

Modeling and Projection of HIV/AIDS epidemics in Ethiopia using ARIMA

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Abstract

HIV/AIDS remains one of the lethal diseases and leading global health predicament. Ethiopia is one of the Sub-Saharan countries most affected by the HIV pandemic with a prevalence of 1.5% among adults and it is one of the top 22 countries with the highest number of pregnant women living with HIV/AIDS. This study was conducted with objective of formulating a model to determine the trend, prevalence and projecting HIV/AIDS epidemics in Ethiopia. Data were obtained from UNAIDS and Ministry of Health bulletin in Ethiopia. The data was analyzed using Autoregressive Integrated Moving Average (ARIMA) time series analysis model and the ARIMA (2,3,2) appeared to be providing the best fit for the observed data. The trend revealed that the HIV/AIDS prevalence was increasing in alarming rate from approximately mid 1990s and reached its climax in the years 2002 to 2004 and decreased onward. The prediction showed that the prevalence of HIV/AIDS would decrease in Ethiopia for the next 5 years. Both the trend and the prevalence showed that the status of HIV/AIDS in Ethiopia could be controllable. Further investigation including research on significant contributing factors and predictors of the disease will be required to perfect this study. It would also be good if this model can be compared to other models used in HIV/AIDS research.

Note: I will require funding to attend the conference.