HIV status and marriage dynamics in a rural community in Kisesa, Tanzania

Milly Marston[1], Takudzwa Sayi[2], Georges Reniers[2], Richard Gregory[1], Mark Urassa[3] & Basia Zaba[1]

[1] London School of Hygiene and Tropical Medicine
[2] Princeton University
[3] National Institute for Medical Research (Tanzania)

Background

HIV status-based partnership mixing patterns have received little attention in the HIV prevention literature, but could be important for understanding trends in HIV incidence, and offer opportunities for policy intervention. In this study we evaluate the effects of HIV status (and HIV status configuration of the couple) on marriage dissolution and remarriage across multiple rounds of sero-surveys in the Kisesa Demographic Surveillance Site in northwestern Tanzania. Preliminary results suggest that HIV positive status significantly increases the risk of union dissolution (both widowhood and divorce) and lowers remarriage rates. These effects are particularly strong for women, and a modeling study suggests that such a pattern contains the propagation of the virus but also contributes to the female disadvantage in the sex ratio of infections {Reniers, 2011 #451}.

Our preliminary results concerning marriage dissolution are consistent with three other studies that have assessed the effects of HIV status on marriage outcomes; Carpenter et al {, 1999 #52}, Grinstead et al {; , 2001 #406}, and Porter et al {, 2004 #97}. These studies are, however, based on relatively small samples and do not distinguish between individuals and couples who are HIV status aware and those that do not know their HIV status. We suspect that information about one's partner and one's own HIV status will play an important role in marriage decision making patterns with perhaps hidden benefits to (couples) HTC {Reniers, 2011 #451}.

With regard to partnership formation, we expect (and have confirmed in preliminary analyses) that HIV positive men and (particularly) women have lower remarriage rates than HIV negatives. Earlier studies have referred to this process as the *positive selection* of HIV negative women into new partnerships {Reniers, 2008 #184}, or, the *drift* of HIV positives out of the partnerships market. {Helleringer, 2007 #213}. In addition to this drifting hypothesis, we will evaluate the possible patterns of assortative mating on HIV status.

Data and method

This longitudinal analysis makes use of data from the Kisesa HIV open-cohort study. Kisesa is a ward of Magu district, in the Mwanza region of Tanzania (**Error! Reference source not found.**). The total population of the ward was 19,458 in 1994, subsequently growing (at approximately 2.5-3.0% per year) to well over 30,000 at present. It comprises a trading centre and six villages. Over 90% of the population are Sukuma, the largest ethnic group in Tanzania. Farming is the main source of income and petty trade of products such as milk, tomatoes, maize and rice is common (Nnko *et al*, 2004).

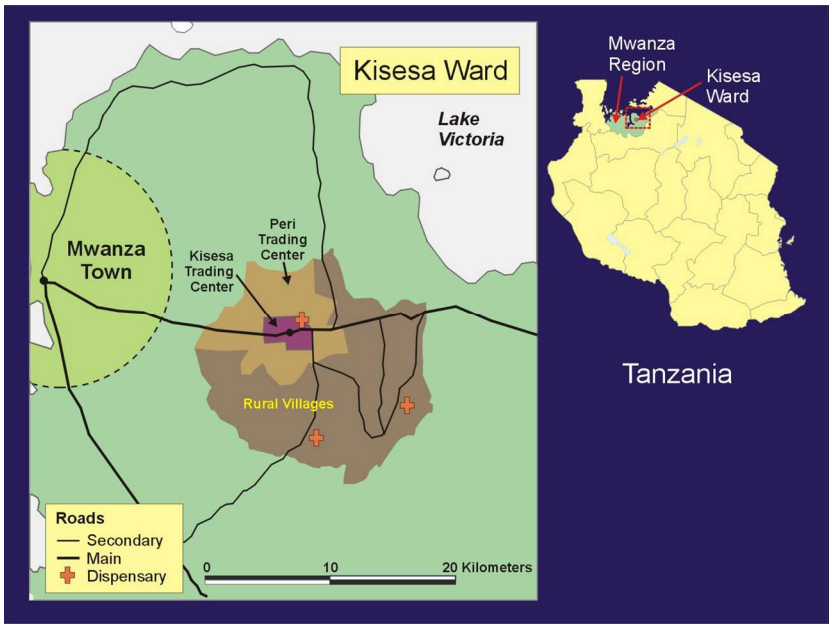

Figure 1: Map of the study site

The backbone of the open-cohort study is a demographic surveillance system established following a baseline census in 1994. Vital events are updated via household visits at regular intervals. **C**ohabiting couples were first identified in 1997, and more systematically since 2003. HIV testing was done on the basis of informed consent but without the return of the test result until 2002; from 2003 onwards we have fairly complete data on who received HTC during the sero-surveys (ever had project HTC total is now over 40%), and less complete data on who tested at a health facility in the ward. We do, however, have self-reported data on whether and where a person has had an HIV test. To date, 5 serosurveys have been completed since 1994.

We will assess the association between HIV status and marriage transitions (marriage dissolution and marriage formation). The marriage dissolution analysis will start with an individual-level analysis of marriage transitions in the inter-serosurvey interval (for each sex separately) by means of logit or hazard regression models. This will be extended by an analysis that takes marriages as the unit of analysis. Analysis of remarriage inevitably use an individual perspective. Aside from time spent single, we will also assess the characteristics of future spouses; their HIV status in particular.

Preliminary results

As a preliminary result we present the probability of separation or divorce across the survey interval by sex and HIV status, and report the p-value for a two tailed test of the difference in proportions between HIV negatives and positives (Table 1). These results are clearly indicative of a higher probability of union dissolution among HIV-positive females than among HIV-negative females. No such pattern is evident for men, which suggest that unions with HIV positive women are more volatile than unions with HIV positive men. This result is yet to be confirmed by the couple analysis, but may point to the fact that serodiscordant unions with HIV negative women persist longer than male positive serodiscordant unions. If true, this will contributes to the female disadvantage in the sex ratio of infections.

Table 1: Marriage dissolutions by HIV-status, ages 15-44:

	N ("person-intervals")	Proportion of HIV- whose unions dissolve	95% C.I.	Proportion of HIV+ whose unions dissolve	95% C.I.	z-test p-value
Females, separation/divorce only						
sero1-sero2	1390	0.06	0.05-0.07	0.12	0.04-0.20	0.084
sero2-sero3	1259	0.06	0.04-0.07	0.20	0.08-0.31	0.000
All	2649	0.06	0.05-0.07	0.15	0.08-0.22	0.000
Males, separation/divorce only						
sero1-sero2	776	0.06	0.05-0.08	0.05	-0.01-0.11	0.711
sero2-sero3	640	0.03	0.01-0.04	0	0	0.358
All	1416	0.05	0.04-0.06	0.03	-0.01-0.07	0.455