

Does the Role of Education in HIV Prevention Differ by the Epidemic Stage?

Evidence from 14 African Countries

Mika Ueyama^a

Introduction

A number of studies, in particular, epidemiological studies, have examined the association between socioeconomic characteristics and HIV infection, but the empirical evidence is mixed. Some studies found a positive correlation of HIV infection with socioeconomic status, but others found negative or insignificant relationship. Most existing studies did not explicitly pay attention to the fact that each study came from different countries (areas) at different stages of the epidemic. Because of data constraint, most studies examined “snapshots” of factors associated with HIV infection in a specific country during a specific time frame (e.g., Malawi 2000) using cross-sectional data. Very few studies focus on how infection factors change with the depth of the AIDS epidemic. In other words, previous studies have just made an attempt to “generalize” the relationship between education and HIV infection, assuming that the epidemic stage does not play a significant role.

However, it is reasonable that HIV risk factors or vulnerability to HIV infection changes with the stage of epidemic. For example, in the early stage of the epidemic, it is well known that highly educated, affluent (higher socioeconomic status) people who live in urban areas are more likely to be at high risk of exposure to HIV infection, but this pattern may change as the epidemic spreads among general populations in a wider area (country).

To fill some of the void in the existing literature, this paper attempts to empirically examine the differences in the correlation of HIV with educational attainment by the stage of AIDS epidemics. To overcome the current data constraint, this paper tests the hypothesis by comparing the coefficient estimates on educational attainment by the stage of the epidemic using pooled data based on nationally representative data sets from 14 countries, with different levels of HIV prevalence, instead of using a longitudinal data set of a specific region (area).

Understanding the association of socioeconomic status with HIV infection by the stage of the epidemic is important for policy. Such information helps us to recognize who is the most vulnerable to the infection, how the disease spreads, and the effects on society – important information to design and target appropriate interventions aimed at preventing further HIV transmission. In particular, the effect of education on HIV infection is important. First, education is a good indicator of individuals’ overall socioeconomic status, and it is one of the key approaches to prevention.

Study Design and Innovations

This study used data from the Demographic and Health Surveys (DHS) that were conducted in the 2000s from 14 Sub-Saharan African countries, which include individuals’ HIV test results; Lesotho in 2004, Zimbabwe in 2005, Malawi in 2004, Tanzania in 2003, Kenya in 2003, Cameroon in 2004, Côte d’Ivoire in 2005, Rwanda in 2005, Ghana in 2003, Burkina Faso in 2003, Guinea in 2005, Ethiopia in 2005, Niger in 2006, and Senegal in 2005. The advantage of DHS is that they include internationally comparable variables across countries. This allows for comparisons across countries using the same specifications. With respect to research on AIDS, the DHS include rich information on marital status, sexual behavior, and knowledge of and attitude toward AIDS. In addition, the latest phase of the surveys has groups of questions specifically designed to provide information on the epidemic. Since 2004, surveys in most African countries have provided the results of HIV testing for subsample of respondents. By collecting HIV test results from representative samples of the population of men and women in a country, DHS can provide nationally representative estimates of HIV infection, which are more accurate than the surveillance method. This allows for an in-depth analysis of socio-demographic and behavioral factors associated with HIV infection.

The innovation of this study is the ability to examine the difference in educational effect by the stage of the AIDS epidemic using a large data set with countries at different stages of the epidemic. In addition, this study tests the education effect rigorously employing appropriate estimation specifications with controls for age and community effects. Previous studies on this topic report results that are likely biased as most did not adjust sufficiently for demographic characteristics, such as age, or include behavioral variables as explanatory variables. This study employs two approaches to examine the difference in educational effect by the stage of epidemic. First, regression models for each country are estimated and the coefficient estimates on educational attainment of each country are compared. Second, in order to test the difference in educational effect by the stage of the AIDS epidemic directly, all the data is grouped together and regression models are employed with interactions between educational attainment and the stage of the HIV epidemic.

^a Mika Ueyama, International Food Policy Research Institute/RENEWAL.

Empirical Findings

Three main empirical findings emerge from the analysis. First, educational attainment is negatively correlated with HIV infection in countries where the AIDS epidemic has spread, but such a relationship is not found in countries with low prevalence rates. These results suggest that the association between educational attainment and HIV infection is weakly positive or insignificant at the beginning of the epidemic, but education has a significant effect on reducing HIV risks as the epidemic has become severe. Second, such a relationship is significant especially for women. Third, the prevention effect of educational attainment on the HIV infection is particularly strong for younger generations. This result is robust to gender and the stage of the AIDS epidemic, although the effect is the strongest for women in countries where the epidemic has matured.

Policy Implications

The fact that the education effect differs between sexes is intriguing. While analysis of this issue is beyond the scope of this study, it is likely that educating women is important to slow the spread of HIV infection. Biologically and socially, women face a higher infection risk than men during unprotected sex.

Education is one of the useful strategies to reduce HIV incidence. Although the empirical results of this study show the negative relationship between educational levels and HIV infection in the countries where the epidemic has spread across the general population, education may play an important role in HIV prevention even in the countries where the epidemic is just emerging through the spread of the knowledge and awareness of HIV and AIDS.



INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE • 2033 K Street NW • Washington, DC 20006-1002 USA
T 1-202-862-5638 • Skype ID: ifprihomeoffice • F 1-202-467-4439 • E s.drimie@cgiar.org • www.ifpri.org/renewal

About RENEWAL

Facilitated by the International Food Policy Research Institute, RENEWAL is a regional “network-of-networks” in Sub-Saharan Africa. Currently active in five “hub” countries (Malawi, Uganda, Zambia, South Africa, and Kenya), RENEWAL comprises national networks of food and nutrition-relevant organizations (public, private, and nongovernmental) together with partners in AIDS and public health research. RENEWAL aims to enhance understanding of the worsening interactions between HIV, food security, and nutrition, and facilitate a comprehensive response to these interactions. RENEWAL is grateful for support, at present, from Irish Aid, the Swedish International Development Cooperation Agency (SIDA), the International Development Research Centre (IDRC, Canada), and the United States Agency for International Development (USAID).

Note: This brief is based on a RENEWAL working paper containing preliminary material and research results. These papers have not been subject to formal external reviews managed by IFPRI's Publications Review Committee, but have been reviewed by at least one internal or external researcher. They are circulated in order to stimulate discussion and critical comment.

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