

Impact of Human Development on Health Outcome in South Asia

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Abstract

The objective of this study is to investigate the impact of Human Development on HIV/AIDS in South Asia (Pakistan, India Bangladesh, Sri Lanka, Nepal, and Afghanistan) for the period of 1990 to 2013. HIV/AIDS is considered as a dependent variable while human development, urbanization and ICT (Information and communication technology) as independent variables. After the collection of data of these variables different panel econometrics techniques are applied. The result shows that human development has positive and significant impact on HIV/AIDS in South Asia. Urbanization has positive and insignificant impact on HIV while ICT has negative and significant impact on HIV/AIDS in South Asia.

Introduction

HIV stands for human immunodeficiency virus. The HIV attacks the immune systems that damage the human's defense system that protect from infection. This infection damages the immune cell and infected individuals gradually become the immunodeficiency (WHO, 2016). There are 37 million people infected with HIV in the world. HIV/AIDS is one of the most serious diseases facing the developing countries. In many societies, it becomes clear that HIV and AIDS have substantial economic and social impact on individuals, families, households, communities' groups and on societies as whole.

The percentage of population (age from 15 to 49) who are living with HIV is 1.1 in the world and in South Asia there is 0.2 percent of population living with HIV (human development report, 2015). HIV/AIDS is transmitted through stigmatized aspects of human behavior, such as sexual activity, drug use and commercial sex. The factors that rise the risk of HIV/AIDS infection including under development, economic insecurity, poverty, lack of empowerment of women and lack of education, social exclusion, illiteracy, discrimination, lack of information, and sexual exploitation of women, girls and boys (UNGASS). HIV/AIDS slows down the human development.

HIV/AIDS have also impact on economic development. HIV/AIDS impact on household begins when a member of household suffers from disease then it causes a loss of income, health expenditure increases to cover the medical cost which results a decrease in household saving (Shaeffer, 1994). HIV/AIDS is not only a health issue but also it has impact on economy by reducing the GDP and per capita income (Bloom, 1997). The HIV/AIDS affects the South Asian economy first felt by individuals and their economy then firms and business and at the end it affects the macro economy. To combat the HIV/AIDS is the sixth Millennium development goal of UN. In South Asia India has highest number of HIV positive people of 2.9 million. During the period between 1980 and 2010, the per capita GDP has grown by 214 percent while the HDI value for South Asia has grown only by 54 percent. Total health expenditure in South Asia was 4.0% of GDP in 2012 (18th Annual Report, Human Development in South Asia 2015). Based on this analysis the present study is intended to investigate the impact of human development on HIV/AIDS in South Asia.

Literature Review

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Many researches explored the relationship between HIV/AIDS and human development. HIV/AIDS is one of the most serious diseases facing the developing countries. There are few literatures on the HIV/AIDS.

Gostin (2014) examined the relationship between the global governance and non communicable diseases. There is increased in transportation system and globalization in culture caused the spread of non communicable diseases such HIV/AIDS, TB etc. there is availability of batter food, leisurely life styles are the elements of good life but all these caused the infection diseases. When people move from rural to urban areas or globalization blend the culture and peoples involve the unhealthy habits. There is no proper policies and program to control the non communicable disease. This study suggested that international funding is needed to overcome the HIV/AIDS with health education, regulation system and industry regulation for healthy food.

WHO (2012) this study shows the effects of urbanization on non communicable diseases. This study used the case studies from Egypt, Islamic republic of Iran and Pakistan. This study conducted the household survey and used the questionnaire to collect the data on behavioral habits such as diet, physical activity and tobacco use. This study showed that urbanization is major cause of spread the infection of non communicable diseases in large cities. In Islamic republic of Iran, study showed that the residents who lived in urban area were more infected by non-communicable diseases than in rural residents. In Pakistan the survey was conducted in Karachi that is more populated area. The results also showed that urbanization is a cause to spread the non communicable diseases.

Whiteside (2010) explored that how the poverty/epidemic cycle works, whereby poverty increases the spread of HIV and AIDS increases poverty. This study was conducted in Africa. That HIV prevalence is highly correlated with falling calorie consumption, falling protein consumption, unequal distribution of income and other variables conventionally associated with susceptibility to infectious disease. The causal chain runs from macro-factors, which result in poverty through the community, household and individual, into the capacity of the individual's immune system. This study showed that HIV/AIDS is extremely complex. Poverty assists HIV spread, AIDS causes poverty. This epidemic is a development crisis.

Boutayeb (2009) examined the impact of HIV/AIDS on human development in African countries and used the health and demographic variable such as life expectancy at birth, healthcare assistance, age and sex distribution, economic indicators like income, work force, and economic growth, education and knowledge acquisition and other indicators like governance, gender inequality and human rights. It was focused on secondary information, mainly through National Human Development Reports of some African countries and regular publications released by the United Nations (UN), United Nations Development Programme (UNDP), World Health Organization (WHO) and the World Bank. HIV/AIDS is affecting the global human development of African countries through its negative impact on health and demographic, economic and other indicators like governance, gender inequality and human rights.

GYABAAH (2003) examined the impact of urbanization on global health, food security, global warming and human security in Africa. This study shows that both positive and negative effect of urbanization. Urbanization also affects the people's health. This study also discussed that urbanization create water scarcity, hunger, diseases, poverty and deprivation. When urbanization then high birth rate and low mortality rate. Unemployment increase then youth will turn into crime and diseases such as HIV/AIDS due to high level of commercial sex. This study also shows that urbanization provide the opportunity of employment, markets for consumer and also provide the way in which manage the human capital with better use of natural resources. This study recommends that proper planning of land use, environmental issues and family planning can reduce the issues of urbanization.

Bloom & Ajay (1997) have examined the relationship between the AIDS epidemic and economic growth. This study estimated the impact of AIDS on economic growth from cross country data on AIDS and economic growth. For this purpose, 51 countries including both developing and industrial were selected. HIV/AIDS is not only health issue but also create serious problem for economic root. This study used the empirical growth equation to measure the nature and strength of statistical association between the AIDS and growth rate of GDP per capita. In this study GDP per capita, Average annual rate of growth of per capita GDP, HIV prevalence per 1,000 adults and Cumulative AIDS cases per 1,000 adults were used. Epi model was used to check the relationship between AIDS epidemic and economic growth and find that AIDS epidemic had statistically insignificant effect on the growth rate of per capita income.

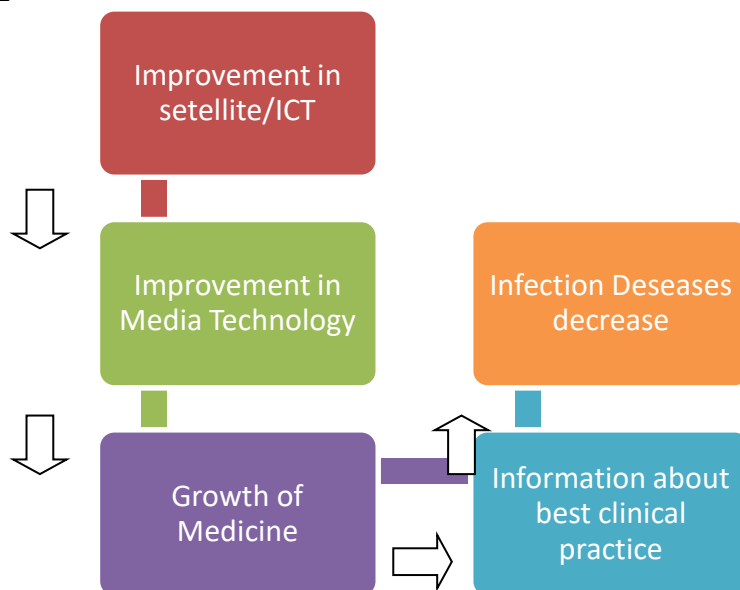
Arndt & J D Lewis (n d) analyzed the macroeconomic effects of the AIDS epidemic for South Africa using an economy-wide modeling framework. This study described the important features of AIDS epidemic. This study constructed an economy-wide simulation model that embodies the important structural features of the South African economy. The study used the model to generate and compare two scenarios: a hypothetical “no-AIDS” scenario in which the economy continues to perform as it has over the last several years, and an “AIDS” scenario in which the key AIDS-related factors affect economic performance. They find that the impact of the epidemic could be significant.

All the studies concluded that HIV/AIDS has negative impact on health, economic growth and FDI etc. Few studies have explored the impact of human development on HIV/AIDS. The contribution of this study to the human development-HIV/AIDS literature is that it is the first paper to analyze the effect of human development on HIV/AIDS.

Theoretical framework

1: ICT is very important to control the diseases because now world has become a global village. Now people are more aware about diseases due to quicker information technology. ICT played a vital role in the growth of medicine technology as scientists have easy excess to every new research in medicine so they have improved their clinical practices also. As a result, ICT made it possible to control the infectious diseases.

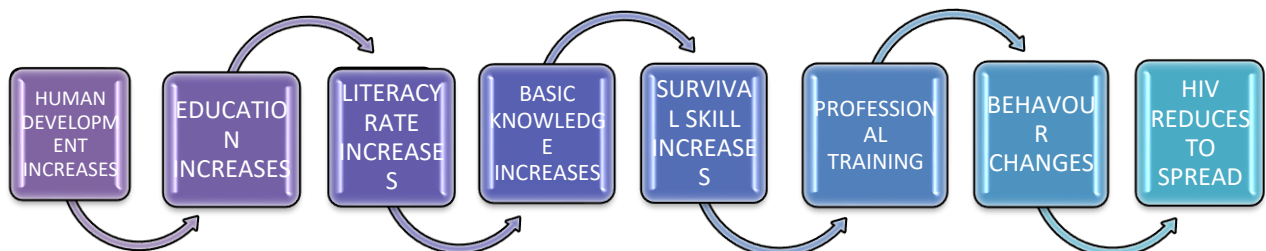
Figure: 1



(UNDP/WORLD BANK/WHO (TDR) 2004)

2: Human development has special impact on reduction of HIV infection. Schools can play an important role to recover the societies and communities from HIV. As the human development increases, literate people will be generated and their skills for survival also improve which will change the overall behavior of societies to overcome the threat of HIV infection which results the reduction of HIV virus to spread.

Figure: 2



Source: Shaeffer (1994)

Description of Variables

- **People living with HIV, 15-49 years old, percentage**
The occurrence of HIV among the population having age 15-49 years is the percentage of individuals having age 15-49 living with this virus (United Nations).
- **Human development**
Human development is development of the people through building human capabilities, for the people by improving their lives and by the people through active participation in the processes that shape their lives. It is broader than other approaches, such as the human resource approach; the basic needs approach and the human welfare approach (Human development report, 2015).
- **Human Development Index**
The Human Development Index (HDI) is a composite index focusing on three basic dimensions of human development: first long and healthy life, measured by life expectancy at birth; second is the ability to acquire knowledge, measured by mean years of schooling and expected years of schooling; and the third dimension is a ability to achieved a decent standard of living, measured by gross national income per capita. The HDI has lies between 1to 0 (Human development report, 2015).
- **Urbanization**
Urbanization is the process in which people move from rural to urban areas due to economic stability and higher opportunities. Main difference between rural and urban areas is that people live in cities of high population as in rural areas people live in sparser places. (Peng, Xiangming& Yuan).
- **Information and Communication Technology (ICT):**
ICT is defined as information and communication technology that consist of hardware, software, network media for collection, processing, transmission and presentation of information. (World Bank, 2003).

Methodology and Data sources:

The main objective of this study is to empirically investigate the impact of human development on HIV/AIDS in South Asia. South Asian countries are selected because major portion of world population living in this region; secondly south Asia has highest number of people living with HIV after Sub Saharan Africa.

For empirically investigation in this study the people living with HIV, 15-49 years old, (percentage) is taken as dependent variable, on the other hand, human development as measured in human development index, ICT data is generated by combining the mobile phone subscription, internet users and telephone data, and percentage in urbanization are independent variables.

The shape of this model is as under:

HIV/AIDS= f (human development, urbanization, ICT)

For empirical finding, data for above variable has been taken from world development indicator and United Nation from 1990 to 2013 for South Asia. After collection of data for South Asian countries, different panel econometrics techniques have been used. After descriptive analysis of the entire study variable, Hausman specification test is used to check whether the effect is fixed or random is present in this model.

Results and Discussions

1: Descriptive Analysis:

This analysis gives the mean, standard deviation and range of the data that will help to understand the regression analysis.

Table 1: Descriptive Analysis

variables	Mean	Std.Dev.	Mini	Maxi
People living with HIV	0.0907639	0.1378865	0	0.42
Urbanization	23.57523	7.056209	8.854	37.86
ICT	7.225614	10.74023	0.046856	43.37341
Human development	0.4962222	0.1088831	0.297	0.752

This table shows the descriptive analysis in south Asian countries. All the variables have 144 observations. The people living with HIV lies from 0 to maximum 0.42 with mean 0.0907639. Urbanization lies 8.854 to maximum value 37.86 with mean 23.57523. The minimum value of ICT is 0.046856 and maximum value is 43.37341 with mean 7.225614. The mean of human development is 0.4962222 and range lies from 0.297 to 0.752.

Empirical Analysis

Hausman Specification Test

Hausman test is used to check whether fixed effect model is appropriate or random effect model is appropriate. If the p-value is less than 0.05 this indicate fixed effect is suitable and if p-value is greater than 0.05 then random effect is appropriate for the model.

Test HO: difference in coefficient is not systematic

$$\text{Chi2 (3)} = (b-B)'[(v_b - v_B)^{-1}](b-B) \\ = 3.00$$

$$\text{Prob} > \text{chi2} = 0.3918$$

Chi2 (3) and probability value is greater than 0.05 this indicate the random effect is appropriate in this model. So, we use random effect model for our final analysis.

Random Effect Model:

Random effect GLS regression

Group variable: countries

R-sq: within= 0.3046

Between= 0.0062

Overall= 0.0035

Corr(u-i-x)=0 (assumed)

number of observation= 144

number of group= 6

obs per group: min= 24

avg=24.0

max=24

wald chi2(3)=56.60

Prob>chi2= 0.0000

Table 2:

Variable	coef	std.err.	z	p>z	[95% conf. interval]	
HDI	1.185225	0.2914568	4.07	0.000	0.6139606	1.75647
Urbanization	0.0027013	0.0045403	0.59	0.552	-0.0061975	0.0116002
ICT	-0.0039237	0.0009296	-4.22	0.000	-0.0057455	-0.0021018
Constant	-0.5327049	0.1118438	-4.76	0.000	-0.7519147	-0.3134951

Discussion

This study investigates the impact of human development on hiv/aids in south asia. For this purpose data is collected from the united nation and world development indicator. dependent variable is hiv/aids and human development is independent variable while urbanization and ICT (information and communication technology) are also used for independent variables. First of all we check the descriptive analysis in TABLE 1 that shows 144 observations in which the minimum value of hiv is 0% and maximum value is 0.42% in nepal that shows the high percentage of people living with hiv/aids in south asian region is nepal. The lowest urbanization is in nepal that is 8.857% and highest urbanization is 37.86% in pakistan. The minimum value of ict is 0.04% in afghanistan and maximum value of ICT is 43.37% in srilanka. The minimum value of HDI is 0.29 in Afghanistan and maximum value of HDI is 0.75 that is in srilanka.

After the descriptive analysis we first estimate the hausman specification test that tells us that either the random effect is appropriate for our model or fixed effect is appropriate. In this test the probability is greater than 0.05 that indicates the random effect is appropriate for our model.

In table 2 shows that random effect is appropriate because its probability is less than 0.05. The first column shows the coefficients of HDI, urbanization and ICT. The result shows that HDI has a positive and significant effect on HIV in south asia. If 1% increase in HDI then 1.18% increase in HIV infection. The main reason for increase in hiv cases is that it is an infectious disease and governments have no solid policies to control the disease. Although the HDI is gradually increasing in south asia but there is a lack of awareness, policies and campaigns to control the HIV/AIDS. So 6th MDG'S in south asia is not achieved.

The urbanization is positive and insignificant with HIV/AIDS. This shows that if there is 1% increase in urbanization then HIV/AIDS increases 0.2% in south asia. When people move from rural to urban areas then birth rate becomes high and mortality rate decreases and different cultures mix and people involve in bad activities then infection of HIV/AIDS increases. Urbanization exposed the youth to crime and that associated with commercial sex. Our result is supported by GYABAHAH (2003).

We also estimate the ICT as an independent variable. Our results show that negative and significant association between ICT and HIV/AIDS in south asia. If there is 1% increase in ICT then 0.3% decrease in HIV/AIDS in south asia. ICT can reduce the diseases and threat of infection. When ICT increases means improvement in satellite then media technology increases, information about best clinical practice increases then growth in telemedicine then infection diseases control. Our study is supported by (UNDP/WORLD BANK/WHO (TDR) 2004). His study also shows that ICT and HIV/AIDS has a negative relationship.

Conclusion

Present study aimed to investigate the impact of human development on HIV/AIDS in South Asia. HIV/AIDS is a dependent variable and human development is an independent variable. Other independent variables are urbanization and ICT. Results suggest

that human development and urbanization have positively impact on HIV/AIDS and ICT has negatively impact on HIV/AIDS in South Asia. This study shows that millennium development goals are not achieved in South Asia because HIV infection increases in South Asia.

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