

Hiv aids situation in south africa



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The HIV/AIDS epidemic has had a devastating effect on the South African population. The Human Immunodeficiency Virus (HIV) is first transmitted through bodily fluid contact ¹/₂ usually through blood, semen, vaginal fluid, pre-ejaculate and/or breast milk (Centre for Disease Control and Prevention 1999). Ultimately, HIV advances to Acquired Immunodeficiency Syndrome (AIDS) where the condition markedly attacks the immune system by increasing the risk of a variety of infections caused by bacteria, parasites and viruses (Centre for Disease Control and Prevention 1999). Typically, the development of AIDS from HIV takes approximately five to eight years, but can be postponed with the aid of anti-retroviral drugs (Centre for Disease Control and Prevention 1999).

It can be noted that the disease affects individuals at the prime of their lifetimes. Sexually active men and women, as well as young children are affected most by this illness because HIV is transmitted through events such as unsafe sex, contaminated needles and/or transmission from a mother to her newborn during birth (Centre for Disease Control and Prevention 1999). The concurrent nature of this disease makes it a greater threat to economic growth in South Africa ¹/₂ once one partner contracts it, the other partner does too. An individual is most susceptible to acquiring the disease from their sexual partner if that partner was infected less than a year prior.

Clearly then, the disease is affecting the most economically active proportion of the South African population. It is estimated that 5.7 million people or about 12% of their population is affected by HIV/AIDS (United Nations Programme on HIV/AIDS 2008). When examining the HIV prevalence rate for the labor force (ages 15-49), the rate increases to 18% (Figure 1) (United

Nations Programme on HIV/AIDS 2008) (United Nations Statistics Division 2009). The disease is far more prevalent among females between the ages of twenty- five and twenty-nine at a prevalence rate of 32. 7%; for males the age range is between thirty and thirty-nine and the prevalence is only about 25. 8% (Figure 2) (United Nations Programme on HIV/AIDS 2008).

The impact of the epidemic can be seen most profoundly by the dramatic change in South Africa's mortality rates. The overall number of annual deaths increased sharply from 1997, when about 316, 559 individuals died to about 607, 184 deaths in 2006 (Figure 3) (Statistics South Africa 2008).

Obviously, the rise cannot necessarily be attributed solely to HIV/AIDS, but what is essential here is that young adults are shouldering the burden of this increased mortality rate (Figure 4). In 2006, 41% of deaths were associated with twenty-five to twenty-nine year olds; in 1997 this percentage was about 29% (Statistics South Africa 2008). This is a significant marker in concluding that AIDS is a major factor in the overall rising number of deaths.

Clearly then, it is not uncommon for one or more parents to die when their children are young. The number of premature deaths has risen considerably: 39% in 1997 to 75% in 2009 (Harrison 2009). This indicates that 80% of the sample population would lose more than half their per capita income with the death of the highest income earner (Harrison 2009). Thus, the HIV/AIDS epidemic that started in South Africa in the 1980's has had a negative impact on the health status as well as the economic development of individuals and households.

ECONOMY OF SOUTH AFRICA

In South Africa it can be said that their income has increased simply by examining their Gross Domestic Product (GDP) over the last thirty years (Figure 5). As can be noted, GDP has steadily increased over the last twenty years (World Bank 2010). South Africa is a country that perhaps has the best operational and entrepreneurial environment in Africa and it is considered to also have one of the most politically stable climates in the Sub-Saharan African region. Moreover, it has a very advanced financial system and the South African stock exchange ranks among the world's top ten largest exchanges. 1948 marked the beginning of the Apartheid; the economy had been divided into two and a privileged white sector and an impoverished black one. The policy was heavily criticized and many sanctions were placed against South Africa in the 1980s. It was at the end of this period, when GDP as well as HIV/AIDS began to rise.

Examining trade specifically, it is noted that South Africa is the world's largest producer and exporter of platinum and gold as well as of base metals and coal. It is the world's fourth largest producer of diamonds. Agriculture only accounts for about 3.4% of GDP, whereas services account for roughly 65.1%. South Africa's other main industries are mining, automobile assembly, metalworking, machinery, textiles, iron and steel, chemicals, and foodstuffs. Their exports account for roughly 30% of their GDP. South Africa's major trading partners include the United Kingdom, the United States, Germany, Italy, Belgium, China and Japan.

South Africa's integration into the global economy became very apparent in the 1990s, especially after the implementation of rapid tariff liberalization after 1995, the export orientation of industrial policy and fiscal

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restraint through its macro-economic policy, the Growth, Redistribution and Employment Strategy (GEAR) in 1996. What has become clear through my research is that integration of South Africa into the global economy has brought about economic stability for the nation but it has not translated into sustainable economic growth or a reduction in income disparities. High unemployment rates dominate which leaves those from disadvantaged households largely marginalized. Moreover, their volatile domestic currency has created much instability in the export market.

This generalized story of the South African economy has been provided to show that the country has enjoyed increased wealth over the last 15 or so years, some of which can be attributed to globalization. Trade activity, specifically exports is only one component of this sort of globalization.

NATURE OF CURRENT RESEARCH

In the discourse of health, economic activity, specifically trade activity is rarely spoken to. Economists have not yet opened dialogue on this sort of topic – this is clear in the modest amount of literature available on the subject. Relationships have been estimated between economic activity and the incidence of HIV in Africa. A noteworthy association comes from Emily Oster – she suggests that a doubling of exports leads to a doubling of infections (Oster 2009). Using national trade openness as a proxy for traffic flows, evidence suggest that trade is a significant and positive predictor of HIV-infection (Clark and Vencatachellum 2003). It is estimated that 25% of epidemics spread via trade (Voigtlander and Voth 2009). This implies that the flow of people resulting from trade might increase the risk of infection.

Further, much research has indicated that countries with higher road densities have had stronger relationships between exports and new infections (Oster 2009). This has been proposed to be the mechanism by which exports could affect HIV infections. The assumption here is that more exports means more production, therefore more trucking is necessary to relocate goods (Oster 2009). Fundamentally, it is the movement of people which is the underlying effect. Another major assumption that is made in some of the research is that migrant workers (ex. Truckers) have more sex than individuals in the general population (Anarfi 1993; Brewer, et al. 1998; Brockerhoff and Biddlecom 1999; Lurie, et al. 2003; Orubuloye, Caldwell and Caldwell 1993) and they have riskier sex than the average individual (Orubuloye, Caldwell and Caldwell 1993).

The proximity to a road increases individual risk of HIV infection and the effect is sensitive to the use of the road (Djemai 2009). The increased mobility and greater number of opportunities to have sex induced by the presence of better road infrastructure has shown to increase AIDS (Djemai 2009). This negative effect of roads undermines the positive effects; contamination is not prevented even though individuals have better access to information and improved contact with condoms (Djemai 2009). Moreover, the mechanism driving the relationship between distance to a road and the risk of infection is shown to be the increase in demand for casual sexual partners which offsets the increase of condom use (Djemai 2009). Accordingly, the research shows that people choose to expose themselves to the risk of infection despite having better access to self-protective tools (Djemai 2009).

Countries have been examined and have been grouped into categories according to knowledge dispersion. Kenya and Malawi, based on significant relationships between infection and road distance, suggest spatial inequalities in the access to information about HIV/AIDS (Djemai 2009). Cameroon and Ghana fit into the second category, where road proximity is not significant when the media are controlled for (Djemai 2009). Therefore, the media has an effect on knowledge transfer in some of the countries. Lastly, Ethiopia and Zimbabwe point towards success of dispersing knowledge about HIV/AIDS even to the most remote locations (Djemai 2009).

Access to condoms is another topic of interest that has been given a great amount of coverage in the HIV/AIDS discourse. There are obvious spatial inequalities in the access to condoms across countries which are suggested to result from the supply of private and public medical services. Essentially, accessibility through roads increases the knowledge that medical services are available, but usage has not been shown to be statistically significant (Robinson, et al. 2006). It is apparent that access to condoms and to information about the importance of using them has facilitated their use, but once again the empirical evidence does not indicate anything statistically significant (Robinson, et al. 2006). Likewise, people are expressing their preferences towards the set of available preventative measures that are hurting their utility the least. This would therefore mean that individuals who are living closer to roads are using condoms more, but are also engaging in riskier sexual behaviors (Kiriga, et al. 2002).

Basically, the research implies that incentives to health are too low in the Sub-Saharan African countries that have been analyzed. The cost of

changing behavior in Sub-Saharan African countries is too high. For individuals living in low-income countries with life expectancies of no more than 40 or 50 years, there is little incentive to invest in their health and thus their economies (Oster 2007). The United States is a prime example of how education campaigns did work in the mid 1980s, but that is also because the cost of premature death was high (Oster 2007).

Lastly, Oster made a case for Uganda and concluded that thirty to sixty percent of the decrease in their HIV prevalence rate in the 1990s could be attributed to a decrease in export activity (Oster 2009). Oster claims that the reduction could be a result of a decrease in coffee prices during that time (Oster 2009). They are the only country in Sub-Saharan Africa to have seen such a decline in their HIV-infection rates. I think this could be a direct result of a decrease in the labor force during that time period which decreased the number of individuals present in sexual networks, thus reducing HIV-transmission. Another proposition could be that there was an eventual impact on the labor force, whereby there were less people because of increased mortality or morbidity, reducing the number of individuals in the sexual network.

Regardless, the literature surrounding this area is very much in its infancy. This kind of dialogue examining HIV/AIDS from a perspective that questions the integrity of economic activity is still fresh in the public health arena.

CASE STUDY: SOUTH AFRICA

Throughout all the literature, I was hard-pressed to find information on the relationship between South African trade activity and their HIV-infection rates. Therefore, to highlight once again, the purpose of this paper was to examine the variety of factors that contribute to high HIV/AIDS prevalence rates with a direct application to the situation in South Africa. To summarize, South Africa has one of the highest prevalence rates as well as one of the highest GDP values within Sub-Saharan Africa (Figure 6). Thus, examining it with a closer look at the structural issues systemic within the nation was interesting. Little research focused on South Africa for some peculiar reason, uncovering the issue with South Africa seemed very fascinating.

To set groundwork for this discussion, it must be noted that the export market in South Africa predominantly is labored by low to medium skilled workers (Outtek 2000). These markets are primarily capital-intensive rather than labor-intensive (Abt Associates Inc. 2000). Due to that fact, capital-intensive markets generally employ low-skilled workers who, although are accumulating wealth, have low levels of education. Projections from companies confirm that the highest HIV infection levels are concentrated among low-skilled workers (Abt Associates Inc. 2000). Therefore, an individual's level of education is a determinant of the type of work they do, thus contributing to their likelihood of being infected. In a study that modeled each sector confirmed what they referred to as a sector gradient that prevalence rates varied by each sector of the economy (Figure 7) (Vass 2005). It was found that there were higher prevalence ratios in South Africa in the mining, transport, construction, government, accommodation and catering sectors (Vass 2005). The financial, insurance, business and

communication sectors had the lowest aggregate HIV prevalence ratios (Vass 2005).

The sector gradient visible in South Africa is reflective of a variety of high risk factors which are: age, gender, population group, skill level, and length of employment. There is a concentration of Blacks and women in low-skilled work; Whites are more heavily occupied in the high skilled occupations (Vass 2003). These conclusions are similar to projections of infection population groups (United Nations Statistics Division 2009).

All of the studies that have been conducted in South Africa on the labor force and HIV-prevalence have assume that there is a constant risk associated with HIV-transmission; that each individual in each skill level has the same chance of getting infected with HIV. This coincides with the income and survival effect discussed below.

We have established that increased exports are therefore enabling transmission of this disease because of the population group that is employed by the sector. Although, this conclusion cannot be quantitatively analyzed through empirical evidence due to limitations in data, the argument is still valid. Through figure 8 it can be seen that as exports have increased over the past fifteen years, so has HIV-prevalence. It is apparent through the data that HIV prevalence seems to plateau, however as per figure 9, it can be seen that the adult prevalence rates are still continuing to rise.

The focus of this paper is primarily on the labor force (ages 15-49) or the adults, but what should be analyzed is that prevalence is decreasing for children and youth. This is consistent with public health officials' view to <https://assignbuster.com/hiv-aids-situation-in-south-africa/>

this disease $\frac{1}{2}$ they are focused on education and prevention campaigns for youth and children because they have been proven to be most effective if information has been accessed before sexual debut (Frolich and Vazquez-Alvarez 2009).

Due to the fact that low-skilled workers who are occupied by the capital-intensive sectors, which contribute to the exports of the South Africa, have lower levels of education $\frac{1}{2}$ this must be an important aspect to consider in this discussion. However, because it is not the focus of this paper, I will only comment on the negative correlation that is found to be statistically significant for education level and HIV-prevalence (Walque 2009).

It has been noted that income and education are positively correlated. So why in South Africa are the wealthiest the most affected, but the most educated not? Pursuing the topic at hand, we are discussing low-skilled workers who have very little education but who do have income that is relatively better than some of their educated counterparts. Thus we must discuss the relationship between wealth and this disease.

Empirical evidence suggests that wealthier individuals are more likely to be infected with HIV as well as to engage in riskier sexual behaviors than their poorer counterparts (Walque 2009). Traditionally it is thought that income and health are positively correlated, however in the case of the HIV/AIDS epidemic in Africa, things are going in the opposite direction. People are adopting risky behaviors that reduce their human capital potential as their income increases.

Taking into account the fraction of the population that is expected to engage in unsafe sex, individuals must decide whether their first sexual encounter should involve the use of a condom or not. Those who do not use a condom may contract HIV and not survive to experience a second encounter.

Assuming that there is disutility in from using a condom to begin with (Agha, et al. 2002), it can be said that some individuals willingly trade-off future utility for the current utility gained from unsafe sex.

I think a major reason why so many members of the population engage in unsafe sex in Africa is what I would refer to as an income effect. Individuals are more likely to engage in unsafe sex if their income depends not only on their own potential for human capital but also on the aggregate level of human capital present in the economy (Kiriga, et al. 2002). An individual may be more likely to engage in unsafe sex if they know that a large fraction of the population will also engage in unsafe sex. Thus, the negative macroeconomic effects of HIV/AIDS stem from this sort of effect: a large share of the population participates in unsafe sex, which leads to a lower level of aggregate human capital and hence lower income and consumption (Kiriga, et al. 2002). All of this directly leads to greater levels of induced poverty.

Additionally, a term stemming from evolutionary biology is a survival effect can be noted when individuals are aware that many people are having unsafe sex and they choose to have safe sex based on this premise.

Individuals in this situation would be concerned with protecting themselves from contracting the disease. I would assume to see the survival effect in a part of the population that has greater potential for human capital (higher

income capacity). However, this is not what we are observing in South Africa currently, therefore it is safe to believe that South Africa depicts an income effect.

Part of the reason for this sort of pattern must be that household wealth correlates with urban residence, more explicitly as closer proximity to roads; HIV-infection is higher in urban areas as a result of the road density (Djemai 2009). Also, HIV prevalence is a function of survival, the wealthier people with HIV are more likely to afford the appropriate medication, thus living longer. Perhaps, wealth enables individuals to pursue multiple sexual partners.

Wealth is often associated with mobility, time and resources to maintain concurrent relationships (Gillespie and Greener 2006); ½ those that are characterized as an individual having a primary relationship as well as a secondary relationship, with the individual their having that secondary relationship with also having primary and secondary relationships. This causes an individual to knowingly or unknowingly have a large sexual network thus increasing the risk of HIV-infection. The economic factor in these relationships is obvious: wealth and social interaction are linked. Further, wealth increases the number of opportunities to engage in numerous sexual partnerships (Shelton, Cassell and Adetunji 2005).

Furthermore, in South Africa, there is a stronger positive relationship for wealth and HIV status for women. Maybe, women exhibit this quality because wealth is contributing to their mobility and social status or it might be that women are improving their economic status by having more than

one concurrent relationship. In any case, it appears that wealth appears to play a disadvantageous role in HIV transmission. The hypothesis here is that the combined effect of people being less worried about having the disease because they know they can afford treatment and having more individuals with the infection in the community is outweighing the disease itself. As these individuals are better able to manage the disease, the cost of acquiring it is very low.

It can then be concluded that South Africa does show an increase in HIV/AIDS prevalence as a result of increased trade, but only because the individuals employed in the sector are low-skilled workers who have been pushed segregated into this category.

CONCLUSIONS AND FUTURE IMPLICATIONS

The future of the labor force infected with the disease looks quite bleak. Macro-economic modeling indicates that the labor force growth rate will decline which will result in a smaller labor force in the coming years. This will impede economic growth most definitely. ING Barings predicts an 18% decline in the labor force by 2015 (Orubuloye, Caldwell and Caldwell 1993) and Abt Associates Inc predicts a 21% decline when compared to a situation where no AIDS was present (Abt Associates Inc. 2000).

The impact that this could have on productivity as well as South Africa's exports is profound. Considering a large proportion of the sectors that contribute to export activity are experiencing high levels of HIV prevalence, it can be assumed that attrition is high in the labor force. The increased

morbidity and mortality creates absenteeism which hinders not only productivity but also creates a further decline in skill-level and experience.

An underlying issue is that the incentive to live to longer has not been addressed in South Africa. It is clear that poorer countries have a lower life expectancy even in the absence of HIV/AIDS (Voigtlander and Voth 2009). Many researchers have pointed out that a higher life expectancy increases the likelihood of surviving if individuals engage in safe sex, but it does not affect the likelihood of surviving if an individual engages in unsafe sex (Voigtlander and Voth 2009). Thus, unsafe sex has as higher opportunity cost. As a result, if the overall population is experiencing a greater life expectancy, more individuals will choose safe sex. Therefore, the issue here is how should low and middle-income countries increase aggregate life expectancy? The answer to this sort of debate is well beyond the scope of this paper, but can be addressed using basic public health and community development interventions.

Also, what I think might be a solution to this issue is if the South African government introduced implementation of a free antiretroviral drug plan. This would ensure that HIV prevalence decreases. The argument here is that individuals who are wealthier are able to afford medical treatment $i^{\frac{1}{2}}$ they are clearly living longer than their poor counterparts. Thus, they are able to live longer and contribute to the labor force and economic productivity. Even though they are not participating in safe sex, at least they are living for greater periods of human capital aggregation, which increases expected income and lifetime utility from safe sex. The free antiretroviral drug plan would enable all members of the population, rich or poor to exhibit these

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characteristics. Thus, if lifetime utility is increasing, the opportunity cost to unsafe sex will increase.

In conclusion, the low skill and education levels within the sectors that are participating in the export activity of South Africa is contributing to the disease $\frac{1}{2}$ that is the direct association behind why links can be made between exports and HIV-infection. Thus my research hypothesis does stand $\frac{1}{2}$ increase in exports has lead to an increase in wealth which has contributed to the spreading of HIV/AIDS. Therefore, policy discussions should be focused on the individuals who fall within this category. Addressing prevention programs geared towards the individuals are obviously in the labor force and who are in the low-skilled category seem to be of utmost importance.

Figure 1 - HIV Prevalence 1990-2008

Figure 3 - Number of Deaths in South Africa 1997-2007

Figure 4 - Number of Deaths by Age Group, 2008

Figure 5 - GDP in \$US 1980-2010

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