GENDER DIFFERENCES IN THE LINK BETWEEN EDUCATIONAL ATTAINMENT AND HIV RISK

Abstract:
This paper examines gender differences in the relationship between educational attainment and HIV status across the life course. In particular, I test the thesis that educational attainment in a country with an advanced HIV epidemic is significantly associated with lower HIV risk. Using the most recent Kenya Demographic and Health Survey 2003 which included HIV testing, I first compare the relationship between educational attainment and HIV status among men and women, and then compare results across those aged below 30 – most likely to have been exposed to HIV/AIDS information in schools and early adulthood, and those aged above 30 – those most likely to have limited HIV/AIDS information. I then test 5 hypotheses to tease apart the mechanisms through which educational attainment might work to increase or reduce HIV risk, and how these mechanisms might differ by gender. Discussion and conclusion will consider the broader implications these findings might have for understanding the broader puzzle in literature examining adult health disparities relating to educational attainment in other countries.

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Introduction:

According to the latest UNAIDS (2006) epidemic update, 63% (24.7 million) of people living with HIV/AIDS are located in sub-Saharan Africa which contains only 10% of the world's population. Further, two thirds of new infections are in this region. Women now make up 59% of Africans living with HIV/AIDS, and young women aged between 15 and 24 yrs are at particular risk. On average young African women are three times more likely than young men to have HIV (UNAIDS 2005). However, over the life course, women's risk declines relative to men's, and older men's HIV risks eventually equal and then surpass older women's HIV risks.

Why is there a gendered disparity in HIV rates between men and women across the life course? Previous research forms an important baseline for this investigation. Basic bio-physiological differences relating to susceptibility and transmission probabilities of the HIV virus, and higher susceptibility to STD infection are key. Exacerbating this are individual and cultural factors such as condom use, age at sexual debut, coital frequency and early marriage (Clark 2003). Sexual network factors are also important in both number and concurrency of sexual partners a young woman has (Kretzschmar and Morris 1995). At a macro–structural level, labor migration which results in families separated for long periods of time, and a heightened potential for extramarital affairs plays an important role in HIV risk across much of southern Africa (Lurie et al 2003, Hunter 2002).

In this paper I focus on one factor that has been receiving particular attention in the literature – educational attainment. An irony in the literature has been that the countries which made the most progress in terms of girls' education (Kenya, Namibia, South Africa, Zambia and Zimbabwe, for example) are also among the countries most affected by the epidemic. All these countries are among the top 15 most affected countries (PRB 2006); thus Gregson et al(2001) ask whether HIV is an "epidemic of development." Much has been made of the benefits of mass education for women in particular in the developing world, resulting in reduced fertility, improved maternal and child health and so on. Yet Glynn et al's (2004) summary of studies on this paradox show mixed results with some finding no statistical association and others finding positive associations between educational attainment and HIV status. The current theory suggests that the association between HIV and education might vary according to the length of the epidemic in the country in question. The early stages of the epidemic would show positive associations – with more educated people being more at risk of HIV. Their increased mobility and income are associated with riskier sexual behavior at a time when HIV was little known. As the epidemic progresses, however, the relationship reverses to a negative association, with more educated people more able to take advantage of new knowledge and change their behavior (Gregson et al 2001, de Walque et al 2005). In the latter study conducted in Uganda, for example, the association between post primary educational attainment and lower HIV risk became significant but only among young women aged under 30 yrs in the 11th survey round, a decade after the first survey round. The data for this study was conducted in a rural population based cohort in a single district in Uganda.

This paper examines the extent to which this argument extends to other settings and examines what effects, if any educational attainment might have on other age groups, and men. Kenya has had an epidemic as old as Uganda, and can be considered at a late stage of epidemic. I use data from the most recent Kenya Demographic and Health Survey 2003 which included HIV testing. The advantage of this data source is it allows us to examine the relationships between educational attainment and HIV status across the life course, and the different factors that might affect those relationships. I use logistic regression on both men's and women's data merged with the HIV sample.

Analysis:
In the first part of the analysis I compare the relationship between educational attainment and HIV status among men and women, and then compare results across those aged below 30 – most likely to have been exposed to HIV/AIDS information in schools and early adulthood, and those aged above 30.

In the second part of the analysis, I test 5 hypotheses designed to tease out the mechanisms through which we might expect education to work among men and women.

Hypotheses:

Hypothesis 1: Life saving knowledge:
Education increases the likelihood of a respondent's having been exposed to HIV/AIDS knowledge in school, and to understand information that might have been disseminated

Variables: HIV/AIDS knowledge (composite measure), Exposure to mass media, Literacy

Hypothesis 2: Adopting safe behavior:
Education increases a respondent's ability to change their behavior and adopt safe behavior.
Variable: Condom use

Hypothesis 3: Proximate determinants:
Education has been shown to lead to delayed first sex and delayed age at first marriage, both of which have been shown to increase HIV risk particularly among young women and through delaying entry into these, education might reduce risk among young women.
Variables: Age at first sex, Age at first marriage

Gendered hypotheses:

Hypothesis 4: Poverty/ Wealth
For women, we might expect education to increase women's wealth. Women with more income/earning more money would be less likely to engage in transactional sex, and thus be at lower risk of HIV. For men, we might expect increased income as they age to increase their likelihood of engaging in transactional/commercial sex and thus be at greater risk of HIV
Variables: Wealth, Paid Work , Transactional sex

Hypothesis 5: Empowerment
For women, we might expect greater empowerment – decision making power over different household decisions - to lead to a greater likelihood to negotiate safe sex, and thus a lower risk of HIV
Variables: Power in decision making (purchases, going to visit relatives), condom use (especially for married women)

Control Variables: Province, Ethnic group, Number of sexual partners, Other STD infection (self-reported), marital status

Preliminary Results:
Preliminary data analysis suggests intriguing gender differences as the tables below show. Women with primary school education are almost 3 times as likely to have HIV compared with women with no education. This is true for both young and older women. Men's risk also appears to increase with educational level, though this is only significant for older men, and not for younger men.

Table 1: Women's Educational level and risk of HIV infection

	Below 30 yrs		Above 30yrs	
	HIV%	OR	HIV%	OR
No education	4.10		4.61	
Primary	8.99	2.83**	11.48	2.93**
Secondary	4.98	1.63	13.07	3.28**
Tertiary	12.48	3.21*	4.77	1.22
Total	7.82		9.99	

Statistical significance: †p≤0.1 *p≤0.05 **p≤0.01

Table 2: Men's Educational level and risk of HIV infection

	Below 30 yrs		Above 30yrs	
	HIV%	OR	HIV%	OR
No education	0.59		3.12	
Primary	2.71	2.32	7.82	4.06 *
Secondary	3.22	3.02	8.08	5.06 **
Tertiary	2.40	2.94	5.72	3.19 †
Total	2.74		7.16	

Statistical significance: †p≤0.1 *p≤0.05 **p≤0.01

This paper will examine these findings in the light of the 5 hypotheses and draw conclusions on gender differences in how educational attainment might work to reduce or increase HIV risk among men and women in Kenya. Discussion and conclusion will consider the broader implications these findings might have for understanding the broader puzzle in literature examining adult health disparities relating to educational attainment in other countries.