.8 years consequently draws attention away from the real danger posed by much earlier sexual experiences, especially among females. Another consideration also is that even this distribution may still be biased against the early female sexual experience initiators who would experience a higher dropout rate than late initiators, all things being equal.

**Table 2**  
**Percentage reporting various sexual experiences by sex and age groups (own sex history)**

<b>Sexual experience and age groups</b>	<b>Male students</b>		<b>Female students</b>	
	<b>Number responding</b>	<b>Percentage experience</b>	<b>Number responding</b>	<b>Percentage experience</b>
Masturbation				
11-14	37	5	53	6
15-19	151	14	196	12
20-24	86	31	50	20
Total	274	18	299	12
Ever had sexual intercourse				
11-14	43	47	70	16
15-19	179	55	218	27
20-24	99	91	56	71
Total	321	65	344	32
Sexually active last 3 months				
11-14	20	40	11	46
15-19	98	43	58	29
20-24	90	42	40	30
Total	208	42	109	311
Condom use last sex act				
11-14	20	15	11	9
15-19	98	20	58	24
20-24	90	21	40	28
Total	208	20	109	24



Bearing this statistical artifact in mind, Table 2 illustrates the extent to which the 11-14 year olds are involved in various sexual activities, and the comparison with the older age groups. The point of the comparison is not the pattern of increases in various proportions participating in a particular activity as age increases, but to show that these activities start at early ages and do not dramatically materialize at age 15.

The amazing observation is that with the exception of masturbation which produced an increasing incidence with age among males, all the other sexual experiences show almost similar levels of occurrence among males of all age groups. In contrast, the pattern among female respondents is interesting and in some sense unexpected from general stereotypes. In the case of masturbation the increases with age replicate the pattern for males. But in contrast to the flat curve for males the increases in sexual experience among females are directly related to age. However, that is not the main point of the exercise; the revelation is the 16 per cent of 11-14 year old females who have had sexual experience. By the time of the survey, the distinction in levels of ever having had sexual intercourse disappears and all age groups are currently equally active with regard to the last three-month time frame. In fact, the youngest age group reported the highest level of current activity.

With regard to other HIV/AIDS co-factors, Table 3 shows the 11-14 year-olds are not more likely than the older males to have multiple partners, the level of this practice being about 50 per cent for all age groups. In contrast, the female report about a quarter of those having sexual experience having two or more partners. Again the very young do not differentiate themselves from the older females in this pattern.

The level of condom use with the most recent sexual intercourse is about the same for both sexes at 20 per cent for males and 24 per cent for females. However, there is the interesting departure that the overall lowest level of use is among the very young females with just under one in every ten reporting use of the condom at their last sexual intercourse. The youngest males also report the next lowest level of use.

**Table 3**  
**Extent of multiple sexual partnership among Pallisa/Tororo district students. Number of sex partners (1992).**

	Male students			Female students		
	N	One	Two +	N	One	Two +
11-14	7	43	57	4	75	25
15-19	46	44	56	29	79	20
20-24	54	59	41	26	69	31
Total	107	51	49	59	75	25

When attention is turned to the practice of some of the covariants of sexual experience, the very young students again reveal a pattern of behaviour which does not set them apart as being less at risk even though a small number and proportion of their age group may be involved in the activities. Using smoking, drinking and the use of drugs as three such covariants, Table 4 shows the degree of involvement of the different age groups in these three habits.

The overall use of alcohol is probably the most interesting of the three habits under consideration, not only because of its ready availability from home brewing but because of its general acceptability in the society. For some communities, it is part of the adult diet. Consequently, it is not surprising that just over a fifth of the male students report previous consumption of alcohol but 15.6 per cent of the female students also consume alcohol.

**Table 4**  
**Percentage reporting various social 'vices' by sex (own history)**

Social 'vice'	Male students		Female students	
	N	%	N	%
Ever drank alcohol	313	21.4	314	15.6
Ever smoked	302	9.3	277	3.2
Ever used drugs	306	2.6	303	2.0

The tobacco smoking habit is predictably higher among the males though 3.2 of the girls report a smoking habit, strange for a largely rural community and considering the relatively high cost. The habit-forming drug reported is marijuana which is grown locally and used as therapy for influenza.

At this point of the discussion, therefore, the relatively low levels of sexual experience at the very early ages are not as important as the establishment of sexual and social behavioural patterns which are to be observed almost universally later in adult life. One factor of interest is that schooling seems to create an opportunity for early initiation into these behavioural patterns. The study under discussion also confirms that the absence of parents, and the commuting from school to home offer opportunities for school students to engage in sexual encounters and participate in social activities conducive to risk taking. These patterns of childhood and teenage behaviour and their predictors have also been documented elsewhere (Elegbeleye and Femi-Pearse 1976; Kaur 1978; Mott and Maxwell 1979; Adeyanju 1981; Oronsaye, Ogbeide and Unuigbo 1982; Owuamanam 1982; Oshodin 1984; Population Reference Bureau 1992).

### **Initiation ceremonies: recruitment into sexuality?**

The school-age sexual behaviour described above is to be viewed against the background of the community's attitude to early sexuality and in the context of the preparation of children, especially girls, for sexuality. The starting point of such a discussion is the presence in most Sub-Saharan African communities of formal and informal traditional initiations for the transition of girls into womanhood. The West African forms of these initiation ceremonies include the Bundu ceremony in Sierra Leone, the fattening houses of the Annang of Nigeria (Brink 1989) and the Obutun Dance of the Ondo sub-group of the Yoruba in Nigeria. In all of these ceremonies, there are sexually explicit and implicit symbolism. The public display of the female body in minimal clothing, the instructions on how to be a good housewife and sexual partner and the appreciative response of the audience at the 'graduation ceremony' of the girls are invariable components. The occasion may also be used for the circumcision of the boys and girls in the initiation cohort (Adeokun 1990). In East and Southern Africa, the survival of these ceremonies is in its most dramatic form in the annual 'Reed Dance' in Swaziland. Here, the basic elements are present, but in addition, the cultural practice had acquired an international reputation as a tourist attraction, encouraging the development of potential porno-tourism. It has been established that the annual dance carries the actual risk of higher incidence of school-age pregnancy for the participants. The follow-up drop-out due to Reed Dance pregnancy extends to the university population.

In Uganda, the practice of a formal initiation is not universal and the substance of the ceremony varies. The practice of female circumcision for example is limited to one tribe in Eastern Uganda, the Sabiny of Kapchowa District. The Langi, Madi, Teso and the Mutoro do not have any prescribed ceremonies (Molnos 1973). Among the Bantu tribes in the south of Uganda, initiation into motherhood starts early with the elongation of the labia. This is

achieved by pulling the labia and rubbing various herbs and wild fruits into them (Neema 1994). Among the Baganda, this elongation is a precondition for marriage and is carried out before the onset of menstruation. Arrangements will be hurriedly made for effecting the elongation if it is discovered that a prospective bride has not been prepared in this way. Traditionally the aunt, that is, the father's sister (*senga*) or cousin was responsible for effecting the elongation; in the absence of this category of relations, the grandmother may carry out the procedure. This procedure can take place as early as at age eight, but with schooling and distance between daughters and their parents it may occur much later. Another effect of schooling, especially for girls in boarding schools, is that the procedure may occur in school, performed by older female fellow students. The occasion of informal sex education talks organized by teachers for the growing girls may be the trigger for the practice of the elongation procedure.

It is believed that the process of menstruation or such physical activities as riding a bicycle may result in the shrinking of the labia; consequently, a periodic repeat of the procedure may be effected. The belief is that the elongation is good for the male partner's sexual satisfaction. Ironically this elongation of the labia, particularly when they protrude, is reported to be a nuisance in the process of childbirth. The point of these details of initiation in southern Uganda is that they draw attention to a substantial handling of the labia by others. The procedure, we are informed, can be painful, but it can also be pleasurable: the response may be a function of the category of persons performing the procedure. It is possible that this patently sexually oriented preparation of young females increases their self awareness and their response to sexual stimuli earlier than would have been the case. This precocity is a possible factor in the incidence of *defilement*<sup>1</sup> of minors which is either increasing or is better reported or both.

Among the Sabiny, the initiation into motherhood starts by the removal of the labia during circumcision; for this group, the removal is aimed at limiting sexual stimulation and satisfaction. Among the Batoro, there is neither circumcision nor elongation; however, this is the group which is perceived to be very sexually responsive and active. In this connection, the proposition can be made that the circumcision status of women may have something or nothing to do with their level of sexual activity, although the test of such a proposition will not be easy.

In the meantime, the information from a qualitative stage of a continuing project on 'Household Functioning in the Age of AIDS' in three districts of Uganda (Rukungiri, Masaka and Kabarole) is providing evidence of the general role of sexual activity between minors and adult males in the development of the epidemic. In-depth interviews with key informants in the Districts of Rukungiri and Masaka in southwest and Central Uganda were conducted during January and March 1995. The District Cultural Officer (DCO), the District Probation Officer (DPO) and the District Rehabilitation Officers (DRO) were among those interviewed. According to a DPO in one of the districts, the traditional elongation of the labia among the Baganda is an experience of very young girls and it could demystify sex and create a level of curiosity in the girls to the extent that they would have no resistance or reservation when approached for sex by adults. She believes that the sentimental value attached to the practice by the Baganda is so strong that it will not be easy to eradicate; she remarked that even the educated still appreciate the practice and take it into consideration in their decision as to whom to marry.

Another cultural practice to which some sexual construction has been attached is the tendency for young girls and women in general to kneel down to older persons, especially older males. According to one of the informants, a DCO, this act of symbolic submission

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<sup>1</sup> Known elsewhere as 'carnal knowledge' or 'statutory rape'.

makes it very difficult for women to refuse advances from those whom they have acknowledged as superior. It is against the background of the potential relationship between the early initiation procedure and the submissive position of women that the issue of defilement as the real basis of recruitment into sexual activity must be viewed.

### **Extent of defilement**

There is some evidence of the occurrence of defilement in the accounts given in the press and in court cases. Discussions held with the DCO, DRO and DPO in Masaka district revealed that it is increasing and occurring in the different socio-economic levels of society in the district. Many cases are reported to the probation office but the DPO believes that the majority of cases are not reported to any legal office. The situation in Rukungiri district was not any better; the Criminal Information Division officer has had at least one case of defilement reported to his office every month in the past year. At one point, five cases were reported within two weeks. However, he also believed that many cases are settled locally in the lowest administrative unit, Resistance Council courts.

The circumstances of defilement in schools among teachers and their students and in households among male adults and orphans and house-girls were judged to be pathetic. The teachers threaten the minors with expulsion and the girls end up not revealing their problems; a similar dependence and desperation of house-girls make it difficult for them to report cases against their masters. In effect, establishing the extent of the problem is not going to be easy and the press accounts of defilement cases are but the tip of the iceberg.

In Buganda where a man is free to have sexual relations with any woman with whom he has no blood relationship, the common traditional practice of older married women fostering their young sisters puts these growing girls at risk of being sexually exploited by their in-laws. The young sisters are usually fostered by their relatives mainly to have access to better education and to help with some of the domestic chores. Another form of defilement in Masaka District was that of young boys by elderly 'reconditioned' women. The affluence of some of the women, some of them AIDS widows, makes it possible for them to lure the young boys into equally cohesive and illegal sexual relationships. Such cases are, however, hardly reported.

There is a view that the advent of the HIV/AIDS epidemic is increasing the cases of defilement through the belief of some adults that young girls are still free from the virus; but this is not accepted by our key informants. They point out that most cases that are reported involve people who are not very knowledgeable about the virus and are not in a position to make the intellectual connection between avoiding infection and having sex with minors.

### **Traditional and modern legal management of defilement cases**

There are traditional arrangements for settling defilement cases in both districts. A curse and excommunication from the clan are two of the punishments given to the offenders. It should be noted that the society is more worried about the social misfortunes believed to result from the incidence of defilement for both parties than the legal rights of the victims; for instance in Mbale District there are rituals which are performed after the discovery of defilement: a sheep is offered, victims are washed with special herbs and certain food is cooked and eaten by the affected families.

The modern legal system sentences the guilty defiler to death and anybody suspected of attempted defilement is sentenced to a prison term of from 19 years to life. In spite of the severity of the punishment or perhaps because of it, the officers expressed their concern about the difficulty of enforcing the laws. The need to have corroborative adult evidence and medical evidence to convict, makes it almost impossible for cases to succeed in the courts of

law. In both Rukungiri and Masaka Districts, parents of victims first try to settle the cases through the RC system. It is after they fail to agree upon a just decision among the parties that they refer the cases to the courts of law. The DCO in Masaka observed that ever since defilement became a capital offence, the reporting of cases in Masaka District has dropped drastically. The DPO in the same district expressed serious concern about the frustrations of litigants when cases of actual and demonstrable defilement are reduced to attempted defilement by colluding medical examiners. On the basis of the false medical reports the courts are forced to give lighter sentences. Another way in which the legal system is compromised is that the prevailing levels of poverty encourage parents to accept out-of-court settlement of cases because the accused are prepared to pay 'damages' as an alternative to facing the courts and a possible death sentence.

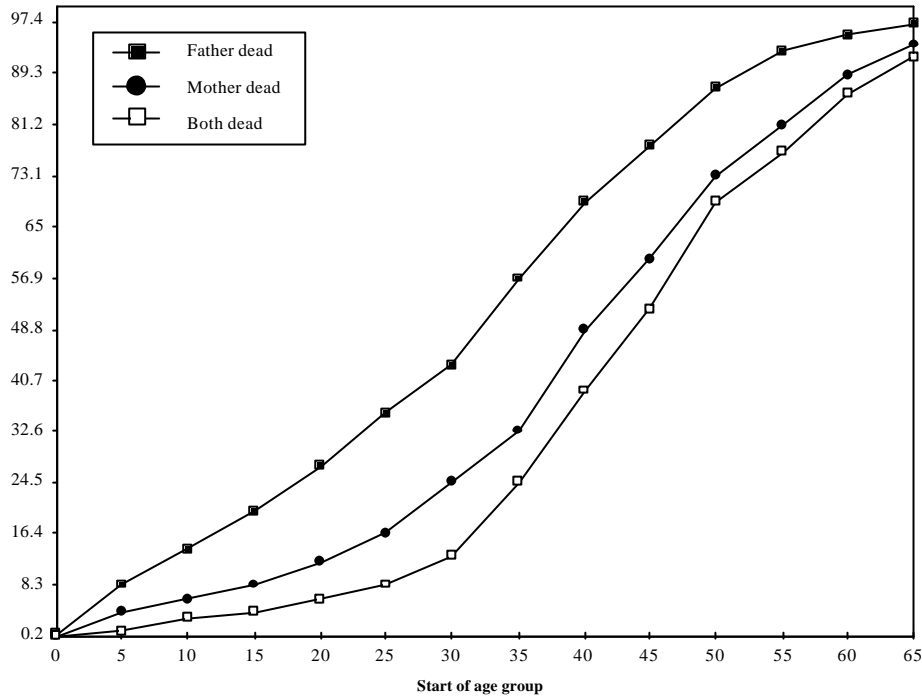
### ***Social disruption and sexual exploitation***

Given the prevailing cultural climate of early sexuality and the ambivalence about the criminalization of 'defilement', it is pertinent to explore the impact of the more than two decades of social disruption through which Uganda has passed and the degree to which that disruption is aggravating the problem of early entry into sexuality through voluntary or involuntary sexual relations. The disruption affected, in one way or the other, the lives of more than two-thirds of the total population born before the advent of the NRM regime in 1986. The elements of that disruption include wars, refugee movement within and across national boundaries, military movement and a rapid electronic dissemination of pronography.

In the case of Uganda, these events in conjunction with the HIV/AIDS epidemic produced a huge orphan population, probably unmatched elsewhere in Sub-Saharan Africa. An inspection of parental survival status from the 1991 census (Figure 7) reveals the extent of the problem (Uganda Population and Housing Census 1991). The result is the need to operate various forms of child placement arrangements under traditional, governmental as well as non-governmental organizations. These child placement arrangements can produce, and are producing some opportunity for sexual exploitation of minors, especially female ones. As the HIV/AIDS epidemic devastates families and households, calls are made on increasingly distant links to find succour for orphans. This includes the use of such orphans as house help and child minders. In the private initiatives for establishing some form of homes for the orphans, a number of inadequately supervised facilities are springing up. In both of these situations, some evidence is emerging of the role of some male adult care givers in the exploitation of the children in their care. The prevailing culture of the submissiveness of young females to their superiors makes resistance to the attentions of the adults very difficult.

At the other extreme of the orphanhood problem are the huge numbers of young orphans of both sexes who have no living arrangements made for them. The state of destitution of such children makes them prime target for those who, through force or inducement, obtain their sexual services. What these minors do after their exploitation is a matter of speculation: if they leave the service of the exploiting male they have very limited options other than seeking marginal employment in the service sector, often in sexually exploited positions. In effect, those who acquired infection without having had multiple sexual partnerships turn to acquiring further sexual partners for survival.

**Figure 7**  
**1991 parental survival status (percentage of population in age group)**



## Research and policy implications

### *Study of pre-teen sexual practices and contacts*

The one major research implication is the need to supplement the present emphasis on multiple sexual patterns with some understanding of the circumstances of entry into sexual activity by young people. This will involve a study of pre-pubertal sexual practices and contacts with adult partners. The methods will of necessity be multi-disciplinary as the domain of childhood sexuality cuts across the psychological, medical and population sciences. The coverage of such studies must be comprehensive and include 'street kids' as well home based and institutionalized children.

### *Helping teenagers to postpone sexual involvement*

The real possibility of using the school system as a means of helping teenagers postpone sexual involvement is one which both family planning objectives, modernization and demographic transition arguments and HIV/AIDS control targets should suggest. The logic goes beyond integration of family life education into the school curriculum or the passing on of IEC messages to the school youth. It requires a program of behaviour change in which the increases in knowledge are matched by the free access to contraceptive services. The

graduates of the school-based program will benefit not only from a reduced risk of pregnancy (Howard and McCabe 1990) and infection, but from an increased likelihood of completing their education and entering adult life with a less pronatal view of reproduction.

With the close link established between alcohol consumption, drug use and the level of sexual activity elsewhere (Mott and Haurin 1988), and in Uganda (Twa-Twa 1995), one way of reducing risky sexual behaviour is to approach this objective through the indirect control of the adverse and deviant social behaviour associated with risk taking. This approach calls for an improvement of the school environment and the discipline of both students and staff of these institutions.

### ***Kids should know about condoms***

TOULOUSE, France — Paris mayor Jacques Chirac, the frontrunner in the French presidential election campaign, feels children should be taught 'at a fairly early age' how to use condoms to prevent AIDS. 'Let's speak frankly, even [if] I know this can shock many families,' Chirac said during an election campaign stop in the southern city of Toulouse. 'AIDS is a dramatic reality and is getting worse. There is a risk of death. We must therefore explain to young people at a fairly early age how to use a condom.' France has the highest rate of AIDS infection in Europe. (*New Vision*, 16 April 1995:14).

It is apparent that the idea of introducing preventive measures at early ages makes sense. It is equally obvious that such measures are going to be resisted by conservatives and by religious groups. However, the rage of the epidemic in a country like Uganda is such that the logic of what appears, at first, to be a panic reaction may become inescapable. How this program of aggressive social engineering can be implemented needs no re-invention. It is operational in Thailand where the condom is being introduced into nurseries.

### ***Resolving the conflict between culture and the law on defilement***

A number of reproductive health issues in sub-Saharan Africa bring cultural practices into direct conflict with desirable medical options; attempts at resolving the conflict through legislation have not been very successful. In the case of defilement, the culture of early marriage and early childbearing makes the implementation of laws so much more difficult; the solution will appear in the education of the public in the medical as well as the social problems of such early sexual activity. Reducing the ways by which minors are exposed to exploitation appears to be a supplementary policy and program option. Attractive as same-sex schools are, the inequality of the sexes at all levels of school registration and in the provision of teachers make such an option inpracticable.

### ***Better documentation of AIDS cases***

The openness of the Ugandan Government has been a catalyst in the documentation of AIDS cases in the country. A logical next step is to make sure that some effort is made at establishing the clinical information that may assist the estimation of the time of infection since the information is important to a further clarification of the role of the onset of sexual activity in the propagation of the epidemic.

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