Inequitable health outcomes following the introduction of antiretroviral therapy in Addis Ababa, Ethiopia

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Introduction.

The introduction of antiretroviral therapy (ART) is considered one of the most important public health interventions in history and has had profound effects on the lives of millions of people worldwide. The establishment of ART programs has been credited with significantly reducing the mortality and morbidity associated with HIV/AIDS. However, the impact of ART on health outcomes varies widely across different regions, highlighting the importance of understanding the specific contexts in which ART is implemented.

Several studies have shown that the benefits of ART are not evenly distributed, with wealthier and more educated individuals being more likely to receive treatment. This is partly due to the fact that ART programs are often implemented at the local or national level, where the distribution of resources and services can be highly unequal.

Data

Population data come from the Addis Ababa Mortality Surveillance Project, which was initiated at all cemeteries in Addis Ababa in February 2001. Currently, over 20 cemeteries are under surveillance and that includes more than 900000 Dento crosses, churchyards, woredas and urban cemeteries as well as a few cemeteries for religious minorities. In all cemeteries combined, over 250000 deaths are recorded annually and the coverage is estimated between 80% and 90% (Birsen et al. 2006). Summary measures for socio-economic status (wealth, and educational attainment) and other background characteristics are taken from the 1994 census which is aggregated at the ward level (CSA 1996).

Methods.

The data used in this analysis comes from the Addis Ababa Mortality Surveillance Project and is the only one for Addis Ababa. As the geography is used for purposes of surveillance of mortality and we have no social/technical justification in terms of the ward level, we used the ward level for the purpose of the urban population management (WPM) (Birsen et al. 2006).

Research Questions.

- Does the relationship between socio-economic status, specifically wealth and education, and ART mortality change after the introduction of antiretroviral therapy?

Independent Variable.

- Distribution of ART use before and after the introduction of antiretroviral therapy (Addis Ababa; Ethiopia)

Model.

The spatial lag model considers the spatial dependency to be a component of the outcome of interest. In this case, we use a spatially lagged weight matrix (W), which reflects the spatial structure of Addis Ababa. This is done by the projection of an auxiliary variable (y) of the outcome variable of interest on a neighboring variable (y) to explicitly model the measured spatial autocorrelation. The outcome variable (y), which is the function of mortality among ART (W = 1), is modeled as a function of a linear as well as other characteristics of the nature.

y = β0 + β1X + e

where

y = dependent variable
β0 = intercept (constant)
X = independent variable
e = error term
β1 = coefficient for the independent variable

Conclusion & Discussion.

The association between a wealthier socioeconomic status in ART mortality is not the same before and after the introduction of antiretroviral therapy. The introduction of ART programs has had a significant impact on mortality, especially among those who are wealthier and more educated, highlighting the need for continued efforts to ensure equitable access to ART in all regions.

Limitations.

- The measures of socio-economic status are derived from the 1994 census, the best available source for these measures, which prevents the estimate to account for any subsequent changes in these measures.

Acknowledgments.

This project would not have been possible without the thoughtful efforts of the Addis Ababa Mortality Surveillance Project (Addis Ababa) and the Addis Ababa Chamber of Commerce and Industry (AACC) which brought it all together for change. The Addis Ababa Municipal Council of Addis Ababa, the Office of the Prime Minister of Ethiopia, the Addis Ababa Institute of Technology and the Addis Ababa University also provided support and guidance. The contribution of the Addis Ababa Municipality and the Addis Ababa Chamber of Commerce and Industry in this work is gratefully acknowledged.