

## HIV/AIDS AND WELL-BEING IN SOUTH CENTRAL AND SOUTH-EAST ASIA

GAFAR T. IJAIYA, USMAN A. RAHEEM, ABDUL WAHEED O. OLATINWO  
MUNIR IJAIYA and RAJI A. BELLO\*

**Abstract.** Using a cross-country data drawn from some of countries in South Central and South-East Asia and a regression analysis, this paper examines the impact of HIV/AIDS on the well-being of the people in these sub-regions. Holding the incidence of tuberculosis constant, the result indicates that the prevalence of HIV/AIDS has little or no significant impact on well-being. A situation that can be linked to efforts put in place by the governments of the countries in the sub-regions in curtailing the menace of HIV/AIDS. This result notwithstanding, the paper still suggests measures that can be used to curtail the spread and the treatment of the disease in the sub-regions.

### I. INTRODUCTION

Recent data on the trend of HIV/AIDS in the world shows a reduction from 40.3 million people that were infected in 2005 to 33 million people in 2007. South Central Asia incidentally witnessed a reduction from 0.5 percent in 2005 to 0.3 percent in 2007. In South East Asia, the prevalence of HIV/AIDS stabilized with the rate at the same 0.5 percent in 2005 and 2007. At the country level, Thailand and Cambodia had the highest prevalence rate of 1.4 percent and 0.8 percent respectively (PRB, 2005; PRB, 2008). The mere fact that the prevalence rate of HIV/AIDS is less when compared to other sub-

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\*The authors are, respectively, Poverty Analyst/Senior Lecturer in the Department of Economics; Teacher of Medical Geography in the Department of Geography; Consultant Gynaecologist/Senior Lecturer in the Department of Obstetrics and Gynaecology; Consultant Gynaecologist/Senior Lecturer in the Department of Obstetrics and Gynaecology; and Health Economist/Senior Lecturer in the Department of Economics at the University of Ilorin, Ilorin (Nigeria).

regions like sub-Saharan Africa still call for concern, against the background that HIV/AIDS is not just a public health problem but also a disease that has far reaching consequences for all social sectors and for development itself. As a health problem, HIV/AIDS has led to increase in morbidity and mortality which subsequently has created a development problem due to a massive fall in productivity of individuals and countries affected. HIV/AIDS has also led to the increase in the cost of health care services, decline in savings and capital formation (since funds needed for such are diverted to the treatment and care of the victims), decline in spending on education, higher expenditure on caring for orphans left behind by the disease, high level of poverty, food insecurity and malnutrition (World Bank, 1997; Barrett and Whiteside, 2000).

Drawn from the above scenario, this paper therefore examines the impact of HIV/AIDS pandemic on the well-being of the people living in South Central and South East Asia, using a set of cross country data and a multi-linear regression analysis.

The rest of the paper is structured as follows: Section II provides the theoretical framework for the study and a review of some related literature to the study. Section III provides the data source and methodology proposed for the study. Section IV provides and discusses the results. Conclusion and recommendations are contained in the last section.

## **II. THEORETICAL FRAMEWORK AND REVIEW OF RELATED LITERATURE**

### **THEORETICAL FRAMEWORK**

The impact of HIV/AIDS on well-being can be analyzed in the context of a Neo-classical model of human capital development. Following the views of Schultz (1960) cited in Meire (1970) there are three ways human capital can develop:

- (i) through health care facilities and services, broadly conceived to include all expenditure that affect the life expectancy, strength and stamina and the vigor and vitality of the people;
- (ii) on-the-job training, including old style apprenticeship organized by firms; formally organized education at the elementary, secondary and higher levels;
- (iii) study programmes for adults that are not organized by firms including extension programmes notably in agriculture; and

- (iv) migration of individuals and families to adjust to changing job opportunities.

In its wider sense, therefore, investment in human capital means expenditure on health, education and social services and in its narrow sense it implies investment in education and training.

Given the above scenario, the outbreak of the HIV/AIDS epidemic in any country will generally have two effects: First, it will decrease life expectancy, and hence the incentive to invest. Second, the epidemic will increase premature adult mortality. The death of the parents will have adverse effects on the human capital stock/development of the offspring. As adult household member decreases family incomes, children are forced to drop out of school to contribute to the family's income. Moreover, if one or both parents die the transmission of human capital formation is weakened, because these adults will not be able to transfer human capital to their offspring. Poor education of children will translate into lower educational attainment of later generations. Decrease in education will reduce resources available for the offspring in adulthood because the household income is a function of the adult human capital stock. This again will lead to a decrease in the investment in education for their own children. Furthermore, since the parents received less education, the intergenerational transfer of human capital to their children is weakened. The result of this process will be poverty trap, where orphans and their offspring will be caught in a cycle of low educational attainment. And since the formation of human capital is one of the main determinants of well-being and economic growth that has impacted on human capital will have severe impact on well-being of the people and the nations' development in the long-run (see also UN, 2004; Bengel, 2008).

## **REVIEW OF RELATED LITERATURE**

The review of related literature on HIV/AIDS is centered on the meaning, the causes, the consequences and the trend of HIV/AIDS in the world and the South Central and South East Asia.

### **Meaning of HIV/AIDS**

Human Immuno-deficiency Virus (HIV) is that virus that destroys the body immune system and Acquired Immune Deficiency Syndrome (AIDS) is the full blown break down of all body immunity that leads to a group of serious illness and opportunistic infections that develop after being infected with HIV. HIV infection is caused by two strains of the human immune deficiency virus, HIV-1 and HIV-2. HIV-1 is the most common form of HIV

that is predominating in different parts of the world, while HIV-2 is found predominantly in West Africa with some pockets in Angola and Mozambique. When compared with HIV-1, HIV-2 is less infectious and its clinical course is slower. Dual infection with HIV-1 and HIV-2 is possible. Once introduced into the human body, HIV attacks mainly a subset of immune system cells, which bear a molecule called Cluster Designation 4 (CD4). Specifically, the virus binds to two types of CD4-bearing cells: Cluster Designation 4+Lymphocytes (CD4+T)-cells and macrophages. These cells perform various tasks critical to the normal functioning of the immune system. CD4+ T-cells organize the overall immune response by secreting chemicals to help other immune cells work properly, while macrophages engulf foreign invaders and prime the immune system to recognize these invaders in the future (see World Bank, 1997; Lamptey *et al.*, 2002; WHO, 2003).

### **Causes of HIV/AIDS**

HIV is transmitted through sexual intercourse, blood and blood products like unsafe blood transfusion, use of unsterilized instruments, traditional practices involving cuts, mother to child transmission during pregnancy, delivery and breast feeding, organ and tissue transplant. HIV cannot be transmitted by a sneeze, a handshake or other casual contacts. In developing countries, heterosexual intercourse accounts for an even greater proportion of cases. (Bulatao and Bos, 1992; World Bank, 1997; O'Malley, 2002; Robalino *et al.*, 2002).

According to Bonnel (2000) several economic, socio-cultural and epidemiological variables account for the spread of the HIV/AIDS. The main economic variables are poverty, gender inequality, income inequality and the extent of labour migration. Poverty, gender and income inequality make societies more vulnerable to HIV. For instance, a woman who is poor relative to a man will find herself at much greater risk of HIV infection. For labour migration, unequal regional development among countries as well as within countries can induce labour migration to urban areas or other countries. The resulting concentration of single men in urban areas or project sites is generally accompanied by a parallel increase in commercial and casual sex, with a concomitant rise in the risk of HIV infection. The socio-cultural variables include the type of sexual relations, religious belief, the structure of societies and conflicts. For instance, the type of sexual relations is important because it affects the relative spread of HIV among men and women. In some part of Asia, HIV is mainly spread through heterosexual relations. The epidemiological variables include co-factors that increase the

risk of sexual contacts resulting in HIV infection. Recent epidemiological studies have implicated genital/ano-rectal ulcer disease and non-ulcerative sexually Transmitted Diseases (STD) as important co-factors in the acquisition and transmission of HIV during sexual intercourse (Lamptey *et al.*, 2002; Olumide and Mohammed, 2004).

### **Consequences of HIV/AIDS**

As observed by Cuddington (1993), World Bank (1993*a*), Ainsworth and Over (1994), World Bank (1995), World Bank (1997), Robalino *et al.* (2002) and Bell *et al.* (2003), the effects of HIV/AIDS can be grouped into two categories; those associated with rising morbidity rates and those associated with rising mortality rates for particular age cohorts, especially sexually active adults and children infected at birth. The rise in morbidity has three immediate effects: reduction in labour productivity, increase in health care spending and reduction in savings. The negative labour productivity effect will arise because sick or worried workers are less productive than happy and healthy workers. Even the productivity of those who do not have AIDS may fall as infection and illness rates among friends, families and co-workers rise. The health care expenditure effect refers to increase expenditures by households and the (public or private) on health care systems to assist AIDS patient and their families in coping with deteriorating health. The effects on saving can be seen from the following; the direct effect of higher medical expenditures which tend to reduce saving and the growth of per capita income, life expectancy, age structure, and the healthiness of the population. The fall in domestic saving will imply a reduction in capital formation, and if it were substantial, it would have a potentially large adverse effect on per capita income over the long term. On the other hand, the gradual rise in mortality rates caused by AIDS will have two important demographic consequences with macroeconomic effects. First, there will be a slower population growth rate, which will result in a smaller population at a future date. Second, a rising number of deaths from AIDS will shift the age structure of the population towards the younger age cohorts. The shifts in age structure can be expected to have important effects on both aggregate supply and aggregate demand. On the supply side, the size of the working-age population (and perhaps the participation rate of the labour force) will be reduced. The smaller working-age population will directly reduce potential output. The loss in output would be exacerbated by a fall in labour force productivity as the average age and experience of the labour force declines. On the demand side, the shift in the size and composition of the population will affect the level and composition of public expenditures as well as the economy's overall (private and public) saving rates. For example, the smaller

number of young people will place lower demands on the education system and the overall consumption rates will be higher because of the younger age structure (see also World Bank, 1993b; Ainsworth, 1998; Over, 1998; Squire, 1998; Ainsworth and Filmer, 2002; Lewis, 2005).

Barrett and Rugaleman (2001) and Wilson (2001) provided other consequences of HIV/AIDS to include household food insecurity and high levels of malnutrition among children, especially orphans who because of the death of infected adults that are farmers are deprived of sufficient food. The death of young adults through HIV/AIDS also reduced households' earning power and therefore, their ability to buy food and related goods and services. Illness and funerals forced households to spend most of their cash on care, treatment and other expenses, with adverse consequences for food availability. Labour shortages also force households to forgo cash in favour of fast-maturing food crops, thus curtailing the ability of afflicted households to generate cash. The death of the productive adults also shatters the social networks that provide households with community help and support. Survivors are left with few relations upon whom to depend. Widows and their children face critical shortages of food and income, primarily due to disinheritance, lack of sufficient assets, lack of labour supply and exclusion from wider kinship networks (see also Barrett and Whiteside, 2000).

### **Trend of the Spread of HIV/AIDS**

On a global scale, the HIV epidemic has stabilized, although with unacceptably high levels of new HIV infections and AIDS deaths. Globally, there were estimated 33 million people living with HIV in 2007. The annual number of new HIV infections declined from 3.0 million in 2001 to 2.7 million in 2007. Overall, 2.0 million people died due to AIDS in 2007, compared with an estimated 1.7 million in 2001. Women account for half of all people living with HIV worldwide, and nearly 60 percent of HIV infections in sub-Saharan Africa. Over the last 10 years, the proportion of women among people living with HIV has remained stable globally, but has increased in many regions. Young people aged 15-24 account for an estimated 45 percent of new HIV infections worldwide. An estimated 370,000 children younger than 15 years became infected with HIV in 2007. Globally, the number of children younger than 15 years living with HIV increased from 1.6 million in 2001 to 2.0 million in 2007. Almost 90 percent live in sub-Saharan Africa (UNAID, 2008).

In Asia, an estimated 5.0 million people were living with HIV in 2007, including the 380,000 people who were newly infected that year. Approximately 380,000 died from AIDS-related illnesses.

TABLE 1  
Rate of HIV/AIDS in South Central and South East Asia 2007

Country	Population (Million)	Percentage of Population Ages 15-49 with HIV/AIDS 2005	Percentage of Population Ages 15-49 with HIV/AIDS 2006	Percentage of Population Ages 15-49 with HIV/AIDS 2007
Afghanistan	32.7	< 0.1	< 0.1	–
Bangladesh	147.3	< 0.1	< 0.1	< 0.1
Bhutan	0.7	< 0.1	< 0.1	0.1
Brunei	0.4	< 0.1	< 0.1	–
Cambodia	14.7	1.6	0.6	0.8
East Timor	1.1	–	–	0.2
India	1,149.3	0.9	0.4	0.3
Indonesia	239.9	0.1	0.1	0.2
Iran	72.2	0.2	0.2	0.2
Kazakhstan	15.7	0.1	0.1	0.1
Kyrgyzstan	5.2	0.1	0.1	0.1
Laos	5.9	0.1	0.1	0.2
Malaysia	27.7	0.5	0.5	0.5
Maldives	0.3	–	–	–
Myanmar	49.2	1.3	1.3	0.7
Nepal	27.0	0.5	0.5	0.5
Pakistan	172.8	0.1	0.1	0.1
Philippines	90.5	< 0.1	< 0.1	< 0.1
Singapore	4.8	0.3	0.3	0.2
Sri Lanka	20.3	< 0.1	< 0.1	< 0.1
Tajikistan	7.3	0.1	0.1	0.3
Thailand	66.1	1.4	1.4	1.4
Turkmenistan	5.2	< 0.1	< 0.1	< 0.1
Uzbekistan	27.2	0.2	0.2	0.1
Vietnam	86.2	0.5	0.5	0.1

Sources: Population Reference Bureau (PRB) 2006, 2007 and 2008.

As indicated in Table 1, the National HIV infection levels for population ages 15-49 were highest in Thailand, Cambodia and Myanmar with 1.4, 0.8 and 0.7 percent respectively and lowest in Bangladesh, Philippines, Sri Lanka and Turkmenistan with less than 1 percent in 2007.

## **WELL-BEING: MEANING AND DETERMINANTS**

### **Meaning**

According to Narayan *et al.* (2000a, 2000b), well-being is synonymous with good quality of life which include material well-being often expressed as having enough bodily well-being which includes being strong, being in the right frame of mind and looking good; social well-being which includes caring for and settling children; having self-respect, peace, and good relations in the family and the community; having security, including civil peace, a safe and secure environment, personal and physical security, and confidence in the future; and having freedom of choice and action, including being able to help other people in the community.

### **Determinants of Well-Being**

According to the World Bank (1991) and Petri (1993), one of the key determinants of well-being in a given country is the presence of stable macroeconomic policies and economic growth. For instance, when there exist sound fiscal and monetary policies in a country this will create a hospitable climate for public and private investment in both socio-economic activities which in turn promote productivity, increases income and the purchasing power of the people and their consumption-expenditure from which the nation's well-being improves.

The ability of individuals to have access to the basic needs of life, *e.g.* food, assets, land, work, health, education, water and shelter also determine well-being. As stated by Lipton and Ravallion (1995) and Narayan *et al.* (2000a), adequate food is a universal need for improved well-being. Access to adequate resources, especially land is another universal criterion of well-being. Ability to find a paid work, to obtain money, to buy clothes and to pay for health treatment and school expenses is another important determinant of well-being.

Closely related to the above is Sen's capabilities and entitlements doctrine. According to Sen (1985), as a determinant of well-being people's capabilities that refers to what people do and can do in their lives is also a determinant of well-being. It also includes things that can lead to a long and healthy life; to be knowledgeable; and having access to the resources needed for a decent standard of living, while entitlements tend to draw the attention

of the people away from the mere possession of certain goods toward human rights and the command over the use of goods and services and the use of various economic, political and social opportunities within the legal system.

Having access to state-provided infrastructural facilities is an essential criterion for well-being. As observed by Ward (1999), infrastructural services *e.g.* road, water and electricity are significant because economic and social infrastructure is an essential overhead capital — a key element in national wealth. For instance, private firms will not get established, nor function effectively and efficiently where the infrastructure which provides the basic mechanism remains dysfunctional, disconnected, run down and inadequate. In the same view, public assets that generate directly real consumption service flows that benefit the people will be insignificant to the overall quality of life of the people most especially women.

The existence of good governance in any society is also a pre-condition for improved well-being, since good governance allows for civil and economic liberties. Civil liberties such as the freedom of individual expression, a pluralistic and free media, the ability of groups to organize and freedom of dissent and criticism are also essential elements of civil liberties since they facilitate greater citizens' voice and enhance more effective government action on development. On the other hand, economic liberties would foster entrepreneurship, market activities and economic growth for the improvement of well-being to take place since there could be fewer regulations and fewer obstacles to individual economic opportunities (Boeninger, 1991; Brautigam, 1991; Landell-Mills and Serageldin, 1991; Isham *et al.*, 1997).

The significance of these determinants to the quality of life of the people in a particular country can be drawn from the annual performance of some key socio-economic indicators like the rate of poverty, life expectancy at birth, adult illiteracy, access to health, access to safe water, access to sanitation, infant mortality rate, prevalence of malnutrition, per capita income, inflation rate, external public debt, etc. In South Central and South East Asia, the quality of life of the people as indicated in Table 2 is not as bad as expected (even with the spread of HIV/AIDS), when compared with sub-Saharan Africa. For instance, despite Thailand, Cambodia and Myanmar's rating as countries with the highest HIV/AIDS prevalence rate in the sub-regions, these countries still record a high level of life expectancy at birth (put at 72, 62 and 61 years respectively). The rates that are far higher than those of South Africa and Zimbabwe that had 50 and 40 years respectively in 2007 (PRB, 2008).

TABLE 2  
Some Socio-Economic Indicators of Well-Being  
in South Central and South East Asia

Country	Life Expectancy at Birth (Years)* 2007	Infant Mortality Rate (per 1000)* 2007	Access to Safe Water (%)** 2004	Access to Sanitation (%)** 2004	GNI PPP Per Capita (US\$)* 2007	Population in Poverty (%) [National Poverty Line]**	External Debt % of GNI** 2006
Afghanistan	43	163	13	–	–	–	9.3
Bangladesh	63	52	74	39	1340	51.0	36.2
Bhutan	66	40	–	–	4980	–	–
Brunei	75	7	–	–	49900	–	–
Cambodia	62	67	41	17	1680	47.0	–
East Timor	60	88	58	36	3190	39.7	–
India	65	57	86	33	2740	36.0	60.0
Indonesia	70	34	77	55	3580	17.5	28.8
Iran	71	32	94	–	10800	–	–
Kazakhstan	66	29	86	72	9700	17.6	7.1
Kyrgyzstan	66	50	77	59	1950	49.9	–
Lao	61	70	51	30	1940	38.6	–
Malaysia	74	9	99	94	13570	15.5	–
Maldives	73	16	–	–	5040	–	–
Myanmar	61	70	78	77	–	–	–
Nepal	64	48	90	35	1040	41.8	50.3
Pakistan	63	75	91	59	2570	28.6	–
Philippines	69	25	85	72	3730	32.1	77.7
Singapore	81	2.4	100	100	48520	–	104.0
Sri Lanka	71	15	79	91	4210	25.0	93.0
Tajikistan	67	65	59	51	1710	74.9	–
Thailand	72	16	84	96	7880	9.8	26.2
Turkmenistan	62	74	72	62	6640	–	–
Uzbekistan	67	48	82	67	1680	27.5	–
Vietnam	73	16	85	61	2550	37.4	–

Sources: \*Population Reference Bureau 2008 and \*\* World Bank 2008a

### III. DATA SOURCE AND METHODOLOGY

A cross-country data drawn from 21 countries in South Central and South East Asia for the period 2007 were used (see Table 3). The variables considered for the study were well-being proxied by life expectancy at birth (years), the percentage of the total population between the age of 15 and 49 years living with HIV/AIDS in the sub-region and the incidence of tuberculosis. The data were obtained from the Population Reference Bureau World Population Data Sheet for the year 2008 and World Bank World Development Indicators also for the year 2008.

TABLE 3

The Number of Countries Selected for the Study  
in South Central and South-East Asia

Bangladesh	Cambodia	India	Indonesia	Iran	Philippines	Timor Leste
Kazakhstan	Malaysia	Nepal	Pakistan	Kyrgyzstan	Myanmar	Laos
Singapore	Sri Lanka	Tajikistan	Thailand	Turkmenistan	Uzbekistan	Vietnam

In specific terms, the analysis started with the specification of model and a multiple regression analysis of the Ordinary Least Square (OLS) in determining the impact of HIV/AIDS on well-being in South Central and South East Asia. Following Haacker (2004), Greener (2004), Ijaiya (2005a, 2005b) and Beeglea and De Weerd (2008) methods of estimation and with some modifications the model for this study was stated as:

$$WB_i = f(\text{HIV/AIDS}_i, \text{Tuber}_i) \quad (1)$$

When transformed into a linear equation the model thus becomes:

$$\ln WB_i = \beta_0 + \beta_1 \text{HIV/AIDS}_i + \beta_2 \ln \text{Tuber}_i + U \quad (2)$$

Where:

$\ln WB_i$  =  $\log^1$  of well-being proxied by life expectancy at birth (years) in each country.

$\text{HIV/AIDS}_i$  = percentage of the total population between the age of 15 and 49 years living with HIV/AIDS in each country.

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<sup>1</sup>The logarithmic transformation produced the best functional fit since it is used to avoid given undue weight to variables with extremely high value. In other words, they are used to stabilize or normalize the variance of a sample/variable (see Bland and Altman, 1996a, 1996b, 1996c; Bland, 2000; Ijaiya, 2001).

$\ln \text{Tuber}_i = \log^2$  of the incidence of tuberculosis per 100,000 people in each country.

$\beta_0$  = the intercept.

$\beta_1$  = the estimation parameters associated with the influence of the independent variables ( $\text{HIV/AIDS}_i$  and  $\ln \text{Tuber}_i$ ) on the dependent variable ( $\ln \text{WB}_i$ ).

$U$  = the error term.

To estimate the model, a multiple regression analysis was used in order to reflect the explanatory nature of the variables. To verify the validity of the model, two major evaluation criteria were used:

- (i) the *a priori* expectation criteria which is based on the signs and magnitudes of the coefficients of the variables under investigation; and
- (ii) statistical criteria which is based on statistical theory, which in other words is referred to as the First Order Least Square (OLS), consisting of R-square ( $R^2$ ), F-statistic and t-test.

The R-square ( $R^2$ ) is concerned with the overall explanatory power of the regression analysis, the F-statistic is used to test the overall significance of the regression analysis and the t-test is used to test the significant contribution of each of the independent variables on the dependent (Oyeniya, 1997; Greene, 2003).

Drawing from the model, our *a priori* expectations or the expected pattern of behaviour of the independent variables ( $\text{HIV/AIDS}_i$  and  $\ln \text{Tuber}_i$ ) on the dependent variable ( $\ln \text{WB}_i$ ) were  $\text{HIV/AIDS}_i < 0$  and  $\ln \text{Tuber}_i < 0$ , an indication that the more the prevalence of HIV/AIDS and tuberculosis the less the well-being of the people in South Central and South-East Asia.

#### IV. RESULTS AND DISCUSSION

The results of the regression analysis of the model conducted at 5 percent level of significance are presented in Table 4.

A look at the model show that it has an  $R^2$  of 60 percent, which is the variation by which the dependent variable (well-being) is explained by the explanatory variables ( $\text{HIV/AIDS}_i$  and  $\ln \text{Tuber}_i$ ), while the error term takes care of the remaining 40 percent, which are variables in the study that cannot

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<sup>2</sup>Same as 1 above.

be included in the model because of certain qualitative features. At 5 percent level of significance, the F-statistic show that the model is useful in determining if the explanatory variable has any significant influence on the dependent variable, as the computed F-statistic which is 5.05 is greater than the tabulated F-statistic valued at 3.55.

TABLE 4  
Regression Results of HIV/AIDS and Well-Being  
in South Central and South East Asia.

Variable	Co-efficient estimates and t-values
Intercept ( <i>t</i> )	4.48 (48.54)
HIV/AIDS <sub><i>i</i></sub> ( <i>t</i> )	0.034 (0.14)
InTuber <sub><i>i</i></sub> ( <i>t</i> )	-0.06 (-3.17)*
$R^2$	0.60
F	5.05

t-value in parenthesis \* statistically significant at 10 percent level of significance.

Holding the incidence of tuberculosis constant, the co-efficient estimate and the associated t-value of prevalence of HIV/AIDS in the sub-regions did not have the expected signs, thus contradicting our *a-priori* expectation. Statistically too, the prevalence of HIV/AIDS is not significant to well-being at 5 percent level. This result is in conformity with the studies by Rai *et al.* (2007) and USAID (2008). According to USAID, the reduction in the prevalence rate of HIV/AIDS that has had little impact on well-being of the people in the sub-regions could be linked to some of the pragmatic measures taken over the years to combat the spread of HIV/AIDS in the sub-regions. For instance, in India, combating the spread of HIV/AIDS started in 1992 with the establishment of the National AID Control Organization (NACO) to formulate HIV policy and monitor prevention and control projects. In the same year, the Government of India also launched the first phase of its National AIDS Control Programme (NACP-I). NACP-I, which ended in 1999, had several elements, including HIV surveillance and related activities, screening of blood and blood products, and a public education campaign. With NACP-II, which lasted from 1999 to 2006, the focus shifted from raising awareness to interventions to change behaviour. Currently in its third phase, NACP-III (2007-2012) is designed to reverse the spread of HIV/AIDS by placing higher priority on prevention efforts while also seeking to integrate care, support, and treatment strategies (see also UNDP, 2007).

Other efforts aimed at combating the disease include increase in funding for HIV/AIDS activities from \$ 58 million in 2003 to \$ 204 million in 2007, and the establishment of the National AIDS Council under the leadership of the Prime Minister. The Council brought together the heads of the different ministries. It was also understood that for the past three years, government hospitals in the high-prevalence states of Tamil Nadu, Andhra Pradesh, Maharashtra, Karnataka, Manipur, Nagaland, and Delhi have distributed Indian-manufactured antiretroviral drugs (ARVs) free of charge and now ARVs are provided in many other states under a national program. The Indian Government has a target of providing free antiretroviral therapy (ART) to 300,000 people living with HIV/AIDS by 2011 (USAID, 2008).

In the views of Rai *et al.* (2007), the bulk of the credit to the fight against HIV/AIDS in Pakistan goes to the private sector. Over 50 non-governmental organizations (NGO) are working to improve the HIV/AIDS status quo in Pakistan. Their work ranges from providing needle-exchange programs for Injecting Drug Users (IDUs) to spreading awareness about HIV/AIDS to the masses. Worth mentioning is the organization, 'AMAL', which means 'action' in Pakistan's national language, Urdu. It has outreach HIV training programs focusing not only on IDUs but also for the out-of-the-limelight population, female sex workers. On the other side, the current government policy falls under the auspices of the National HIV/AIDS Strategic Framework. The program has four foci: improved HIV prevention, expanding interventions among vulnerable groups, preventing transfusion related infections and improving infrastructure. With over Rs. 2.9 billion (US \$ 48 million) at its disposal, the program hopefully chalk out a practical, concrete plan and then initiate work for implementation (see World Bank 2008b).

## V. CONCLUSION AND RECOMMENDATIONS

An empirical study on the impact of HIV/AIDS on well-being in South Central and South East Asia was carried out using a cross-country data and a regression analysis. With incidence of tuberculosis kept constant, the result indicates that the prevalence of HIV/AIDS has little or no significant impact on well-being in the sub-regions. This result notwithstanding governments, non-governmental organizations and individuals in the sub-regions should continue to intensify efforts at combating the spread of the disease.

Important steps in this direction are the sustainance and increase in the funding of all HIV/AIDS activities; improve the coordination, efficiency and effectiveness of HIV and AIDS programmes and projects; increase the

effectiveness of the national coordinating agencies, particularly in mobilising and disbursing resources, as well as engaging donors to streamline funding requirements; strengthen the role of the National AIDS Control Organizations in all countries in order to have greater coordination and communication between the various actors involved in combating HIV/AIDS; and encourage the implementation of innovative projects and programmes (such as workplace programmes and cash transfer schemes) that tend to have larger welfare effects on the people living with HIV/AIDS.

Equally important is the need to continue to influence the behaviour of the people via the introduction of programmes that would promote safer behaviour, like safer sex, safer injecting practice and easing social constraints that are detrimental to the people, most especially women; and the reduction of income poverty that has increased the rate of commercial sex workers and drug abuse in the sub-regions.

The governments of the countries in these sub-regions should also put in place policies that would provide equal access to productive resources and social services (like health care, safe water, food and nutrition security to the most affected, irrespective of their gender, ethnic or religious background). Because it is believed that the more access people living with HIV/AIDS have to these facilities the longer they are likely to live. Finally, the result from this analysis should serve a legitimate eye opener for other regions of the world, particularly sub-Saharan Africa, where HIV/AIDS and poverty occurrence are higher, as well as, welfare situation is poor.

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