HIV and AIDS in the City: Prevalence among Residents of Informal Urban Settlements in Nairobi, Kenya

Nyovani Madise[1], Abdhalah Ziraba[2], John Kebaso[2], Samoel Khamadi[3], Vincent Okoth[3], Matilu Mwau[3]

Institutional Affiliation:
[1] School of Social Sciences, University of Southampton.
[2]African Population and Health Research Center
[3] Centre for Virus Research, Kenya Medical Research Institute

Introduction

The higher HIV prevalence in urban compared with rural areas has long been documented in many African countries. However, the recent debate about affluence and HIV prevalence coupled with evidence of marginalisation of the urban poor in several African cities has led to our interest in the heterogeneity of HIV prevalence in urban areas. In Kenya, the majority of the urban poor reside in informal urban settlements (slums). Residents of slums have worse health outcomes compared to other sub-groups in the country. They also have riskier sexual behaviour such as lower ages at first sex and higher levels of multiple sexual partnerships (APHRC, 2002; Dodoo et al, 2002; Zulu et al. 2003). Thus we would expect higher HIV prevalence among residents of informal urban settlements than in other sub-groups in the population. A limitation in comparisons between urban sub-groups so far has been the lack of reliable data. Since the turn of the century the nationally representative Demographic and Health Surveys (DHS) are conducting population-based HIV testing. However, identification of informal urban settlements from DHS samples is not straightforward and moreover, the number of sampled individuals from these settlements are often too small for robust estimates of HIV prevalence. We present preliminary results of an on-going HIV sero-prevalence survey that we conducted in two informal urban settlements of Nairobi City. The findings are compared with those from the 2003 Kenya DHS of Nairobi, Kenya.

Data and Methods

A random sample of about 6,260 men and women aged between 15 and 54 years was drawn from two informal urban settlements in the city of Nairobi (Korogocho and Viwandani) for an HIV sero-survey, which was conducted from August 2006 and is expected to be completed by January 2008. The sampling frame was a database from a demographic and health surveillance of 55,000 inhabitants of Korogocho and Viwandani which has been in place since 2003 and is conducted by the African Population and Health Research Center. Dried blood samples were collected from study participants through a finger prick and HIV sero-status was established using Determine® and Uni-Gold™ rapid test kits at the Kenya Medical Research Institute (KEMRI) laboratories. KEMRI's HIV-Particle Agglutination test kit was used as a tie breaker where the results between the two tests were discordant.

Preliminary Results

Approximately 20% of the sample had out-migrated or were temporarily absent and could therefore not be traced. About 1700 have been contacted so far in Korogocho and of these 78% gave blood samples. In Viwandani, where fieldwork started four months later, 1,200 study participants have been contacted so far and 52% of these have given blood. The proportion of males among those bled in Viwandani is lower than that of males in the sample (29% compared with 40%) while the figures for Korogocho are comparable (32% bled compared with 36% males in the sample). Analysis of the preliminary data comprising 1304 people in Korogocho and 620 in Viwandani who were bled shows that HIV prevalence is about 13% in the two communities (14% in Korogocho and about 10% in Viwandani). There are no sex differences in HIV prevalence in Korogocho, but males have slightly lower prevalence in Viwandani though not statistically significant (see Table 1). Comparison of these results with those from the 2003 KDHS shows higher prevalence of HIV among teenagers in the slums compared with 3% in Nairobi as a whole (unadjusted OR=2.1 in Korogocho; 3.6 in Viwandani). Higher HIV prevalence than for Nairobi City as a whole is also observed among those aged 45 years and older (OR=3.4 in Korogocho and 1.7 in Viwandani) (see Figure 1). The two settlements differ in some important ways. Viwandani is less poor, on average, compared with Korogocho and its inhabitants have higher education. The Korogocho settlement is more established, while Viwandani has higher migration rates and higher proportion of men with non-resident spouses. Differences also exist in ethnic composition; Kikuyus and Luos are the dominant groups in Korogocho, while Kambas and Kikuyu are the largest groups in Viwandani.

Conclusions

We conclude that inhabitants of informal settlements in Nairobi City have higher HIV prevalence than Nairobi City as a whole. Teenagers and older people appear to have higher HIV prevalence relative to people of the same ages in Nairobi City. Differences by location exist, but these appear to be a result of differences in ethnicity, age, and gender compositions between the two settlements.

The way forward

We aim to re-do the analyses with larger samples once the fieldwork is completed. The HIV prevalence is not expected to change with an increased sample size but differences by background characteristics may become more or less significant. We plan to conduct analyses to see if the non-respondents differ from the acceptors in important ways and if their exclusion is likely to bias the results. We also will examine HIV prevalence by duration of residence in the slum location. Multivariate analyses were be conducted— for example goodness-of-fit tests to determine differences in HIV prevalence by selected characteristics between slum residents and those from Nairobi City, and logistic regression to identify determinants of HIV status.

References

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Table 1 HIV prevalence by slum and selected characteristics

Characteristic	Korogocho[a] N=1304	Viwandani[a] N=620	Nairobi City[b] N= 667	All Kenya[b] N=6194
Sex				**
Male	14	9	8	7
Female	14	11	12	9
Age group	***		***	***
15-19	6	10	3	1.6
20-24	10	7	5	6
25-34	17	11	14	10
35-44	19	15	17	10
45+	23	13	8	5
Ethnicity	***	**	***	***
Kamba	16	8	12	5
Kikuyu	9	11	7	5
Luhya	15	8	6	7
Luo	22	27	19	22
Other	11	9	6	7
Total	14	10	10	7

* p-value < 0.05; ** p-value < 0.01; *** p-value < 0.000
Source: [a]HIV Sero-prevalence Survey in Nairobi's urban informal settlements, 2006-07; [b]Kenya DHS 2003

Figure 1: HIV Prevalence in two Nairobi slums and Nairobi City by age-group