Older people’s sexual behaviour and HIV risk in five high prevalence sub-Saharan African populations

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Abstract

HIV prevalence in older people is expected to increase rapidly in sub-Saharan Africa due to declining mortality in HIV infected adults. New research also suggests that sexual activity at older ages may cause secondary peaks in HIV incidence. Research and policy in Africa has largely overlooked high risk sexual behaviour in older people. Using data from five population cohorts (Tanzania, Uganda, Zimbabwe and South Africa), we compare sexual behaviour, marriage, partnerships, and condom use patterns and trends in people aged 40-60 years. The majority of older people are sexually active in each site. Preliminary site-specific findings suggest that HIV prevalence is higher in the marital status categories associated with a higher rate of multiple partner acquisition i.e. polygamous marriage, remarriage and being separated, widowed or divorced; that widows and widowers have exceptionally high HIV prevalence; and that older men are significantly less likely to use condoms than younger men.
Introduction

HIV prevalence in older people (40 years and older) is expected to increase rapidly in sub-Saharan Africa due to the declining mortality in HIV infected adults attributable to increased access to public HIV treatment [1, 2]. The 2006/7 Swaziland demographic and health survey found that HIV prevalence in women and men 50 years and older was 14% (12% in women, 17% in men) [3]. In rural South Africa (2003/4), data from a population-based survey estimated HIV prevalence in resident men aged 40-44: 30% (25-36), in men aged 45-49 years: 22% (18-28), and in 50-54 year old men: 19% (15-25). In contrast, HIV prevalence in resident women aged 40-44 years was 26% (23-29) and 21% (18-24) in 45-49 year olds [4].

Studies in Africa and elsewhere have shown that HIV infected older people experience unique health, psychological, social and treatment challenges [5-8]. Furthermore, recent findings from comparative analyses of population-based data in sub-Saharan Africa suggest that patterns of sexual behaviour at older ages may also result in secondary peaks in HIV incidence [9].

In contrast to our knowledge about HIV/STDs sexual risk behaviours in young people in sub-Saharan Africa, little research or intervention efforts have documented or targeted high risk sexual activity behaviour in older people. HIV epidemiology at older ages has received less attention in large part because of the relative scale of the HIV incidence peak in younger ages, however, assumptions about sexual activity in older people and an absence of data on sexual risk behaviour and HIV status in older ages have also contributed to the research and policy gap. This despite previous public health concerns about older people's vulnerability to HIV and STDs in retirement communities in the US [10-12].

In this paper we describe and compare population-based longitudinal survey data from Tanzania, Uganda (two sites), Zimbabwe and South Africa on sexual behaviour, marriage, and partnership in people aged 40-60 years. The study is part of a larger programme of research conducted by the ALPHA Network. The Wellcome Trust-funded collaborative network aims to maximise the usefulness of data generated in community-based longitudinal HIV studies in sub-Saharan Africa for national and international agencies involved in designing or monitoring interventions and epidemiological forecasting (See www.lshtm.ac.uk/cps/alpha/).

Aim

To explore sexual behavior indicators of HIV risk in men and women aged 40-60 years in five African cohorts (Tanzania, Uganda (two sites), Zimbabwe and South Africa).

Specific Objectives

To compare and contrast sexual behaviour indicators in five populations, subgroups defined by gender, age (40-49 years vs 50-60 years), and marital status (never married, monogamously married (first marriage vs remarriage), polygamously married, and separated/divorced/widowed). The following HIV risk indicators will be explored:

1. Proportion who are sexually active in the past year
2. Proportion reporting condom use at last sex
3. Proportion reporting more than one partner in the last 12 months among sexually active individuals
4. Median age differences and interquartile range within partnerships
Work leading up to the paper

Recent modelling of HIV incidence data from six African cohort studies by Zaba et al, observed secondary peaks (or at least saddle points) in almost all of the age-specific incidence schedules [9]. Figure 1 shows the smoothed hazard rate for HIV incidence for each site, having normalised each curve using the peak incidence value and calculating age relative to the peak incidence age for each specific curve to allow direct comparison. The authors also identified a tendency for the age-schedules of incidence to become wider over time, suggesting older individuals also engage in risky sexual behaviour. They speculate that the cause of the secondary peaks (and the increasing age dispersion in mature epidemics) may be a consequence of the impact of HIV on marital stability.

The level of sexual activity by age in four of the six cohorts (Zimbabwe, Uganda (two sites) and South Africa) has been described in a cross-site comparative analysis [13]. Todd et al shows the proportion of respondents who reported being sexually active in the past 12 months. In South Africa and Zimbabwe about 90% of men aged 50 years or older reported sexual activity in the past year. In Uganda this proportion decreased with age, with approximately 70% sexually active after age 60 years. The proportion of women who reported being sexually active in the past year declined in all sites after the age of 40. By the age of 50 years, less than 50% of women reported being sexually active in Masaka and Rakai. In Manicaland and Umkhanyakude, a similar, but smaller, decline in the proportion who reported being sexually active at older ages was observed.

Using data from the Tanzanian cohort study, Zaba et al (2008) have highlighted the importance of considering sexual partnership numbers and risk behaviours in the context of marital status because HIV prevalence is higher in the marital status categories associated with a higher rate of multiple partner acquisition i.e. polygamous marriage, remarriage and being separated, widowed or divorced [14]. Differentials in HIV prevalence by marital status are also shown in new findings from the Zimbabwe cohort [15]. Lopman et al (2008) report exceptionally high HIV prevalence in widows (61%, n=413) and widowers (54%, n=31) in rural Zimbabwe.

Marriage rates and patterns are heterogeneous across countries in sub-Saharan Africa. Comparing data from cohorts in Uganda, Zimbabwe, Tanzania and South Africa, Marston et al (2008) have shown that marriage not only varies between populations but that marital states within a population diversify with age [16].

This is illustrated by data from the rural Ugandan cohort. Although marriage by the age of 30 is virtually universal, Kasamba et al (2008) report that 1 in 5 men and women 45 years and older are separated or divorced. As older people move into these marital states, new opportunities for reconnecting to sexual networks with or without remarriage present themselves. Lopman et al have suggested that, at least in Zimbabwe, widows are likely to have a high rate of partner change, and that widowers took new partners with a median age of 10 years younger than themselves.

In South Africa, McGrath et al (2007) using cohort data from a rural population found that men aged 40-54 years were similar to men aged 25-39 years with respect to the proportion who reported sexual intercourse in the last 2 weeks [17]. However, they were significantly less likely to have ever used a condom and to have had protected sex in the last 2 weeks. Men aged 40-54 years were also significantly less likely to have had a new partner in the last 12 months or to be in a concurrent relationship, nonetheless, 24% and 14% reported these HIV-risk behaviours respectively. Very few women aged 40-49 years reported concurrent partnerships and only 3% reported ever having used a condom.
Data Sources

This paper uses data from five cohort studies. Detailed descriptions of the setting and of the study methods used at each of these sites is provided in previous publications [18-22]. Sexual behaviour data has been collected more than once in all sites (Box 1). Data collected includes reported sexual activity in the past year, condom use at last sex, number of partners in the last 12 months, marital status, date of birth, and sex. Although sites asked the questions in a different ways and selected slightly different populations, data are collected consistently within each site. A recent workshop hosted by ALPHA Network supported intra- and inter-site analyses of these sexual behaviour data and culminated in a special issue of Sexually Transmitted Infections. This paper extends the cross-site comparisons and benefits from our knowledge of the strengths and limitations of these datasets.

Box 1. Contributing cohorts and sexual behaviour data collection

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<tr>
<th>Manicaland cohort, Zimbabwe</th>
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<td>In the Manicaland cohort, in eastern Zimbabwe, three sexual behaviour survey rounds have been undertaken between 1998 and 2005.</td>
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<th>Kisesa Demographic Surveillance System (DSS), Tanzania</th>
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<td>In the Kisesa cohort, in the Mwanza region of Tanzania, sexual behaviour surveys were conducted in 1994, 1997, 2000 and 2003.</td>
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<th>Masaka DSS, Uganda</th>
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<td>In the Masaka cohort in south-western Uganda, behavioural questions have been included in ten annual survey rounds since 1996.</td>
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<th>Rakai cohort, Uganda</th>
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<tr>
<td>In the Rakai cohort, in south-western Uganda, sexual behaviour surveys have been conducted annually since 1994. Questions about sexual partners in the past 12 months have been asked using the same protocol between 1999 and 2006.</td>
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<th>Umkhanyakude DSS, South Africa</th>
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<tr>
<td>In the Africa Centre Demographic Information System (ACDIS) in Umkhanyakude district, kwaZulu-Natal, South Africa, four behavioural survey rounds have been completed between 2003 and 2007.</td>
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References

11. Drummond T. Never too old. Sexually active seniors are one of the fastest-growing HIV-infected populations in the U.S. Time 1999;84.

Figure 1. Smoothed, normalised age-specific incidence hazard rates by sex and study site (Reproduced from Zaba et al, 2008)