

HIV/AIDS Literacy: An Essential Component in Education for All

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Chapter 1: Literacy and the HIV/AIDS Pandemic

1.1 Introduction

"Education for HIV/AIDS prevention, testing and care" is a newly emerging professional field, which will contribute hand in hand with medicine and public health to the rapidly developing multi-sectorial, global and national, strategies and programs aimed at reversing the current trends of the HIV pandemic. A major challenge in education for HIV/AIDS prevention, testing and care is in conceptualizing, analyzing and researching the possible relationships between HIV/AIDS and literacy.

The human immunodeficiency virus (HIV) is unique: tiny, latent, mutating yet so easily destroyed outside of the body and difficultly transmitted. A virus that in principle is simple to avoid and not particularly contagious, is in fact most deadly because it embodies itself in the most vital of forces: the biological urge that keeps the human species going. "AIDS is the final stages of the lethal infectious disease, beginning with and HIV infection and progressing into a serious and severe damage to the body's immune system" (Schenker, 2003).

Literacy has evolving definitions, beginning with "the ability to read, write and do arithmetic (numeracy)" (GMR, 2005) to "a complex set of abilities to understand and use the dominant symbol system of a culture for personal and community development" (CLQ, 2000). New terms such as "functional literacy", "family literacy", "community literacy" and "skills related literacy (e.g. media literacy, computer literacy, cultural literacy)" are more prominently discussed in the literature (CERIS, 1999; GMR, 2005).

Another field of applied research on literacy, which is rapidly developing is: literacy and health, in which at least three instruments for measuring "health literacy" have been developed and are commonly used (Kickbusch, 2001; Berkman et al, 2004).

This paper reviews our current understanding of the HIV, AIDS and literacy correlation, offers a new definition for HIV/AIDS literacy and suggests areas for applied research and action for enhancing HIV/AIDS literacy in the global fight against HIV and AIDS.

1.2 The "HIV" and "literacy" junction

Education for HIV/AIDS Prevention and Testing (EHPT) is defined by us as the trait of communicating messages and teaching skills to individuals and communities and empowering them (e.g. with self esteem) so that they could be better protected from HIV infection and its socio-economical, psychological and health consequences, have better access to HIV/AIDS voluntary testing and counseling (VCT) and to related prevention and information services. Like most other processes in education, literacy is a pre-requisite for effective learning. Once literate, individuals (and communities) could better acquire the knowledge and skills necessary for preventing themselves from being infected or transmitting the virus to others, including knowing their HIV status and of the range of related prevention, testing and information services available to them.

Education for HIV/AIDS Care (EHC) is defined by us as the trait of communicating messages and teaching skills to individuals and communities living with HIV/AIDS and empowering them (e.g. with self esteem) so that they could have better access to HAART and future treatments for HIV infection, AIDS and related diseases and to psychosocial support. Once literate, individuals (their family members and communities) could better acquire the knowledge and skills necessary for their being effectively treated (and/or treating others) with HIV/AIDS diseases.

HIV/AIDS Educators are trained professional or laymen trusted with the responsibility of educating others in HIV/AIDS prevention, testing and care.

These three elements together are the foundations of *HIV/AIDS Literacy*.

1.3 Defining "HIV/AIDS Literacy"

"HIV/AIDS Literacy is the capacity of individuals and/or communities to obtain, interpret and understand basic HIV/AIDS prevention, testing and care information, skills and services and the competence to use such information, skills and services to prevent HIV/AIDS infection and related stigma and discrimination, to know of and understand their HIV status and to enhance the physical, mental and social well-being of people living with HIV/AIDS. Education for obtaining and utilizing these capacities and competences is trusted with HIV/AIDS educators" (Schenker, 2005).

There are multiple settings and contexts for HIV/AIDS literacy to occur and be measured. Some examples are: schools, non-formal education, healthcare, higher education, teachers' preparatory colleges, vulnerable populations (e.g. mobile, drug users, sex workers), men and women in uniform, out of school youth, parliaments and international organizations.

Whether at an individual or community level, improving HIV/AIDS literacy should be an important goal for any education sector, especially those most affected by the pandemic. UNESCO has reshaped its global strategy to include access to treatment as part of the education needed in HIV/AIDS indicating that "offering learning opportunities for all to develop the knowledge, skills, competencies, values and attitudes that will limit the transmission and impact of the pandemic, including through access to care and counseling and education for treatment" (UNESCO, 2004a). This was further stressed in the launching of UNESCO's new global initiative on HIV/AIDS in 2004. UNESCO's Director General, Koïchiro Matsuura, has acknowledged then the vital importance of prevention education to complement treatment initiatives, whereby a comprehensive strategy is considered one that combines the most effective practices in prevention, education and treatment (UNESCO 2004b).

Three inter-related variables need to be looked at when discussing HIV/AIDS in education sectors: Education, schooling and literacy. In this paper schooling refers to the presence of a learner in a school setting (education demand), whether primary, secondary, tertiary or for adults. Schooling data is referred to also as school attainment.

Literacy is defined by either its basic definition, with data relating to national literacy rates as quoted by UNESCO or in the more complex scale of HIV/AIDS literacy, for which measurement instruments are now being developed (education quality).

Education is the process occurring most often in schools, where children and adolescents engage with teachers in learning new knowledge and skills (education supply). It is assumed that children and adolescents (or adults) who go through education processes, during sufficient years of schooling will acquire literacy skills and other benefits of the education processes. Little attention has been paid to the negative (health) aspects of schooling.

1.4 Objectives

This paper highlights and analyzes:

- Current challenges and policies in HIV/AIDS literacy globally, and in most affected countries, with a focus on prevention;
- Strategies and programs aimed at increasing HIV/AIDS literacy in formal and non-formal education;
- Synergies between HIV/AIDS literacy, prevention and care;
- The special case of HIV/AIDS literacy and ARV/HAART treatment

Chapter 2: Policies and Commitments in HIV/AIDS Education

2.1 Global Commitments

Three major global commitments made this decade by over 150 countries are directly referring to literacy and HIV/AIDS:

- The Dakar Framework for Action: Education For All (EFA), adopted in April 2000;
- The Millennium Development Goals, agreed on in September 2000 and
- The UN General Assembly Special Session (UNGASS) on AIDS Declaration of Commitments from June 2001.

These commitments were to constitute the bases for other international and national policies and strategies aimed at reversing the spread of HIV, increasing schooling and literacy.

In its advocacy report (GCE, 2004) the Global Campaign for Education, proclaim that if all children received a complete primary education, around 700,000 cases of HIV in young adults could be prevented each year. The report suggests that "USD 5.6 billion in aid to basic education, intelligently targeted via EFA fast track initiative, would dramatically increase our chances of halting and reversing the HIV/AIDS epidemic" (GCE, 2004: 2). There is then a 'price tag' suggested for universal primary education in the context of HIV/AIDS.

Most of the goals set forward in the above mentioned declarations and commitments will not be achieved at their prescribed dates. Either because they are too ambitious or due to lack of funding and true political will. More importantly they did not set the tone or the paste for national policies and strategies, which - if at all - emerged independently (Kelly, 2000).

2.2 National Policies

Comprehensive policies on HIV/AIDS and education are a new phenomenon, with only a hand full of countries having developed and published such policies, despite their need to meet concrete goals and deadlines set forward by the majority of UN member states. In most countries policies relating to the education sector are a part of national policies often developed and written by ministries of health or by National HIV/AIDS Programs, where ministries of education, if at all present, are in most cases a marginal player.

Policies on HIV/AIDS and literacy are rare. Based on available data we found no education, nor other national sector HIV policy that declared inclusion of literacy (reading, writing and numerical skills) acquisition an important part of its strategy. Nor did we find ministries of education developing training to facilitate integration of literacy and HIV/AIDS or the development of teaching materials in this area. If at all identified, these were NGOs and individual initiatives that drove on the ground activities integrating the two.²

This should not come as a surprise; 40% of countries worldwide had not begun by 2000 to inject HIV/AIDS in their school curricula (UNFPA, 2003) and in 2003 only 64% of countries sampled were reported to have included school-based AIDS education (Policy

² Several examples are provided in appendix two, describing several case studies.

Project, 2004). A global study conducted by IBE (2004) yield a minimal set of policies on education and HIV/AIDS. One third of the countries of that sample (total 36) have adopted a complete HIV/AIDS policy framework and only two additional countries have made good progress in developing such a framework.

The progress reports on the implementation of the UNGASS Commitments provide another set of data on national policies. Here, too, only six countries (Cambodia, Cape Verde, Ghana, Lesotho, Macedonia and Morocco) made reference in their reports to HIV and low literacy (Lesotho, 2003, UNGASS FU, 2004). In the Middle East, only Israel has a specific education sector policy on HIV/AIDS including a literacy component (IMOE, 1995). Uganda's policy introducing free primary education enabled growing numbers of children to become HIV/AIDS literate through school programs (Hogle et al, 2002) When Kenya eliminated its tuition fee in 2003, more than 1.3 million children entered school for the first time. Malawi and Tanzania have also instituted free primary education (UNICEF, 2004). Of particular interest is the Education International and WHO initiative to increase HIV/AIDS literacy among teachers. Working with teachers' unions in 17 countries who further train tens of thousands of teachers on life skills needed to prevent HIV/AIDS and anti-discrimination, the program is promoting in-country collaboration between ministries of education and health (Jones, 2001; WHO/EI, 2004).

The Global Campaign for Education (GCE) offers five policy measures aimed at ensuring education benefits to the most vulnerable to HIV/AIDS so that EFA goals could be better achieved (GCE, 2004):

- Abolishing school fees and charges
- Offering extra support to help girls and the poor stay in school
- Increasing investment in teachers
- Extending universal education beyond primary level
- Mainstreaming life skills and sexual and reproductive health education in primary and secondary curriculum

Direct quotes selected from recent national policy documents of developing countries on education sectors and HIV/AIDS³ demonstrate:

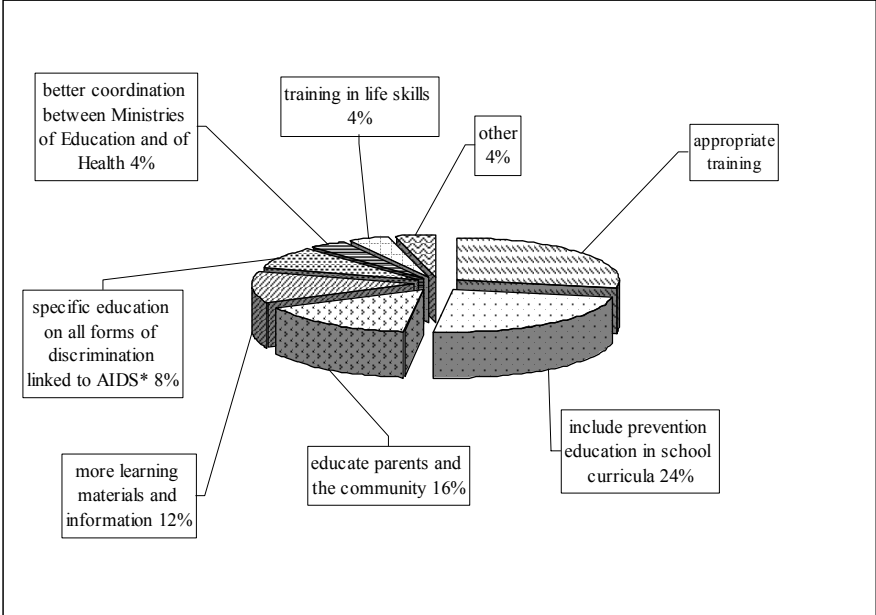
- a. lack of direct reference to literacy;
- b. minimal reference to the international commitments mentioned above;
- c. minimal reference to poverty elimination as a broad context which also includes literacy elevation;
- d. emphasis on action in formal and non-formal education;
- e. more modern policies highlight issues of anti-discrimination and care for teachers and learners;
- f. lack of mentioning multi-sectorial collaboration;
- g. existing policies are far from addressing the GCE measures offered above; almost all include at least one measure.

The chart below presents an answer of a large sample of representatives of teachers' unions asked to answer the question: "In your opinion, what do you think is the most important thing for schools to do to help teachers and students prevent HIV and related discrimination?"

³ See appendix one.

The majority of respondents felt that policy action ("include prevention education in school curricula", 24%) and training ("appropriate training for teachers", 28%) are the most needed strategic approaches (Education International, 2002).

Figure1: Priorities in National HIV/AIDS Activities



Source: EI Survey 2002

Chapter 3: Curricular and Instructional Materials Supporting HIV/AIDS Literacy

Four types of programs in education for HIV/AIDS prevention and testing (EHPT) are known to have taken on board literacy and HIV/AIDS:

- Programs in formal and non formal education, which focus on HIV/AIDS prevention and incorporated literacy concepts
- Programs in literacy, which now incorporate messages on HIV/AIDS
- More comprehensive programs, targeted at special populations
- Train the trainer programs

Several possible classifications of these programs exist (Schenker, 2004, Schenker et al, 1996). There is, however, no list, nor one source or data base compiling information on such programs. A recent conference on literacy in Europe was informed that on one hand, structured programs on literacy and HIV/AIDS are almost non-existent and on the other, that close to 40% of "purely" literacy training programs in Africa expend to other areas in education, most commonly health and HIV (UIE, 2005).

A major distinction between various literacy and HIV/AIDS programs is by age: programs for adults have been developed in Morocco, Nepal, Namibia, Botswana, Mali, Cambodia and India, while such programs for adolescents were reported in: Guyana, Jamaica, South Africa, Cambodia and Guinea (UIE, 2005).

Another distinction is by the media used: print or electronic. Realizing that reading levels and other literacy barriers (e.g. mother tongue) prevent massive dissemination of HIV/AIDS messages to young people in and out of school through unified texts (e.g. brochures, leaflets, books) - encouraged the development of simplified written and illustrative materials, as well as moving into radio, TV and other forms of electronic media. Widening the scope of languages used is another development (Michielutte et al, 1992; Schenker, 2001).

In Botswana, posters and booklets have been published in San language (UIE, 2005). In Israel, the Jerusalem AIDS Project, which has developed school-based programs on HIV/AIDS in 22 developing countries, uses innovative cartoon flipcharts to communicate HIV/AIDS messages to youth in communities with diverse cultural, literacy and language backgrounds (JAIP, 2004). In Sierra Leon, print educational materials are developed to meet different levels of literacy in the target population (MOE, 2002). In Saudi Arabia, personal communication and visual media techniques were introduced to assist 483 secondary school students in Buraidah secondary schools to better comprehend HIV/AIDS messages (Saleh et al, 1999).

Radio has become a preferred media for increasing HIV/AIDS literacy in many developing countries. From March 2005, UNESCO Bangkok's Culture Unit began to distribute audio materials of its ethnic minority language radio soap operas for the prevention of HIV/AIDS, trafficking and drug abuse across the Upper Mekong Sub-region and China. The cassettes and CDs of the radio soap operas are distributed in the Hmong, Jingpo and Lahu languages (UNESCO, 2005). In Guyana, UNICEF has produced a special radio show on HIV/AIDS for adolescents (IDB, 2003). In Africa YIBEKAL from Ethiopia is considered a best practice in radio programs on HIV/AIDS.

Examples of more comprehensive HIV and literacy programs include initiatives such as: the "Village Communicators" project in Burkina Fasso, where local selected villagers are trained in HIV/AIDS communication, so that they could increase HIV/AIDS literacy using communication techniques depending on the level of literacy in the community (PLAN Burkina, 2004); the "FLOWER" program in Israel, where trained medical students, equipped with literacy-sensitive visual materials, provide school and community-based education for HIV/AIDS prevention in rural areas and by out-reaching to developing countries (Schenker, 2003); and the African "PROLITERACY" initiative, which mobilizes community based NGOs, public schools and churches in combating both HIV/AIDS and literacy in Malawi, Tanzania, Uganda and Ethiopia (Proliteracy, 2005).

An analysis of these efforts in HIV/AIDS literacy, demonstrate lack of sustainability, of coherency and of strong linkages to the global campaign on literacy. As stand alone programs, many of the mentioned initiatives have been very successful in:

- a) Linking HIV and literacy
- b) Reaching out to large populations in need
- c) Producing innovative approaches (Smith et al, 2000; Rudd et al, 2003; Ratzan, 2001)

Chapter 4: HIV/AIDS Literacy in Non-formal Education

An estimated 284 million children worldwide aged 12 - 17 are currently out of school and this figure is set to grow to 324 million by the year 2010 (World Bank, 2002, UNGA, 2002). The vulnerability of out-of-school youth, especially girls, to HIV/AIDS infection has been well assessed (UNFPA, 2004), and worldwide programs to effectively reach out to this youth with messages on HIV/AIDS have been developed. Non-formal education is not restricted to youth. Non-formal Education (NFE) is defined as: any planned, organized and sustained education activity-taking place outside formal education institution, responding to education needs for persons of all ages. The purpose of NFE is to provide alternative learning opportunities for those who do not have access to school or need specific life skills and knowledge to overcome the barriers they encounter towards sustainable development (UNESCO 2005b).

A recently published compendium of HIV/AIDS education initiatives (UNFPA & Margaret Sanger International, 2004) highlights those in non-formal education, and offers several essential considerations for successful implementation. These include:

- Comprehensive and skills-based health education, including reaching young people before the initiation of sexual activity;
- Promotion of key protective behaviours, including condom use for dual protection, delay of sexual initiation, and mutual faithfulness to one uninfected partner;
- Behaviour change communication that integrates strategies and activities in counselling, information, education and communication (IEC), and social marketing of health services;
- Realistic and active youth participation in program design and implementation including well-supervised and supported peer education programs;
- Reduction of stigma against people living with HIV and AIDS in order to decrease discrimination; promote voluntary counselling and testing (VCT) and public dialogue about HIV; and prevent further transmission by those already infected with HIV;
- Provision of or linkage to key youth-friendly services, including voluntary counselling and testing, access to condoms, and management of sexually transmitted infections;
- Linkages across sectors of HIV prevention interventions to other programs, including broader health services and youth development interventions, e.g., promoting economic and job opportunities;
- Promotion of positive social norms through engaging the wider community of gatekeepers, influential adults, and decision-makers who affect youth; working with parents, teachers, communicators, religious and other community leaders, and policy makers;
- Advocacy and support for policies and political leadership that create an enabling environment for the preceding elements.

Adult literacy is a particular section of non-formal education. Very recent data collected in a large sample of programs around the world (Egen, 2005; GCE, 2005) demonstrates grassroots' influences also on this type of programs: against all expectations, adult literacy programs in many countries (also those not affected by

HIV/AIDS) explicitly include as a routine: health, health promotion and HIV/AIDS content and activities. In fact, half of these programs considered addressing HIV/AIDS to be their principle aim. Two thirds responded that health promotion is their principle aim.

Within the framework of the United Nations Literacy initiative for Empowerment (LIFE), UNESCO is developing initiatives to provide and promote literacy and non-formal education incorporating HIV/AIDS, STDs and drug misuse education as transversal themes (UNESCO 2005b). These projects' focus on basic educational needs in an overall out-of-school and adult sustainable development perspective, aimed at enhancing the livelihood needs of the marginalized and vulnerable, increases their potential success in elevating HIV/AIDS literacy in non-formal education settings. Interestingly, adult education programs tend to build on the expressed needs of clients and closely link adult literacy with HIV/AIDS.

The need for training teachers in HIV/AIDS literacy has been well established (Schenker and Nyrenda, 2002). It is now possible to expand that notion to non-formal education settings as well.

Chapter 5: Synergy between Literacy and HIV/AIDS Prevention and Care

Several different types of biological, psychological and social pathways have been proposed as possibly explaining the association between education and health in general and HIV/AIDS in particular (NIH, 2003):

- Education leads to higher income which allows the purchase of more health benefits, better housing, mobility and other goods and services.
- Education might lead to greater optimism about the future, self-efficacy sense of control, or different time preferences. Any of these psychological characteristics might alter health behaviors or adherence to medical treatments and ability to self-manage chronic illnesses.
- Education might improve important cognitive skills including literacy, enhanced decision making, analytical skills, or other cognitive skills which in turn allow individuals to be more successful in managing their health problems, in interacting with the health care system, or in preventing future health problems.
- Education may improve health by laying the foundation for the individual's integration into society, not only in terms of the learning acquired for effective functioning, but in terms of social competencies and the ability to function in hierarchical, structured settings and within supportive networks.
- Because formal education often occurs at the stage of the life cycle when significant formation of health behaviors is also occurring, these behaviors may be either directly or indirectly influenced not only by specific formal educational experiences but also by the social context provided by schools. Individuals may be affected by the behavior and norms of the other students or their teachers.
- Education might also influence the biological pathways including neurologic, inflammatory, and endocrinologic processes or structures.

Assumed to be of high importance in determining health prevention and care outcomes it is quite surprising that a research program on the above pathways was launched by the US NIH only in 2003 (NIH, 2003).

5.1 Increased Need for Education in the Context of HIV/AIDS

In the context of HIV/AIDS, a plea for increased need for education (broadly defined) was made in view of research showing clear benefits for extended years of schooling on HIV/AIDS infection rates and on behavior change in adolescents.

A 32-country study found that women with post-primary education were five times more likely than illiterate women to know facts about HIV/AIDS. Illiterate women, on the other hand, were four times more likely to believe that there is no way to prevent HIV infection (Vandermoortele & Delamonica, 2000). In Zambia, during the 1990s, HIV infection rates fell by almost half among educated women but showed little decline for women with no formal schooling. Other studies have shown that in Zambia, the more schooling young people have, the less likely they are to have casual partners and the more likely they are to use condoms (UNICEF, 2003). Other countries show similar patterns. In 17 countries in Africa and four in Latin America, better-educated girls tended to delay having sex and were more likely to insist that their partner use a condom (World Bank, 2002).

A study in 72 capital cities found significantly higher infection rates where the literacy gap between women and men was large, (Over, 1998) and another study indicated that countries where the literacy gap between girls and boys was above 25 per cent were more likely to have generalized epidemics than countries with a smaller gap (Herz & Sperling, 2004).

Regarding specific knowledge about HIV, a study conducted in Uganda over the course of the 1990s showed that both women and men who finished secondary school were seven times less likely to contract HIV than those who received little or no schooling (Millennium Project, 2004).

Badcock-Walters et al (2004) assume that improved literacy will allow students at risk to understand and judge their options better and that improved retention in school will increase their chances of survival. This assumption needs to be confirmed scientifically.

Boler & Carroll (2003) suggested that "a general foundation in formal education serves as a protective barrier to HIV infection". Referencing research from several countries the authors try to explain a paradox: more educated people showed higher HIV prevalence rates. They argued that higher mobility and socioeconomic status of better-educated persons enabled sexual encounters with a greater number and range of partners, therefore increasing their susceptibility to HIV infection. "This positive correlation can subsist ", argue the authors, "only as long as the epidemic is at an early stage, and that reversal in the trend occurs once infection rates expand among broader population segments. The dominant explanation for this phenomenon is that as an epidemic advances and people gain knowledge and skills, the more educated people are better able to change their behavior, thus reducing their risk to HIV" (Boler & Carroll, 2003:3).

It is also possible to assume that the progression/"maturation" of the HIV/AIDS epidemic in a country takes such a heavy and rapid toll among the more educated (and young) in its initial stages, that the numerator in "education" variables (e.g. school attainment, literacy rates) is skewed accordingly.

5.2 Is Literacy Protecting Young Adults from HIV/AIDS Infection?

A study from Zimbabwe (Gregson et al, 2001), where 15-18-year-old girls who were still enrolled in school showed HIV prevalence rates of 1.3%, and prevalence among girls of a similar age who had dropped out of school rose at 7.2% is stated as evidence to a current trend in which participation in the formal education system reduces susceptibility to HIV infection. This, being contrary to the earlier studies which suggested that education and HIV infection correlated positively.

Explanations offered (Boler & Carroll 2003) are:

a) that participation in schooling leads to later sexual debut and lower numbers of casual sexual partners. The counter-argument is that girls who are already sexually active are more likely to then drop out of school and

b) education increases access to information: both to HIV related materials in school, and better access to such material later in life. A counterargument is that education is in fact a confounder for socio-economic status: richer learners are more likely to

stay in the formal education sector; they may also be in a better position of power to protect themselves from HIV infection.

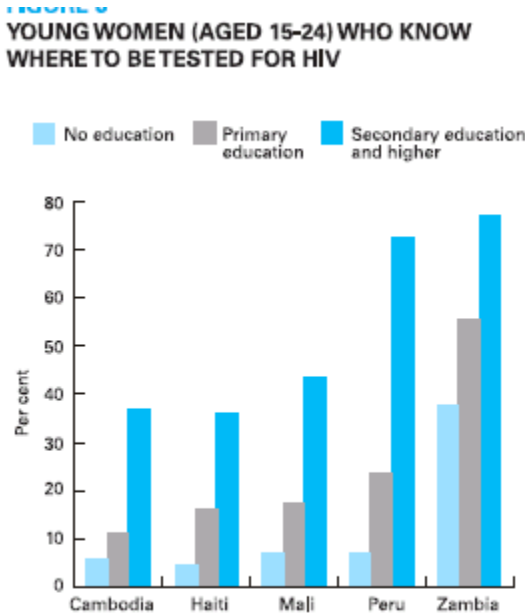
De Walque (2004) supports these later findings showing that while there was some convergence in the early to mid nineteen-nineties in Uganda, there is now clear evidence of reducing HIV prevalence associated with both primary and secondary education.

Schooling plays a role in delaying sex for young women. In a recent analysis of eight sub-Saharan countries, women with eight or more years of schooling were 47 to 87 per cent less likely to have sex before the age of 18 than women with no schooling (Gupta, 2003).

Surveys in 22 countries also showed a link between higher education levels and more condom use during high-risk sex, while surveys in Haiti, Malawi, Uganda and Zambia linked higher education to fewer sexual partners (Demographic and Health Surveys, 2000-2001).

The data in Table 1 (cited in: UNICEF, 2004) is indicative as well to the positive association between education and HIV prevention. Higher education ("years of schooling") lead to better information on HIV testing among young women sampled in five countries. An important limitation of this data is that there is no information about the statistical models used and statistical significance among tested groups.

Table 1: Knowledge on HIV Testing and Schooling



Source: Demographic and Health Surveys, 2000-2002.

However, in a most recent paper reviewing the subject, Badcock-Walters et al (2004) provide data from Malawi and less affirmative data from Uganda showing that years of education and HIV prevalence are positively associated. The data presented from Malawi

shows increased HIV-prevalence with increased educational attainment: HIV rates rose from 19.2% for those with no education and 19.1% for those with primary level education, to 23.2% for those with secondary education and 27.9% for those with post-secondary education. Shell and Zeitlin (2000) arrived at similar conclusions reviewing data from Eastern Cape.

Glynn et al (2004) report on cross-sectional general population studies they conducted in 1997-1998 in Cotonou (Benin), Yaoundé (Cameroon), Kisumu (Kenya), and Ndola (Zambia), including about 2000 adults in each city. There was no association between schooling and HIV infection in men or women in Kisumu or Ndola. Women in Yaoundé and men in Cotonou, with more schooling, were less likely to be HIV positive. These associations persisted after adjusting for sociodemographic factors. Similar trends in men in Yaoundé and women in Cotonou were not statistically significant. Increased schooling was associated with significantly decreased risk of HSV-2 infection in women in Kisumu and Ndola and men in Cotonou. In all the cities, individuals with more education tended to report less risky sexual behavior. There was no evidence of an increased risk of HIV infection associated with education as seen in earlier studies. The researchers conclude that the most educated may be responding more readily to health education programs.

What could be learned from these contradicting results is that the correlation between HIV prevalence and educational variables (e.g. levels of education, school attainment) requires thorough investigation, with studies controlling for possible confounding variables.

5.3 How could HIV/AIDS Impact Education?

In a school environment that is heavily dominated by HIV/AIDS, literacy and learning achievements are likely to be inhibited by such factors as (Kelly & Bain, 2003):

- Frequent absenteeism of individual teachers or tutors, due to repeated bouts of sickness, care for the sick at home, or funeral attendance.
- Shortages of qualified educators and increased reliance on those who are less well qualified or experienced.
- The cessation of learning activities (particularly if the school is small)—periodically, because of teacher sickness; for a longer period, if a teacher dies.
- Lethargy and a sense of fatalism in teachers and tutors who know that they have HIV or AIDS.
- Teacher uneasiness and uncertainty about personal HIV status.
- Frequent student absence due to the need to care for the sick at home.
- Intermittent student participation, with an irregular start-stop, “drop out/drop in” pattern.
- Repeated occasions for grief and mourning in the school or training institution, in families, and in the community.
- Difficulty on the part of both educator and learner in concentrating on teaching and learning activities because of concern for those who are sick at home.
- Unhappiness and fear of stigmatization and ostracism on the part of both teachers and learners who have been affected by HIV/AIDS.
- Uncertainty and distrust in the relations between learners and teachers (who may be caricatured as abusers of children or as those responsible for HIV introduction and spread).

The combination of HIV/AIDS-related random teaching and learning, the loss of educators, low teacher and learner morale, reduced financial resources, and inadequate management provision reduce an education system's ability to meet the EFA goals of providing and improving all aspects of the quality of education. From the data presented above, it's impossible to draw conclusions on literacy as a protective factor against HIV/AIDS. Part of the difficulty in reaching conclusive results is the inter-changeable definitions of schooling, education and literacy used in the different studies. This area (of HIV prevention and literacy at the individual's level) deserves further attention by researchers.

Chapter 6: Literacy, Prevention and HIV Prevalence

6.1 The special case of South African Teachers

One would have expected that should literacy be a protective factor against HIV/AIDS, then at least two professional groups be spared from the tragedies of the pandemic namely teachers and doctors. Reality proves different. Emerging studies on HIV/AIDS prevalence in professional groups (Grant et al, 2004; Shisana et al, 2004) demonstrate that health care professionals are infected with HIV at disproportionate rate to their level of education and information on HIV/AIDS. Teachers and doctors are our best proof that HIV/AIDS literacy is surly not all about information.

A most comprehensive study in South Africa (Shisana et al, 2005) provides essential data on South African teachers and HIV/AIDS.

The study found an overall infection rate of 12.7% among the national sample of teachers. Although male educators had lower HIV prevalence than the males in the general population, and older female educators had lower HIV prevalence than females in the general population, the differences observed were not statistically. These striking results suggest that educators have similar HIV prevalence rates to that of the general population. Socio-economic status of the educator was measured by educational level attained, income and household economic situation. Table 2 (source: Shisana et al, 2005) presents data on HIV prevalence among teachers by their level of qualifications:

Table 2: HIV prevalence among educators, South Africa

Table 4.10: Overall HIV prevalence among educators by socio-economic status, South Africa 2004

Socio-economic status	n	HIV positive (percentage)	95% CI
Level of qualification			
First degree and above	8 551	10.0	9.1–10.9
Diplomas	7 094	15.9	14.8–17.0
Grade 12 and under	1 420	14.0	11.9–16.4

The results show that educators with a degree or higher had the lowest HIV prevalence at 10%. The ratio was significantly lower than in the two lower socio-economic groups. Those with a lower education, that is, who had attained Grade 12 or lower, had a prevalence of 13.9%, a figure that was different to but not significantly lower than that of those with a diploma or those who held an occupational certificate, 15.9%.

Who if not science and life orientation teachers should have known most about HIV/AIDS and behaved accordingly? While the HIV epidemic has left almost no learning area untouched, it was found to be high among life orientation and science educators (13.4% and 12.6% respectively). Table 3 (source: Ibid) presents further data on the qualifications of South African educators and their HIV status.

The explanation for the high prevalence of HIV among teachers of additional languages is that the majority of these educators are black Africans, who were found in the study to be the group of educators in South Africa with the highest risk of acquiring the virus.

Table 3: HIV prevalence by learning area taught, South Africa

Table 4.24: HIV prevalence by learning area taught (trained in), South Africa 2004

Learning areas	n#Number teaching	HIV positive (percentage)	95% CI
Foundation phase	10 552 (3 871)	12.9 (12.7)	11.6–14.2 (10.7–14.9)
Foundation languages	9 922 (22 044)	11.2 (11.5)	10.0–12.6 (10.5–12.5)
Additional languages	1 086 (2 215)	23.6 (24.0)	19.2–28.7 (20.1–28.4)
Arts and culture	2 777 (2 349)	13.2 (10.8)	9.7–17.6 (6.6–17.0)
Economics and management sciences	4 059 (3 108)	14.1 (15.3)	11.7–16.9 (12.3–18.9)
Social sciences	2 255 (8 860)	11.8 (11.8)	9.3–15.0 (10.0–14.0)
Life orientation	8 814 (6 167)	13.4 (11.3)	11.4–15.7 (8.6–14.7)
Mathematics	6 129 (7 978)	12.9 (13.8)	11.5–14.4 (12.4–15.4)
Natural sciences	5 752 (7 464)	12.6 (13.9)	10.3–15.2 (11.7–16.4)
Technology	5 429 (1 708)	7.4 (8.2)	4.7–11.7 (5.7–11.5)
Special	59 (298)	0.0 (11.9)	0.0 (4.1–30.5)
Other	233 (5 589)	13.8 (13.4)	11.9–16.1 (10.9–16.5)

Note: # Most educators gave multiple responses (teaching or trained in more than one learning area)

The key findings are to revolutionize our thinking both on HIV/AIDS literacy and on teachers as HIV/AIDS educators. The results from this study are so convincing that we must now include teachers as a prime target group for interventions to protect them from HIV infection and anti-discrimination. Their role as HIV/AIDS educators may need to be revisited.

South Africa is the most recent example of documented impact on teachers. The HIV/AIDS pandemic has devastated the education sector in many other countries as well. Substantial numbers of teachers are ill, dying or caring for family members. In the late 1990s, for instance, more than 100 schools were forced to close in the Central African Republic because of AIDS-related deaths. In 2000, AIDS was reported to be responsible for 85 per cent of the 300 teacher deaths there (UNAIDS, 2004). In Malawi, the pupil-teacher ratio in some schools swelled to 96 to 1 as a result of AIDS-related illness (USAID, 2002).

The results of the South African study and reports from other countries on the high toll of HIV/AIDS among the more educated professionals, irrespective of the in-country "maturation" of the HIV/AIDS epidemic, requests new thinking on our earlier assumptions as well as realization of the need to approach more seriously teachers (and doctors) not only as providers (e.g. of education, services, role modeling) but as clients (e.g. for HIV/AIDS literacy interventions). The SA data may also raise questions

whether the information coming from more than a few countries (Gregson et al, 2002) about schools as settings for age-mixing HIV infection are only anecdotal.

6.2 Crude data on HIV prevalence and Education: Country watch

This section's objective is to present and analyze data from HIV/AIDS affected countries (mostly in Africa) as it relates to literacy, secondary school enrolment and HIV prevalence.

Data is presented on 17 selected countries, including: 15 PEPFAR (President's Emergency Plan for AIDS Relief) Countries, selected by the US president's initiative for global HIV/AIDS funding as well as seven African countries in which the generalised epidemic passed the threshold of HIV prevalence rate of 20%.

Five of these countries (South Africa, Botswana, Namibia, Zambia and Zimbabwe) are also included in the PEPFAR countries and the additional two are Lesotho and Swaziland. Selecting the above countries for comparisons is logical as they are grouped under:

- a) a global initiative with wide support
- b) an epidemiological parameter of severity

HIV prevalence and literacy rates presented are based on 2003 estimates. Data was compared with that of EFA 2005 Global Report and UNAIDS for accuracy (GMR, 2005; UNAIDS, 2004).

Literacy (also by gender) is defined in this section as "age 15 and over who can read and write". Literacy rates range from 42.7 in Ethiopia to 98.8 in Guyana. Secondary enrolment data is based on the EFA 2005 Global Report gross enrolment information. The data on school enrolment in Nigeria is based on UNESCO statistics from 1997. Prevalence is the estimated number of HIV infected individuals in a country, based on WHO/UNAIDS second generation of surveillance parameters. The range of HIV prevalence rate (of 15 years and older) is between 4.1 in Uganda to 38.8 in Swaziland.

Table 4: HIV Prevalence and Literacy in 14 African Affected Countries Sorted by HIV Prevalence

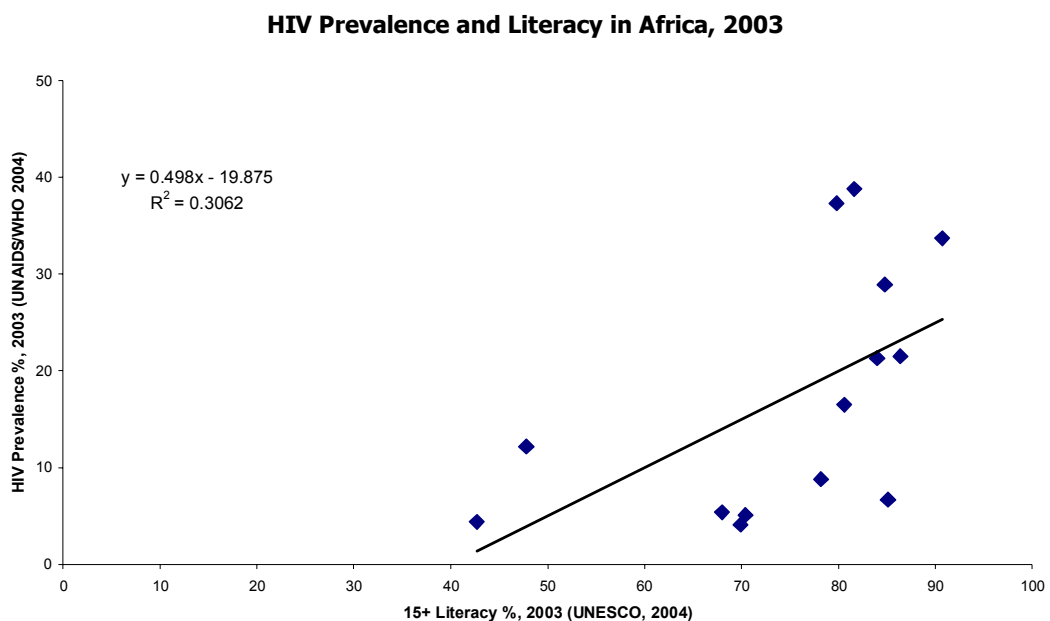
Country	HIV Prevalence (%)	Literacy (%)	M – Literacy (%)	F-Literacy (%)	M – Secondary enrolment (%)	F - Secondary enrolment (%)
Uganda	4.1	69.9	79.5	60.4	19	15
Ethiopia	4.4	42.7	50.3	35.1	24	15
Rwanda	5.1	70.4	76.3	64.7	15	14
Nigeria	5.4	68.0	75.7	60.6	33 *	28*
Kenya	6.7	85.1	90.6	79.7	34	30
Tanzania	8.8	78.2	85.9	70.7	6	5
Mozambique	12.2	47.8	63.5	32.7	16	11
Zambia	16.5	80.6	86.8	74.8	27	21
Namibia	21.3	84.0	84.4	83.7	57	65
South Africa	21.5	86.4	87.0	85.7	83	90
Lesotho	28.9	84.8	74.5	94.5	30	38
Zimbabwe	33.7	90.7	94.2	87.2	45	40
Botswana	37.3	79.8	76.9	82.4	71	75
Swaziland	38.8	81.6	82.6	80.8	45	45

6.3 Literacy and HIV Prevalence are Linked in Africa

A positive association exists in Table 4 between literacy rates and HIV prevalence with Kenya (lower HIV prevalence, higher literacy) and Mozambique (higher HIV prevalence, lower literacy) being the exception. Enrolment in secondary school is ranging between 6% (Tanzania) and 83% (South Africa) for boys and 5% (Tanzania) and 90% (South Africa) for girls. The higher the attendance rate, so is the gender specific literacy rate in-country. Only in two countries - Lesotho and Botswana - female literacy rate were higher than that of males and in these two countries also secondary school enrolment was higher for girls than for boys.

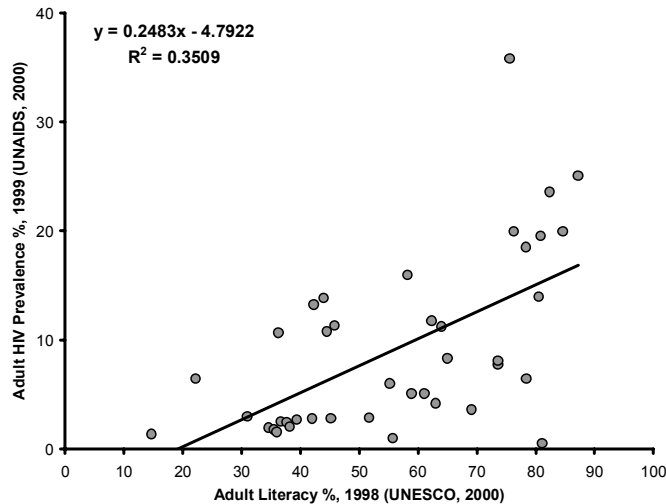
The association between HIV prevalence and literacy is further demonstrated in the Figure 2 below. Data plotted from the above mentioned 14 countries in Africa show that at the national level there is a positive relationship between literacy rates and HIV prevalence rates.

Figure 2: HIV prevalence and literacy, Africa 2003 (selected countries)



It is interesting to note that a similar analysis, presented in Figure 3, with data from 1998-1999 yield the same trend (Jukes & Desai, 2005). The authors referred to specific examples from Zimbabwe and Malawi to strengthen the case linking positively literacy rates with HIV prevalence rates.

Figure 3: HIV prevalence and literacy, Africa 2000 (selected countries)



Data on gender, literacy and HIV prevalence rates is important in understanding not only the direction of the epidemic, but also how successful are programs aimed at closing the gender gap in education and health. In Table 4 the range of female literacy rates is between 32.7 (Mozambique) and 94.5 (Lesotho). When sorted by female literacy, Lesotho replaces South Africa in the lead five countries on the scale, but the trend remains: high female literacy is predominant in countries with high HIV/AIDS prevalence.

Also from this table its quite clear that clusters of countries could be established: those with low female literacy, which in most cases also demonstrate low HIV prevalence; those with high literacy (above 80%), which in most cases (surly with in the African continent) correspond to countries demonstrating high HIV prevalence rate, and a cluster of countries with mixed data (e.g. high female literacy, but low HIV prevalence; low literacy rates, but high HIV prevalence).

When looking at female literacy rate and data on female secondary school enrolment, there are inconsistencies in the figures, which we expected to be more closely related. For example: while female gross enrolment ratio in Tanzania is 5.2%, the female literacy rate is 70.7%. Similarly, in Rwanda the female gross enrolment ratio is 13.5 and the female literacy rate is 64.7%. In Lesotho gross enrolment ratio is only 37.6%, the female literacy rate is as high as 94.5%. Similarly, in Zimbabwe the female gross enrolment ratio is 40.3% and the female literacy rate is 87.2%.

This data suggests that when examining "education and HIV/AIDS" a clear distinction must be established between measured variables. In many cases "education" is defines as: primary, secondary or no schooling (Hargreaves & Glynn, 2002; UNICEF, 2004), while school enrolment data or literacy data are often not considered, although easily available at national levels.

It is interesting to note from Table 4 that English speaking countries demonstrate a clearer positive correlation between literacy (specifically female literacy) and HIV prevalence rates.

6.4 Literacy and HIV prevalence are linked globally

The trend presented in Africa- correlating HIV prevalence and literacy- holds globally. Table 5 shows data from the following UNAIDS regions: North America, Western Europe, Sub-Saharan Africa, North Africa and Middle East, Oceania, Latin America, Caribbean, East Asia, Eastern Europe and Central Asia. In each region we selected the top ranking 2-3 countries sorted by HIV prevalence rates (2003 estimates), and added the relevant literacy and secondary school enrolment data (UNESCO, 2001).

It is interesting to note:

- Literacy rates in all high HIV prevalence rate countries -in all regions- are high, with the highest in Europe (West and East), Australia and North America and the lowest in North Africa and the Middle East.
- In most of the above mentioned countries (except in MENA) the female and male literacy rates are identical or very similar.
- In most countries the secondary school enrolment of boys and girls is high, and in most countries in which enrolment is high, also literacy rates are high.
- Countries in which English is first or second language score highest on the literacy rate.

6.5 limitations and further research on literacy and HIV/AIDS

The objective of the analysis presented in this section was to tabulate HIV prevalence rates and five education indicators: literacy rate, male specific and female specific literacy rates, secondary school enrolment ratio of males and secondary school enrolment ratio of females in selected countries. Our aim was to present the most recent data from a unified reliable source. The World Fact Book (CIA, 2005) provides health, education, social and other indicators in an updated and systematic website. The EFA global monitoring report of 2005 was the second source used for both checking data reliability and for additional data to the first source.

The **first limitation** of this study is the comparison of HIV and education indicators per country. The most recent HIV prevalence data and on literacy rates are from 2003 estimates, while the most recent UNESCO data on enrolment is from 2001.

HIV prevalence data is obtained by WHO/UNAIDS from member states based on surveillance criteria and procedures, but at best could only be considered estimates. HIV prevalence data is used by international agencies, researchers and NGOs to assess national, regional and global trends develop policies and evaluate interventions. The most common way of collecting HIV statistics is from antenatal clinics. This method is favored because antenatal clinics are found in most parts of the world, and there is therefore a common basis on which to compare statistics gathered from them. In countries with a generalized epidemic (at a similar level across the whole population), national estimates of HIV prevalence are based on data generated by the testing of samples taken from pregnant women attending antenatal clinics. Data from this source are commonly available to some extent all over the world, and therefore allows comparison between statistics from different countries or continents.

Table 5: Countries with the highest HIV Prevalence Sorted by Literacy Rate, Region

Country	HIV Prevalence (%)	Literacy (%)	M – Literacy (%)	F- Literacy (%)	M – Secondary enrolment (%)	F - Secondary enrolment (%)
Caribbean						
Haiti	5.6	52.9	54.8	51.2	21	20
Trinidad and Tobago	3.2	98.6	99.1	98.0	77	84
Bahamas,	3.0	95.6	94.7	96.5	90	93
East Asia						
Cambodia,	2.6	69.4	80.8	59.3	27	16
Thailand	1.5	92.6	94.9	90.5	85	81
Myanmar	1.2	85.3	89.2	81.4	41	38
Eastern Europe and Central Asia						
Ukraine	2.0	99.7	99.8	99.6	97	97
Russia	0.9	99.6	99.7	99.5	92	92
Belarus	0.3	99.6	99.8	99.5	83	86
Latin America						
Honduras	1.8	76.2	76.1	76.3	NA	NA
Guatemala	1.1	70.6	78.0	63.3	41	38
Brazil	0.7	86.4	86.1	86.6	102	113
Oceania						
Papua New Guinea	0.6	64.6	71.1	57.7	25	20
Australia	0.1	100	100	100	155	153
North Africa and Middle East						
Sudan	2.6	61.1	71.8	50.5	NA	NA
Libya	0.2	82.6	92.4	72	102	108
Morocco	0.1	51.7	64.1	39.4	45	37
North America						
USA	0.6	97	97	97	94	92
Western Europe						
Spain	0.5	97.9	98.7	97.2	112	119
France	0.4	99	99	99	108	108
UK	0.1	99	99	99	160	200

In countries with a low-level or concentrated epidemic (where the epidemic is concentrated in high-risk groups of the population), national estimates of HIV prevalence are mainly based on data collected from populations most at risk (e.g. commercial sex workers, men who have sex with men) and on estimates of the sizes of the populations at high risk and at low risk. Only very recently population-based surveys (Wiktor, 2004) started to yield better data on HIV prevalence.

This is the **second limitation**. 'HIV prevalence' is given as a percentage of a population which in developing countries is often difficult to measure - partly because much of the population does not have access to healthcare facilities and relies on traditional medicine. Obviously, this does not give a full picture of the spread of the epidemic in the country as a whole. It is today common knowledge that young people, especially 15-49 years, constitute the major at risk and the infected population in countries. Yet, most people in this age group are not tested for HIV and the specific prevalence rate of school attending youth is not available.

For the purpose of this study the definition of literacy used was "age 15 and over who can read and write". This is the definition commonly used and we found it acceptable for the objectives of the study. Knowing that HIV/AIDS are to do with young people in society, it was rational to also look at the secondary enrolment ratios in countries. The rational was that if school enrolment at secondary level was high, more students will be literate (basic and functional), thus better equipped with knowledge and skills to protect themselves from HIV infection and/or infecting others. This is also translated into HIV/AIDS interventions: education for HIV/AIDS prevention is the mastery of informing young (and less young) people about HIV/AIDS and anti-discrimination, presenting to them choices for prevention and skills that will enable them to not become HIV-infected nor HIV-infect or discriminate others. In other words: to become HIV/AIDS literate.

The above definition of literacy is limited to reading and writing, missing functional dimensions. Future research should rely on an HIV/AIDS literacy definition, like the one suggested in section one of this paper, to be measured with valid and reliable instruments yet to be developed (Schenker, 2005).

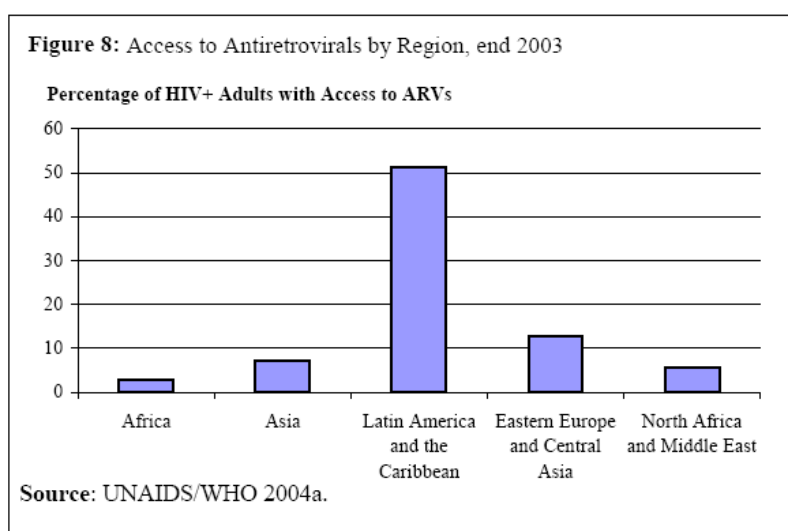
The **third limitation** of the study is the over lapping definitions of schooling, education and literacy in published papers, which limit our ability to answer the question: are schools being institutions that help prevent or help propagate the further spread of HIV/AIDS? The available data is not sufficient to be conclusive. While we have shown the important role HIV/AIDS literacy could have in both HIV/AIDS prevention (including testing) and HIV/AIDS care, answering questions of this stature requires field data collection and inter-country comparisons which are beyond the scope of this paper.

Chapter 7: Education for HIV/AIDS Care (EHC) ⁴

Despite improvements in anti retroviral (ARV) drugs' development, manufacturing, distribution and funding access to ARVs and other HIV-related treatment remains profoundly low. Initiatives to increase access to ARV treatment have been launched with limited success. As of June 2005 approximately 1,000,000 people in low- and middle-income countries have access to ARV treatment (WHO 2005). In sub-Saharan Africa, where an estimated 25.4 million people are living with HIV, only 150,000 people have access to treatment. Worldwide, less than 1 in 10 people—who need ARV treatment receive it (Macklin 2004, UNAIDS, 2004).

Figure 4 taken from Sass & Castel (2005) demonstrates the global distribution of access to ARV treatment by the end of 2003. Since then, WHO and UNAIDS have launched the "3 by 5" initiative aiming at having three million infected worldwide on ARV treatment by the end of 2005. To date (November 2005) this initiative was successful in getting only 1,000,000 individuals on treatment (WHO, 2005).

Figure 4: ARV distribution by regions, 2003



Other initiative to increase access to ARV include: *Free and Universal Access Initiative* - promoting national and free of charge coverage for all those needing treatment, *Generic Manufacturing of HIV/AIDS-Related Treatment* - ensuring the production of ARVs at low cost, *Private Sector Contributions* - mostly by large enterprises to their infected employees, *Drug Donations* - through limited private-public partnerships, *New Funding Mechanisms* - The US President's Emergency Plan for AIDS Relief (PEPFAR), The Global Fund to fight HIV/AIDS, Tuberculosis and Malaria, the World Bank's Multi-country HIV/AIDS Program for Africa (MAP) and *Free by 5 Initiative* - a declaration emphasizing free treatment for all in need (Saas & Castel, 2005).

⁴ This section is heavily based on a paper: "Treatment Education as Part of a Comprehensive HIV/AIDS Response" (Draft 12.1.05) by Justine Sass, consultant, and Chris Castle, Senior Program Specialist of UNESCO's Division for the Promotion of Quality Education, Section for an Improved Quality of Life who is today UNESCO HIV/AIDS Focal Point.

While all these efforts to increase care-focused HIV/AIDS literacy among policy makers, donors and international agencies already resulted in scaled up resource mobilization for free and comprehensive access to ARV- the fundamental problem of very low HIV/AIDS literacy among patients, their family members and their care givers remains a challenge. Therefore a need for a more comprehensive *Education for HIV/AIDS Care (EHC)* exists.

7.1 Treatment Literacy

In 2003 “treatment literacy” or “treatment education,” was initially outlined at the International HIV Treatment Preparedness Summit held in Cape Town, South Africa. Summit participants emphasized that “information is as important as medicine,” and that “without good treatment education, we cannot effectively manage side effects or expect good adherence to therapy” (FCAA 2003:5). The Summit concluded that treatment education is needed not only for people with HIV, but for health care providers, educators, advocates, government officials and the greater public.

The term "Treatment literacy" is used to engage communities and individuals to learn about ARV treatment (Saas & Castel, 2005), including:

- Promotion of VCT to know one’s HIV status—a prerequisite for enrolment in treatment programs
- ARV treatment enrolment criteria, with an emphasis on the right to equitable treatment access, including consideration of gender equity
- Information on ARV treatments and drug regimens (where to access treatment, how the drugs must be taken, potential side effects, possible interactions with other drugs, and options for alternative treatments) and how treatment may affect men and women differently
- The importance of adherence, as well as how communities and individuals can support people with HIV to take the drugs as instructed by health professionals and how communities and individuals can support people with HIV to adhere to their medications
- Treatment costs (drugs, laboratory tests for monitoring, provider fees, etc.)
- Importance of continued protective behaviors

7.2 Literacy and promotion of VCT

Improving HIV/AIDS literacy rates in most affected countries could ensure that more people will know their HIV status. To date, less than 1 percent of adults aged 15-49 years are accessing voluntary counseling and testing (VCT) services in the 73 low- and middle-income countries most affected by AIDS (Policy Project, 2004). WHO and UNAIDS estimate that to reach the “3 by 5” target, 300 million people will require HIV testing. This estimation is more than the total number of people that have voluntarily tested since HIV testing began twenty years ago (Panos 2004a).

HIV/AIDS literacy programs with a VCT-focus do exist, but are often outside the education sector (Christian Aid 2004, Ministry of Health Brazil, 2004).

The Namibian AIDS Law Unit (ALU)’s initiated an HIV/AIDS literacy campaign in 2003 to raise awareness and understanding about HIV/AIDS treatment as a human right. This included the production and distribution of T-shirts, posters and booklets on

access to treatment as well as the production of a series of radio programs broadcasted on national radio.

Israel is the only country to date in which the education sector is engaged in promoting VCT. The Israeli ministry of education is formally encouraging all students between ages 15 and 18 to be voluntarily HIV tested and counseled. The ministry has developed an HIV/AIDS literacy campaign to that effect, which was launched March 2005 (IMOE, 2005) with booster activities at the beginning of the 2005-2006 school year (IMOE, 2005a).

This paper suggests that education for HIV prevention be combined with education on HIV testing, namely through *Education for HIV/AIDS Prevention and Testing (EHPT)*, which is an essential part of HIV/AIDS literacy.

7.3 Literacy and enrolment criteria

HIV/AIDS literacy must make it clear that not all persons living with HIV will benefit immediately from ARV treatment. Eligibility criteria for treatment are usually based on medical considerations. Expansion of eligibility criteria to include both socioeconomic and cultural factors, in addition to medical factors, as well as local epidemiology - are not yet approved (WHO 2004b).

7.4 Literacy and Information on drug regimens

Like other treatment education programs, HIV/AIDS literacy programs must provide information on how to access treatment, how the drugs must be taken, possible side effects and adverse effects, interactions with other drugs, and alternative treatments in cases of treatment failure or toxicity. WHO has produced such an initial guide for patients, family members and caregivers as part of its "3 by 5" initiative (WHO, 2004e).

7.5 Literacy and treatment costs

HIV/AIDS literacy programs can provide information on services that can help people afford ARVs on a regular, long-term basis. It can also play a role in mobilizing political will and commitment to improve access to and reduce the costs of ARV treatment.

One of the pillars of the WHO/UNAIDS "3 by 5" strategy is to favor access to ARV treatment among the poor through the creation of sustainable financing mechanisms that ensure that poor people are exempt from user fees and co-payments (WHO/UNAIDS 2003). Numerous studies have demonstrated that these fees affect the uptake of and the adherence to drug regimens, particularly among the poor who may need to make trade-offs in payments for food and shelter as opposed to medicines (Attawell & Mundy 2003).

7.6 Literacy and adherence to drug regimens

Strict adherence to ARV drug regimens is essential, and HIV/AIDS Literacy plays here a major role if any of the access to ARV initiatives are to be successful (Barnett et al, 2002). HIV therapy requires adherence of 90-95 percent (Chesney 2003). Adherence is defined as a patient's ability to follow a treatment plan, take medications at prescribed times and frequencies and follow restrictions regarding food and other medications (Population Council/Horizons et al. 2004).

Inadequate adherence to treatment is associated with high levels of HIV in the blood (viral loads), continued destruction of the immune system (declining CD4 counts), disease progression, episodes of opportunistic infections and poorer health outcomes (Chesney 2003). Taking inappropriate combinations or frequently missing doses can also have serious public health consequences, as the virus can mutate and develop resistant strains.

For therapy to be successful, patients need information on HIV, the potential side effects of ARV treatment, information on how the medications should be taken (when, with or without food/water, etc.) and the importance of not missing doses (Macklin 2004, WHO 2004d). Possible obstacles to successful adherence should be discussed and addressed (Wolf, 2005).

As adherence is a most crucial factor for the success of initiatives like "3 by 5", the study of possible correlations between literacy and adherence is important in providing data that could be used for the development of better interventions.

Similar to other complex health behaviors, successful medication adherence is associated with an individual's confidence in their ability to take their medications as directed (Kalichman et al, 2005). In the case of medication adherence, self-efficacy beliefs correlate with self-reported and objectively measured missed medication doses (Eldred et al., 1998; Demas et al., 1998). Literacy and education are significant and independent predictors of adherence. Persons of low literacy were more likely to miss treatment doses because of confusion, depression, and desire to cleanse their body (Kalichman et al, 1999), had poorer knowledge of one's HIV-related health status, poorer AIDS-related disease and treatment knowledge, and more negative health care perceptions and experiences (Kalichman & Rompa, 2000). In the US, high school completion was associated with a 5.5% increase in adherence to a regimen of combined anti-retroviral therapy (Golin et al, 2002). Years of education was also associated with understanding HIV terms and accurately reading and understanding instructions on prescription bottles in Latino HIV/AIDS patients (Van Servellen et al, 2003). In Thailand 40% of HIV/AIDS patients followed up during first months of ARV treatment had difficulty reading prescription, 25% were not following instructions and 28% were not taking medicine on time (Fisher, 2004). In Africa studies show other results. In Uganda (Byakika-Tusiime et al, 2005) there was no significant relationship between adherence and post-secondary education. In South Africa (Orrell et al, 2003), a composite measure of socioeconomic status, including education and income, was not related to adherence and in Botswana (Weiser et al, 2003) surprisingly, those who had not completed secondary education were 3.9 times as likely to adhere to their treatment as those with higher education. An analysis by years of education was only reported in the later study.

Ammassari et al (2002), however, report that in 14 studies that assessed the relationship between education and adherence to HIV/AIDS treatment, 10 found no relationship and 4 found higher levels of adherence amongst the more educated. This relationship disappeared when controlling for other demographic factors in all 4 studies.

7.7 Literacy and Continued Protective Behaviors

HIV/AIDS literacy has an important role in prevention of HIV infection among the already infected. "Prevention with positives" reflects an emerging area of interest for HIV prevention interventions with people with HIV as part of a comprehensive HIV prevention strategy (CDC 2003). Positive prevention programs support people with HIV to:

- Protect their sexual and overall health
- Avoid practices that put them at risk of contracting new sexually transmitted infections (STIs), other opportunistic infections, such as TB, or super-infection with other strains of HIV
- Delay the weakening of the immune system and the onset of AIDS-related illnesses
- Prevent further transmission of HIV

In this context it's interesting to note that low health literacy was shown to be a predictor of HIV test acceptance. Patients presenting in the USA to a Urgent Care Center with poorer health literacy were more willing to comply with health care providers' recommendations to undergo HIV testing than those with adequate health literacy when an "opt-out" strategy combined with a low-literacy brochure was used (Barragán et al, 2005). In three other cross-sectional studies reporting on the relationship between literacy and control of HIV infection, unadjusted analyses produced mixed results: better reading was associated with greater odds of undetectable viral load in two studies (Kalichman, Rompa & Cage 2000; Kalichman et al, 2000) but not in a third (Kalichman & Rompa, 2000) and also greater odds of having a CD4 count greater than 300 (Kalichman, Rompa & Cage, 2000).

7.8 HIV/AIDS Literacy and "3 X 5"

The "3 X 5" initiative provides a new deal for education on HIV/AIDS prevention. It would be an enormous opportunity lost if prevention and treatment are not now combined in a mutually supporting package. A step in this direction was announced in 2005 with the launch of IMAI (Integrated Management of Adult and Adolescent Illness). IMAI is a health strategy that addresses the overall health of the patient. One of its most distinctive elements is its focus on the management of chronic disease and prevention rather than just the treatment of acute illness. This supports the shift from an exclusively acute care model of health service delivery to a chronic care model, involving family members and lay healthcare givers. IMAI also integrates prevention and mental health (WHO, 2005). HIV/AIDS Literacy is an important concept in support of IMAI.

Our literature review shows that low- literacy is correlated with more limited access to HIV care and support, and to compliance. In that context, the "Gaborone Statement" on the "Role of the Pharmacist in the Prevention & Management of HIV/AIDS"(Botswana, May 2004) The Association of Nurses in AIDS Care conclusions (Devereux & Porche, 2004) and the American Medical Association "Ask me Three" initiative (AMA, 2003) are indicative of new commitments healthcare professionals are ready to take on board as they realize their role in increasing HIV/AIDS literacy at the individual, national and global level.

Conclusions

This paper presented a comprehensive overview of the links between literacy and HIV/AIDS. We have reviewed papers published in scientific peer-reviewed journals, policy documents at national and international levels and other related "grey area" publications. We could conclude that in our search for more effective ways to address the challenges posed by HIV and AIDS, we must broaden our understanding of the HIV/AIDS and literacy links, make better use of existing data and develop an applied research agenda that could be paving the way for implementers of EHPT and EHC.

This paper offered a definition for a new literacy to be acquired by all: HIV/AIDS literacy. It is based on concepts developed in the search for improving individuals and communities' health literacy, and it integrates two notions in one: education for HIV/AIDS prevention and testing (EHPT) and education for HIV/AIDS care (EHC).

We have also looked into the statistical correlations between HIV prevalence rates and literacy rates in countries most affected by HIV in Africa, and in some other parts of the world. The data suggests that countries with high HIV prevalence rates also have high literacy rates. This new finding is a paradox: one would have expected that high literacy be associated at national level with lower HIV prevalence rates.

This paradox must be thoroughly investigated and resolved as it currently underlines at the minimum the possible confounding effects of other variables influencing HIV prevalence if not contradicts a most basic paradigm in education for HIV/AIDS prevention.

The latter part of the paper described the need to enhance education for HIV/AIDS Care (EHC) as a key component of HIV/AIDS literacy, demonstrating failures in treatment due to lack of information and patient education. This, too, is an area of great need for both more research and systematic programs.

The acceptance of HIV/AIDS literacy as a foundation for policy and program implementation in the HIV/AIDS prevention-care continuum could lead to the development of measurements and benchmarks as monitoring and evaluation tools.

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Appendix 1: NATIONAL POLICIES

To better understand the nature of inclusion of literacy in the education sector policies on HIV/AIDS in countries which developed and/or implement them, we bring herewith selective direct quotes from the national policy documents of the respective developing countries (IBE, 2004; Badcock-Walters et al, 2004):

Sierra Leon (January 2002):

The Government shall develop and implement in collaboration with partners a national education curriculum that incorporates HIV/AIDS/STI awareness, behavioral change and life skills, into all levels of formal and non-formal institutions of education. Government shall ensure the strengthening of the Family Life Education/ Social Studies Curricula to incorporate HIV/AIDS/STIs education (Sierra Leon MOE, 2002).

South Africa (May 2000):

The underlying causes [...of the AIDS epidemic] include socio-economic factors such as poverty, migrant labor, commercial sex workers, the low status of women, illiteracy, the lack of formal education, stigma and discrimination. The national HIV/AIDS & STD Strategic Plan must address all these immediate determinants and underlying causes (SAMOE, 1999, SA MOH, 2000)

Haiti (2002):

Ensure that all young people, especially those in difficult circumstances, have access to basic education for a sufficient number of years of education (Haiti MSPP, 2002).

Kenya (2001):

To protect young people against HIV and STD infections, the government will provide direction in designing culturally, morally and scientifically acceptable AIDS education programs for youth in and out of school and advocate the protection of youth against antisocial behavior that puts them at risk (Kenya MOH, 2001)

Kenya (November, 2003):

Every person has the right to education.... In particular access to education shall be facilitated for orphans and vulnerable learners(Kenya MOE, 2001)..

Ethiopia (October,2002):

Research, through the collaboration of the government, NGOs and civil society, should be conducted to determine the impact of HIV on worker

productivity, on the educational system, on the cost of health care, and so forth (Ethiopia MOH, 2002).

Ghana (2001):

Key elements of the MOE plan involve:

- strengthening linkages among learners, educators, individuals and communities to combat the spread of the disease;
- training of teachers as motivators and students as peer educators for early diagnosis and treatment of STIs;
- condom distribution and advocacy (Ghana MOH, 2001).

Pakistan (1997):

All persons have the right to protection from HIV infection and other STIs. Additionally, all persons have the right to information about HIV and other STIs, and to the means to protect themselves from HIV and other STIs... HIV/AIDS is a complex and multi-dimensional problem. Multi-sectoral involvement is therefore essential to national, provincial, and local responses to HIV/AIDS.

Malawi (November, 2000):

Priority areas:

- Reduce HIV Transmission
- Develop Socioeconomic Factors through
- Service Delivery
- Translate and disseminate the reviewed laws, policies, and practices in local languages to facilitate access and appreciation (Malawi, NAP, 2000, 2003).

Jamaica (January, 2004):

The policy aims to ensure there is a balance struck between protecting those persons who might be at risk because of contact with a person who is HIV-positive and the rights of the individual who may be suffering from HIV/AIDS to be in an educational institution.

Six-Pronged Objective:

- To highlight the existence of the HIV/AIDS epidemic in Jamaica and particularly within the education system
- Provide guidelines for institutions on the treatment of students and school personnel infected with HIV/AIDS
- Promote the use of universal precautions in all potential infectious situations

- Ensure the provision of systematic and consistent information and educational material on HIV/AIDS to students and school personnel throughout the system
- Instill non-discriminatory attitudes towards persons with HIV/AIDS
- Help reduce the spread of HIV infection (Jamaica MOE, 2004)

Botswana (September, 1998):

It is the responsibility of all staff involved in education to participate in HIV/AIDS education since the disease has social, economic, scientific, demographic and moral implications. This staff includes education officers, principals and headmasters, teachers, lecturers and instructors in all subject areas and boarding staff (Botswana MOE, 1998).

The Philippines (February, 1998):

HIV/AIDS Education in school- The Department of Education, Culture and Sports (DECS), the Commission on Higher Education (CHED), and the Technical Education and Skills Development Authority (TESDA), utilizing official information provided by the Department of Health, shall integrate instruction on the causes, modes of transmission and ways of preventing HIV/AIDS and other sexually transmitted diseases in subjects taught in public and private schools at intermediate grades, secondary and tertiary levels, including non-formal and indigenous learning systems: Provided That if the integration of HIV/AIDS education is not appropriate or feasible, the DECS and TESDA shall design special modules on HIV/AIDS prevention and control: Provided, further, That it shall not be used as an excuse to propagate birth control or the sale or distribution of birth control devices: Provided, That it does not utilize sexually explicit materials.

Of unique interest is section 11 in the above policy which has no precedence in any other policy document analyzed: "...Penalties for Misleading Information- Misinformation on HIV/AIDS prevention and control through false and misleading advertising and claims in any of the tri-media.... is punishable with a penalty of imprisonment for two months to two years.

Zambia (November 2004):

...This policy shall be sensitive and responsive to the different needs of men and women, boys and girls, and interventions shall recognize the special vulnerabilities of the girl child... (Zambia MOE, 2002, 2004)

India (March 2004):

Prevention of further spread of the disease by making the people at large and specially the high risk groups, aware of its implications and provide them with the necessary tools for protecting themselves from getting

infected. Control of Sexually Transmitted Diseases among sexually active, economically productive groups together with promotion of condom use a measure of prevention from HIV infection will be the most important component of the prevention strategy.

Namibia (October, 2003):

To ensure that age and ability appropriate, accurate and scientifically defensible life-skills, sexual health and HIV and AIDS education and resource materials are made available to learners and students as part of the curriculum in language and terms that are understandable Namibia (Namibia MOBE, 2003).

Uganda (February, 2004):

HIV/AIDS shall be mainstreamed into every policy, procedure, practice and program in the education sector, consistent with principles of Poverty Elimination Action Plan (PEAP).

Nigeria (2003):

"... developing Nigerian youth's capacity to define preventive strategies for responding to the HIV/AIDS epidemic. Both in-school and out-of school youths will be incorporated in the program... addressing high risk youth population and non-high risk youth population." (Nigeria MOE, 2003)

Appendix 2: CASE STUDIES

Case Study 1: Kenya Deaf Community (World Bank, 2004)

Meeting the HIV/AIDS prevention and care needs of persons with disability requires special attention by policy makers and programs' implementers at all level. The case of deaf communities has special relevance to the literacy debate. In Kenya, a project aimed at reducing the transmission of HIV in Kenya's deaf community was developed utilizing a peers' -educator program that teaches HIV prevention in sign language.

The deaf community in Kenya, estimated at between 300,000 and 600,000, represents a significant portion of the country's two million HIV-infected people. A study of some 88 deaf students around the age of 18 revealed that three-quarters of them knew very little about HIV. Among other contributing factors, a curriculum in sign language about HIV did not exist, and health care professionals—already overwhelmed with the pandemic—found it difficult to focus on this marginalized and isolated group. Deaf children, as others in Kenya continue to lose parents and teachers to AIDS. They too become sexually active and pregnant at a young age and may be more prone to sexual abuse than their peers who can hear.

The development of a peer-educator system for HIV prevention and support, which includes a curriculum and training manuals for master educators and peer educators, provided a model for deaf communities. The use of sign language and peer educators to promote HIV/AIDS awareness is a novel approach to empowering the deaf community in Kenya. New visual aids and a larger vocabulary in Kenyan sign language needed to be developed to better address the needs of as many as 1,300 deaf adults and children, who were the target population for this project.

In Kenya, the deaf community is secluded from the mainstream largely in the country's 35 boarding schools for the deaf. Many deaf people are illiterate with regard to printed and spoken English and Kiswahili, and sign language is the main form of communication.

Rather than attempting a miracle out of print and spoken media to reach the deaf community, the program chose to exploit the deaf community's high literacy in Kenyan Sign Language (KSL) and its vast resource of peer leaders.

The new visual aids and a larger vocabulary in KSL were culminated in the development of a curriculum with two sets of novel training manuals, one with modules to train peer-educators, and the other used by peer-educators to educate other members of the deaf community.

With no Kenyan health professionals who are proficient in KSL referral services are rarely successful in the deaf community. For example, when a deaf student is in need of medical attention, usually a teacher is assigned to accompany and interpret. However, because the teacher is not trained in counseling nor proficient in KSL, let alone interpreting, sufficient information often is not relayed and the student is unable to understand the medical care and preventive measures that are offered.

Staff may also not understand the importance of confidentiality and the danger of stigma where HIV/AIDS is concerned. What information the teacher does have may be shared casually with other students or teachers rather than being confidential. This produces an inability and reluctance in the deaf student to take further steps to maintain health and well-being, and effectively prevent sexually transmitted infections.

This issue is dealt with in this project by assigning a deaf peer educator or teacher - trained in the basics of sexual health, HIV, counseling, client rights, and confidentiality by professionals with the use of sign language interpreters - to accompany the deaf individual in need. This peer educator system will give deaf people better access to available HIV services and medical services in general.

From its inception in 2004 to date the design of new materials and training kits for peer educators is complete, with eight different activities, anecdotes, an account of a deaf person with HIV, CD media on HIV/AIDS (from an NGO), and a novel strategy plan for peers creating new activities.

Over 55 peer educators were trained in an intensive workshop which was conducted 26-28 April 2004 in Kisumu with trainees from three pilot sites. All 55 trainees successfully completed training.

In June 2004 the first out reach activity begun with a five-session program at First Baptist Church of the Deaf in Ruiru. 25 participants from the deaf community attended. This was followed by three more sites: the Anglican Church of Kenya of the Deaf in Kisumu and Immanuel Church of the Deaf in Nairobi.

To date the peer educator network now has 40 members and growing from all over the country.

Case Study 2: Ethiopia Radio (ProPride, December 2003)

To use the media, particularly the radio, to fight the spread of HIV/AIDS in Ethiopia was hailed by experts making a selection of the best project proposal from 2700 submissions to a World Bank international competition among development practitioners operating all over the world. PRO PRIDE's radio program on HIV/AIDS, YIBEKAL, was among the 178 successful grantees.

The radio program produced by the Ethiopian NGO discusses the subject of HIV/AIDS exclusively. YIBEKAL, Amharic for "That's Enough," is broadcast on FM radio and currently reaches three million listeners in and around Ethiopia's capital, Addis Ababa. YIBEKAL is considered one of the best radio programs in Addis, and the grant of the World Bank helped its scaling up to national level.

Pro pride's radio program is the first and the only program treating problems of HIV/AIDS in various ways. It tries to address the problem of HIV/AIDS not only through dramas but also through interviews, research findings, listeners' letters, news, true-life stories and other forms. Some of these editions are new techniques unheard of in any Ethiopian radio programs. There are 14 different editions in YIBEKAL radio program, and many of them keep changing over time.

Recorded YIBEKAL programs are also given to school and out of school youth anti-aids clubs so that they could use it in their mini-media and promote behavioral change within the youth community. So far, a total of 50 cassettes (100 YIBEKAL programs) were given to these anti AIDS clubs, and tens of thousands of youngsters are believed to have benefited from this scheme. This thing has never been tried even by the government or any non-governmental organization. YIKBEL has become so popular that institutions and individuals working in very remote areas have even paid money to get copies of YIBEKAL programs to be used in their respective localities and other individuals are making YIBEKAL copies of their own and giving them to people and organizations who are out side the FM range. The recorded programs were exported also to the USA for use in Amharic radio programs, making YIBEKAL the only Amharic radio program to be heard by the Ethiopian community living in America.

The example of YIBEKAL is also used in Israel, where the largest population infected with HIV/AIDS is amongst the immigrant Jewish Ethiopian population which was airlifted from Ethiopia to Israel in 1991, with continues immigration of smaller magnitude since.

A program on national Israeli radio is used to support other national efforts to prevent the further spread of infections in this population.

Pro pride radio program on HIV/AIDS, being one of the most popular programs on FM in Ethiopia, has an estimated 3 million loyal listeners. In a recently made public opinion poll by one Amharic News paper, YIBEKAL was chosen as the Years best radio program.

Case Study 3: FRESH (Gillespie A, Jones JT et al, 2004)

Launched at the Dakar World Education Forum (2000), The FRESH Initiative (Focusing Resources on Effective School Health) brought together five international agencies- UNESCO, UNICEF, WHO, the World Bank and Educational International - to agree on a basic framework for school health, hygiene and nutrition programs, which could assist governments to implement or improve school-based health programs as part of their efforts to achieve EFA. The Framework highlights in particular the connections between HIV/AIDS and access to and quality of basic education.

Para. 62 in the Dakar EFA Framework reads: "The HIV/AIDS pandemic is undermining progress towards Education for All in many parts of the world by seriously affecting educational demand, supply and quality. ...Education systems must go through significant changes if they are to survive the impact of HIV/AIDS and counter its spread, especially in response to the impact on teacher supply and student demand"

The FRESH initiative is based on research and experience that show that school-based health programs can significantly improve both health and learning outcomes, and that successful efforts call for effective partnerships between teachers and health workers, the involvement and support of parents and the community-at-large, and the active participation of young people in the design and implementation of health-promoting activities in four core areas:

- school health policies
- water, sanitation and the environment
- skills-based health education
- school-based health and nutrition services

What the FRESH framework provides for in relation to HIV/AIDS is a model for linking HIV/AIDS-specific approaches with a broader school health program under each of the above core areas. Using the FRESH framework to prevent HIV/AIDS/STI and related discrimination through schools is an exercise of strengthening both HIV/AIDS and literacy in school settings, following the notion that successful education programmes require... healthy, well-nourished and motivated students, and an environment that not only encourages learning but is welcoming, gender-sensitive, healthy and safe. The following are examples of how each of the FRESH core areas can contribute to attainment of EFA goals:

- Health-related policies- At the national level: ensuring the right of HIV/AIDS affected people to education or to continue teaching, combating stigma and discrimination within the education sector and directing resources to strengthen recruitment, training, management and other elements of a nation's educational infrastructure. School and national-level policies can also address factors affecting vulnerability to HIV/AIDS, including all types of school violence (e.g., the abuses of students and teachers, sexual harassment and bullying, corporal punishment); security to and from schools; prevention of discrimination on the basis of gender, pregnancy, sexual orientation, religion

or culture; gender sensitivity; and provision of recreational activities and safe places to play.

- Provision of safe water and sanitation- Safe drinking water and sanitation facilities are essential first steps toward a healthy learning environment. Protection against infections from dirty water or poor hygiene will help HIV-infected children, as well as teachers and other school staff, to remain healthy and productive at school.
- Skills-based health education - Well-implemented school-based HIV/AIDS prevention programs have shown to reduce key HIV/AIDS risks, particularly when they go beyond the provision of basic information, and help young people develop knowledge, attitudes, values and life skills needed to make and act on decisions and opportunities concerning health. Skills-based health education to prevent HIV/AIDS can be linked with other issues relevant to young people, including pregnancy and reproductive health, population education and family life education.
- School-based health and nutrition services - Schools can facilitate access to youth-friendly reproductive and sexual health services, especially early and effective care of STI (which can reduce risk of HIV transmission), reproductive health services, access to male and female condoms, HIV care and treatment, treatment of opportunistic infections such as tuberculosis, and voluntary and confidential counseling and HIV testing, reproductive health and other related concerns - services which have helped many young people to adopt safer sexual practices. Enhancing overall health and nutritional status is an important way to reduce vulnerability to HIV/AIDS, and sustain the health of those already infected

Case Study 4: Nepal - Combating HIV/AIDS: A Literacy and Economic Approach (Samjhauta Nepal, 2004)

Supported by a grant of the World Bank this project's aim is to enable Nepali women to focus on HIV/AIDS issues that are important to them, so that they will learn, solve problems, and reach out to educate and help others.

The overall goals were:

1. Integrating HIV/AIDS education to non-formal education and economic empowerment
2. Development of the self instructional curriculum with focus on:
 - general information on STI and HIV/AIDS
 - STI and HIV/AIDS transmission
 - STI and HIV/AIDS prevention
 - reproductive health of women and its relation to STI and HIV/AIDS
 - negotiation for safe sex
 - communication with children and community
 - networking for care and support to PLWAs
 - roles and responsibilities of the community and the PLWAs

3. Overcoming stigma through group reading and discussion process
4. Negotiation for safe sex
5. Creating community linkages and support network through savings group
6. Creating awareness campaigns

In Nepal reaching women on a large scale and mobilizing them to protect the health of themselves and their families is a rational investment. PACT - a local NGO - implemented this project in the district of Bara, based on previous success in mobilizing more than 500,000 women in adult literacy programs and with the following objectives:

- to create an understanding of STDs and HIV/AIDS and their methods of transmission;
- to provide women with information on how to protect themselves, their partners and their children;
- to empower women and enable them to discuss issues surrounding HIV despite associated stigma;
- to empower women to negotiate safe sex with their husbands despite traditional gender-related constraints;
- to encourage women to demonstrate leadership through community responses to HIV;
- to expand the use of Appreciative Planning and Action (APA), an adaptation of Appreciative Inquiry, in Nepal.

Results

2530 women organized into 111 economic groups were reached with information about the dangers and risks associated with HIV/AIDS. Eight post-literacy booklets were developed for peer education groups to read and discuss on topics such as awareness, prevention, negotiation, and taking action in their communities. Trainers were also trained in issues such as overcoming stigma through group discussion, creating community support groups, and mobilizing the community to combat the epidemic. Throughout the project eight training events were organized with regular participation of 222 group representatives through six district - based partners and eleven health facilitators. The women then returned to their groups to lead the members through discussion and dialogue.

These activities involved many hundreds of women. The lessons learned teach us that:

- It's crucial to have active involvement of the target audience fostered right from the start during the development of the curriculum and bringing their success stories into it is one among the keys to the success of the project and was experienced essential for sustainability.
- Even the illiterate women could gain knowledge on HIV/AIDS prevention and control listening to someone reading in the group.
- Interpersonal communication and group discussion were more important than electronic and print media to educate neo-literate and illiterate women.
- It is better to start with a small project and then replicate it to the larger audience.

Case Study 5: Israel - HIV/AIDS Literacy: Medical Students as school educators (Schenker, 2003)

Developed in Beer Sheva, Israel and launched in the early 80th, the “Perach” (Flower) Health Education Program (FHEP) is considered among the first national peer educators’ projects in the world which facilitates the provision of school-based health education by medical students. While the FHEP had begun as a general health promotion project, covering a wide range of topics, a strong push for its wide implementation was in the early days of the HIV/AIDS epidemic (1985), when a need to present the complex messages of HIV/AIDS to children with low HIV/AIDS literacy was an urgent, driven mostly by fear of massive infections.

In 1986 the Hebrew University of Jerusalem branch of the FHEP started to incorporate education for HIV/AIDS prevention among the topics taught in the health education classes provided by medical students to primary and secondary school children. Since then, training materials, skills building workshops and train-the-trainer modules for medical students teaching HIV/AIDS prevention in Israeli schools were developed, using cartoons and simple games to allow better understanding of the messages in a multi-cultural nation like Israel.

The national curricula for primary and then secondary schools on HIV/AIDS prevention and anti discrimination emerged in 1986 out of this initiative. A formal legislation of the Ministry of Education accepted in 1988 the curricula “Explaining AIDS to Children” for national use, and stated among the qualified to introduce it into schools: “medical students”. This became a European landmark in the formal acceptance of medical students as health educators in schools. And among the first programs of its kind in HIV/AIDS literacy.

A pilot research project on this initiative in Israel concluded that the pilot program has succeeded in correcting misleading information, adding relevant information and reinforcing exact knowledge on HIV/AIDS among junior high school students in Jerusalem. “...based on a variety of teaching methods and a unique teaching staff-med students - a program can also lead to certain changes in students attitudes to AIDS and PLWH”.

Dr Inon I. Schenker, PhD, MPH - Short Bio:

Dr Inon Schenker is a senior HIV/AIDS prevention specialist. A researcher, developer and program manager, with extensive experience in cross-cultural HIV/AIDS prevention interventions: planning, design, implementation and evaluation. He was the Rapporteur of the session on HIV/AIDS and Education at the EFA inauguration meeting in Dakar and contributed to the development of the EFA HIV-related goals. Since then he had worked as a consultant on HIV and education with UNESCO field offices in the Caribbean, Nigeria as well as IIEP, IBE and HQ. Dr Schenker is a lecturer at the Hebrew University of Jerusalem, the Hadassah College and an invited speaker internationally. He has broad knowledge and expertise in public health, international health, health promotion, new technologies in education for HIV/AIDS prevention, health interventions in conflict areas and international health leadership. He was employed as a scientist staff member of The World Health Organization in its headquarters (Geneva, Switzerland), and a coordinator of a crosscutting HIV/AIDS Project for UNESCO in its Geneva Institute for Education. He has country experience and provided consultancies and training in Africa, Caribbean, Latin America, Asia and the Middle East.

Dr Inon Schenker holds a Ph.D. degree (Public Health and Science Education), a Masters of Public Health (MPH) degree and a B.A. degree in political science and sociology all from the Hebrew University of Jerusalem.