Title: Family Demographic Correlates of Men's Behavioral Risk for HIV in 14 Sub-Saharan African Countries

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Extended Abstract:

Men's sexual behaviors clearly contribute to the spread of HIV in sub-Saharan Africa, but the social contexts of those behaviors remain poorly understood. Anthropologists and demographers have emphasized the significance of African families and family systems as social structural influences on fertility-related behaviors (e.g., Lesthaeghe, 1989). Yet these institutions have received little attention from investigators seeking to understand the social contexts of African men's behavioral risk for acquiring and transmitting HIV (but see Caldwell, 1989).

This paper will use data from recent Demographic and Health Surveys to describe the relationships between family and life-course demographic variables, self-reported sexual behaviors, and prevalent HIV infection among men aged 15-49 in 14 sub-Saharan African countries. All sub-Saharan African countries with Demographic and Health Surveys with HIV testing conducted since the year 2000 will included. Sample sizes, HIV prevalence, and select demographic variables are shown in Table 1. Data from total of N=60,747 men will be used in the analysis. Country-specific sample sizes vary from 1975 in Zambia to 8010 in Uganda. The percentage living in urban areas ranges from 15.0% in Uganda to 58.4% in Cameroon, while the percent currently married ranges from 44.4% in Côte D'Ivoire to 66.5% in Niger. HIV-1 prevalence ranges from 0.3% in Senegal to 14.8% in Zimbabwe.

Variables used in the analysis are divided into three categories: (1) age, (2) family and life-course demographic variables, and (3) behavioral risk variables, risk perceptions, and prevalent HIV-1 infection. Family and life-course demographic variables to be used include education, employment status, travel away from home, marital status, number of surviving children, household composition, and relationship to the head of the household. Behavioral risk variables will include number of sexual partners in the past year, number of non-marital sexual partners in the past year, number of non-cohabitating sexual partners in the past year, transactional sex in the last year, and condom use. Risk perceptions are represented by a single indicator of perceived likelihood of being infected with HIV. Prevalent HIV-1 infection is based upon serological testing, with procedures varying somewhat from country to country.

The analytic plan consists of three stages. In the first stage, all variables in categories (2) and (3) will be tabulated as a function of age. Table 2, for example, shows the percent of men ever married according to age in 6 countries. It shows that, although almost all men in these countries are married by age 50, the marriage schedules differ markedly across countries. Nearly half of males in Malawi are married by age 25, for example, whereas many 25-year-old Kenyans remain unmarried. Similarly, Table 3 shows the percent of men reporting two or more sexual partners in the past twelve months in six countries, by age. It shows that self-reports of multiple partners very substantially across countries. Only a small fraction of Ethiopian men report

having multiple partners, whereas a substantial minority of Cameroonian men reports this behavior; Kenya, Ghana, Malawi, and Zimbabwe fall between these extremes. Moreover, the pattern of age-related change shows some variation. In all countries, men in the youngest age group are least likely to report multiple partners, but in some countries the proportion of men with multiple partners increases monotonically with age, whereas in others it off at older ages.

In the second stage of the analysis, bivariate relationships between variables in categories (2) and (3) will be examined using within country tabulations, separately for urban and rural residents. Table 4, for instance, shows the how the proportion of males reporting more than one sexual partner in the previous year varies as a function of marital status in 6 countries. In all countries, married men are more likely than their unmarried counterparts to report having multiple partners. Superficially, this pattern suggests that marriage may lead to increased behavioral risk for HIV among men in sub-Saharan Africa. Yet this interpretation may be misleading, because both marriage and the proportion of men reporting multiple sexual partnerships tend to increase as a function of age. To what extent can this association between marriage and multiple sexual partners be attributed to a spurious effect of age? This leads to the third and final stage of the analysis, in which age-standardized relationships between variables in categories (2) and (3) will be examined.

All tabulations will be implemented separately for urban and rural areas within each country, as prior analyses suggest that the underlying social processes may vary substantially between urban and rural areas in Africa (Dodoo, Zulu, & Ezeh, 2007). Multiple model-based imputations will be used for cases with missing data. Point estimates and 95% confidence intervals will be included in all tabulations. All analyses will take account of the multi-stage sampling designs and unequal probabilities of selection (Demnati & Rao, 2004).

These analyses will not provide definitive answers to causal questions about effects of family demographic variables on sub-Saharan African men's sexual behaviors or their risk for acquiring and transmitting HIV. Nor can these analyses get beyond the crude demographic categories to the meaning or significance of these factors in men's lives. Furthermore, potential inaccuracy of self-reports of sexual behaviors is widely acknowledged. Yet, in the absence of superior sources of information on sexual behaviors, these analyses will provide a useful description of the associations between men's family and life-course demographic characteristics, their behavioral risk for HIV, and their current HIV status. This will contribute to the development of hypotheses about the social contexts of sub-Saharan African men's behavioral risk for acquiring and transmitting HIV.

References

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Table 1. Description of the Sample

Country	Year	N	% HIV+	% Urban	% Married
Burkina Faso	2003	3,208	1.9	24.1	52.7
Cameroon	2004	4,814	4.1	58.4	47.1
Côte D'Ivoire	2005	4,504	3.0	47.0	44.4
Ethiopia	2005	5,484	0.9	15.2	56.2
Ghana	2003	4,529	1.5	44.9	48.6
Guinea	2005	2,708	0.9	38.6	59.2
Kenya	2003	3,363	4.6	25.4	49.9
Malawi	2004	3,114	9.7	20.5	62.9
Niger	2006	3,101	0.7	25.6	66.5
Senegal	2005	3,416	0.3	55.9	49.6
Tanzania	2004	5,658	6.3	30.3	53.1
Uganda	2005	8,010	5.0	15.0	52.9
Zambia	2002	1,975	12.5	39.7	57.8
Zimbabwe	2006	6,863	14.8	40.5	45.1

Table 2. Percent of Males Never Married, by Age

Age	Cameroon	Ethiopia	Ghana	Kenya	Malawi	Zimbabwe
15-19	90.8	97.6	99.0	98.1	96.8	99.3
20-24	67.6	73.1	75.8	79.2	52.4	75.5
25-29	30.8	31.2	39.2	32.1	18.4	29.0
30-39	8.1	6.5	10.0	7.5	3.1	5.7
40-49	2.2	1.5	1.9	1.4	1.4	1.7

Table 3. Percent of Males Reporting ≥2 Sexual Partners in the Last Year, by Age

Age	Cameroon	Ethiopia	Ghana	Kenya	Malawi	Zimbabwe
15-19	12.8	0.2	2.4	7.3	4.9	2.7
20-24	34.8	1.7	10.4	16.4	9.4	12.7
25-29	36.6	2.3	13.8	13.1	10.5	13.4
30-39	38.5	3.7	13.5	12.5	10.6	10.0
40-49	36.9	4.3	11.1	10.2	10.9	9.1

Table 4. Percent of Males Reporting ≥2 Sexual Partners in the Last Year, by Marital Status

	Cameroon	Ethiopia	Ghana	Kenya	Malawi	Zimbabwe
Never Married	21.3	0.9	6.1	10.3	6.4	6.1
Ever Married	37.9	3.0	13.0	13.0	9.8	10.9