SENSITIZATION AND MOBILIZATION ON HIV/AIDS

HIV/AIDS and Associated Diseases
XVth Annual Conference and Workshop of the BSE
February 25–26, 2005
Addis Ababa

Sensitized Girls = Healthy Generation
Sensitization Workshops on HIV/AIDS and College Girls
November 06, 2004 and July 16, 2005
Addis Ababa

Organized by
The Biological Society of Ethiopia

In Collaboration with
UNFPA, Addis Ababa University,
Kotebe College of Teachers’ Education, Awoliya College,
Central Health College, Queens College, Unity University College

Edited by
Seyoum Mengistou
Ensermu Kelbessa
Mekuria Lakew
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Annex 1: About the EJBS
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ACKNOWLEDGEMENTS:

The Biological Society of Ethiopia (BSE) is very grateful to the United nations Population Fund (UNFPA), the Ethiopian Science and Technology Commission (ESTC), Addis Ababa University, the Ethiopian Agricultural Research Organization (EARO), Kotebe College of Teachers' Education, Awoliya College, Central Health College, Queens College and Unity University College for their financial, material and logistic assistance in organizing these Workshops.
PART - 1

HIV/AIDS AND ASSOCIATED DISEASES

XV\textsuperscript{th} Annual Conference and Workshop

The Biological Society of Ethiopia

February 25-26, 2005
Faculty of Science, Addis Ababa University
Addis Ababa
Sensitization and Mobilization on HIV/AIDS
Dear distinguished invited guests, participants and respected members of the Biological Society of Ethiopia:

It gives me a pleasure and honor to welcome you all to the 15th Annual Conference of the BSE. I believe that most of us know about the status of our country with respect to HIV/AIDS pandemic. Presumably, the majority of us in this assembly hall are aware of the biology, ways of transmission and prevention mechanisms of HIV/AIDS. I can dare say that someone close to us has been victimized by the disease.

We the BSE, EC members have strong conviction that girls at higher learning institutions need be a point of focus in the fight against AIDS; they are the models and educated mothers of future Ethiopia. Thus, we have developed a project proposal that focuses on college girls of the country. One of the main objectives of the project is to organize successive sensitizing workshops for these target groups under the main theme "Sensitized Girls = Healthy Generation". This is believed to be a contribution to the World AIDS Campaign 2004 that has a thematic focus on Women, Girls, HIV and AIDS. The UNFPA has solicited the fund for the planned workshops.

Todate, two successive Workshops have been organized in the Faculty of Science, on 17th July and 6th November 2004. Over 500 girls from AAU and Kotebe College of Teachers Education participated in the workshops. In line with our plan, the main theme of this Conference is "HIV/AIDS and Associated Diseases". The Conference will include plenary lectures, paper and poster presentations, Session on "Sensitized Girls = Healthy Generation", a special Business Session and a visit to an HIV/AIDS orphans center in Addis Ababa. The presentations will take place in parallel sessions, each focusing on different areas of biological sciences. The General Assembly will ratify the revised draft of the bylaws of the BSE during the special Business Session.

Finaly, the Executive Committee and the Secretariat Office of the BSE would like to thank UNFPA, the Dean's Office of the Faculty of Science, the Department of Biology, the resource persons and all those who are presenting papers.

Wishing all of you an enjoyable conference attendance and participation.

Thank you for listening.
Sensitization and Mobilization on HIV/AIDS Pictures
TUBERCULOSIS AND HIV COLLABORATION

Zerihun Tadesse (PhD)

BACKGROUND

The diseases of tuberculosis (TB) and HIV are inextricably linked. Tuberculosis is the leading cause of death amongst people with an HIV infection, and HIV, through the reduction of immunity, fuels the TB epidemic. Thus, HIV prevention and care must be a priority concern of TB Programmes and TB care and prevention should be a priority concern of national HIV/AIDS control programmes.

Objectives of TB/HIV collaboration:

- Reduce HIV incidence among TB patients;
- Reduce TB incidence among PLWHA; and
- Improve the care of people who are infected with both TB and HIV.

These objectives are achieved through strengthening of the existing TLCP strategy by provision of additional TB/HIV collaborative activities together with the HIV/AIDS Prevention and Control Programme.

The new strategy for TB control in high HIV prevalent populations includes additional interventions against tuberculosis: intensified case-finding, cure and TB preventive treatment. The strategies against HIV include:

- Condoms promotion and distribution
- Management of Sexually Transmitted Infections (STIs),
- Harm reduction of Injection Drug Users (IDU)
- Prevention of Mother to Child Transmission (PMTCT)
- Anti-Retroviral Treatment (ART).

TB/ HIV Co-Infection

Infection with HIV destroys the immune defence mechanism of the body and is therefore an important risk factor for the development of TB. In non-HIV infected persons, the risk of development from latent TB infection to disease is 5 to 10% during the entire lifetime of that person. For an HIV-infected person the risk of developing TB is higher than 50% for the remaining life time of that individual (5-15% for each year alive).

1 Ministry of Health, Addis Ababa, Ethiopia.
Mechanisms in the development of HIV-associated TB:

- Re-activation of latent TB infection (acquired prior to HIV infection);
- Rapid progression to disease, following recent TB infection; and
- Re-infection with another strain of M. tuberculosis.

HIV is the most powerful known risk factor for re-activation of latent tuberculosis infection to active disease. In general tuberculosis occurs in the early stages of HIV-infection, often before other opportunistic infections occur. The combination of proven HIV-infection and clinical tuberculosis defines the diagnosis of AIDS. As a result of the interaction between HIV and TB, the number of TB cases occurring in the population at large is increasing (5-10% per year) which consequently leads to an increase in the transmission of TB within the community. In Ethiopia, where 4.4% of the adult population is HIV-positive (MOH 2004), around 50% of TB patients in Addis Ababa are HIV-positive (in rural areas this is estimated to be 20-30%). This close association has also resulted in worsening of the stigma surrounding both diseases.

HIV increases the rate of recurrent TB, which may be due to either endogenous reactivation (relapse) or exogenous re-infection. In addition to this interaction, it appears that TB in an HIV-positive person accelerates the progression of HIV-infection by stimulation of HIV virus replication. HIV not only increases the number of TB cases, but also alters the clinical course of TB disease. As HIV-related immuno-suppression increases, the clinical pattern of TB disease changes, with increasing number of smear-negative pulmonary TB and extra-pulmonary TB cases. TB is more likely to be disseminated and more difficult to diagnose as immuno-suppression progresses.

Facts about TB/HIV:

- TB is the leading cause of HIV-related morbidity and mortality.
- HIV is the most important factor fuelling the TB epidemic in Africa up to 50% of HIV-infected people develop TB.
- In sub-Saharan Africa 40 to 80% of TB patients are HIV-positive.
GONOSIS OF TB IN PEOPLE LIVING WITH HIV/AIDS (PLWhA)

The clinical presentation of TB patients with HIV-infection mainly depends on the stage of HIV infection and can broadly be classified as early and late presentation. The smear-positivity rate among HIV-positive TB patients is the same as among HIV-negative TB patients, except in the advanced stages, when there is a tendency to develop smear-negative TB. In the early stages of HIV-infection the clinical presentation is almost indistinguishable from that in HIV-negative TB patients.

However, in the advanced stages, the presentation can be atypical and extrapulmonary forms like TB pleurisy, miliary TB and TB lymphadenitis occur with a relatively higher frequency. In any case, sputum smear examination remains the fundamental tool of investigation. If the sputum smear remains negative, a chest X-ray (CXR) is of additional value in the diagnosis. However, the appearance of the CXR may not be typical for TB. There are many other lung conditions in HIV-positive patients that are indistinguishable from TB on the CXR. At laboratory level difference between stages of HIV infection is determined by counting CD4 cells or total lymphocytes.

Especially in the advanced stage of HIV-infection TB tends to present as:
- disseminated with absence of cavitation;
- abnormalities in the lower rather than in the upper lobes; and
- enlargement of the hilus is another common feature.

The following table summarizes differences in presentation between early and late stages of HIV-infection:

<table>
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<tr>
<th>TB &amp; HIV</th>
<th>Stage of HIV-infection</th>
<th>Late stage / clinical AIDS</th>
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<tr>
<td>Clinical picture</td>
<td>Early stage</td>
<td>Late stage / clinical AIDS</td>
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<td>Cough &gt; 2 weeks</td>
<td>Productive sputum</td>
<td>Dry cough, not productive</td>
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| X-ray appearance | Upper lobe infiltrates, cavitation, nodular or patchy shadows | Lower lobe infiltrates, no cavitation often mediastinal lymphadenopathy and/or pleural effusion; Sometimes miliary or interstitial pneumonia |
|-------------------|-----------------------------------------------------------|

| Sputum smear | Often positive (> 80%) | Often negative (< 50%) |

In general the diagnostic process is the same as described in the chapter Tuberculosis, following the same flow charts for smear-positive and smear-negative TB. If there is suspicion of TB a patient has to be investigated for TB and if diagnosed to have TB an HIV test is recommended. Similarly it is strongly recommended that HIV positive clients at a VCT centre should be screened for symptoms and signs of active TB, as many of them may have early clinical tuberculosis.
MANAGEMENT OF TB AMONG PLWHA ISONIAZID PREVENTIVE THERAPY (IPT)

TB disease is one of the major opportunistic infections that cause death among PLWHAs. All newly-identified HIV-infected adults in HIV counseling and testing centers (VCT) are generally screened for symptoms (prolonged cough ≥ 2 weeks), followed by sputum smear microscopy and in some cases chest radiography. After ruling out active TB, PLWHAs are considered for IPT (for details see TB/HIV Implementation Guideline). Where HIV prevalence is high among cases with smear positive PTB, children of index cases may be at risk of both TB and HIV if the index case is a parent. It is important to ask whether HIV status of index case and child contact is known and if not, consider HIV testing. If the child contact is HIV-infected and otherwise well, then consider IPT for all ages including those 5 years and older. IPT must not be given to any child, who has active or possible TB (for details see TB/HIV Implementation Guideline).

Co-trimoxazole Preventive Therapy (CPT)

It is well-documented that administration of CPT decreases morbidity and mortality among HIV-infected TB patients. Co-trimoxazole has been considered standard of care for this category of patients and is generally given to HIV positive TB patients (for details see TB/HIV Implementation Guideline).

Treatment of TB in PLWHA

The treatment of TB in PLWHA is essentially the same as in HIV-negative patients. It is well tolerated and the outcome of treatment is equally successful, particularly in patients early in the course of HIV infection. In PLWHA, TB treatment must be commenced without any delay. Due to HIV-related complications, predominantly in the first months of TB treatment, there is a higher mortality and morbidity in HIV-positive TB treatment. These complications can be prevented to a large extent by prescribing Co-trimoxazole (2 tablets or one double strength tablet daily) to all HIV-positive TB patients irrespective of the stage of HIV infection, but also by encouraging earlier presentation to health services, using communication and social mobilization strategies.

TB Treatment and Anti-Retroviral Therapy (ART)

TB treatment and ART together gives rise to a number of potential problems, such as drug interactions, increased risk of adverse effects and increased frequency of “Immune Reconstitution Inflammatory Syndrome” (IRIS).
Options for ART in patients with TB

Possible options for ART in patients with TB include:

- Do not start ART until completion of TB treatment.
- Do not start ART until the completion of the initial phase of TB treatment and, then, use Ethambutol and Isoniazid in the continuation phase.
- Treat TB with a Rifampicin-containing regimen as indicated in national ART guideline.

TB AND HIV COLLABORATIVE ACTIVITIES

The following activities are recommended and have already begun in Ethiopia in a limited number of health facilities. Building on the experience from these HFs, it is envisaged that expansion will take place, in particular in the context of increased access to ART.

A) TB prevention and control for PLWHA
- Intensified TB case-finding
- Isoniazid preventive treatment for PLWHA with latent tuberculosis.

B) HIV/AIDS prevention, health promotion and treatment for TB patients
- Provision of widely available HIV testing and counselling and HIV prevention methods.
- Increasing access to services to diagnose and manage STIs and OIs.
- Cotrimoxazole preventive therapy at least during TB treatment.
- Referral for PLWHA to HIV/AIDS care during/after TB treatment, including provision of ART.

C) TB/HIV activities to strengthen health system
- Routine offering HIV testing to tuberculosis patients.
- Establishment of a national TB/HIV advisory committee.
- Joint TB/HIV capacity building, including training, communication and social mobilisation.
- Community involvement in collaborative TB/HIV activities.
- Operational research to enhance collaborative TB/HIV activities.
SURVEILLANCE OF HIV PREVALENCE AMONG TB PATIENTS

Knowing the proportion of HIV prevalence in TB patients assists and informs the TB and HIV/AIDS Programmes in planning and implementing activities to address both HIV/AIDS and TB. Routine offering of HIV testing with adequate information on the benefits for the TB patient knowing his/her HIV status (e.g. availability of CPT and possibility of ART) is more effective and will eventually reduce the stigma surrounding both diseases.

In places, where CPT is available and where ART becomes increasingly accessible it is strongly recommended to routinely offer an HIV test to every TB patient, after providing adequate information on the benefits of knowing his/her HIV status.

REFERENCES


PARASITES AND HIV

Amha Kebede

SUMMARY
Parasitic infections are prevalent in developing countries where the HIV/AIDS epidemic is becoming more and more a serious burden aggravating the already overstretched socio-economic problem. Nowadays opportunistic protozoan parasites, like cryptosporidium, microsporidium and Isospora, are highly associated with chronic diarrhea among HIV/AIDS patients. Even though there is conflicting evidence as to the exact role of helminthiasis on HIV/ADIS epidemics, their effects appear more indirect than being an opportunistic parasite. There is no direct evidence that soil transmitted helminths could be opportunistic. However, there are studies indicating a significant correlation between the number of eggs excreted and HIV plasma viral load where treatment of the worms decrease the viral load.

INTRODUCTION
HIV infection is highly prevalent in many developing countries, becoming a significant threat socially and economically. UNAIDS estimated that 40 million individuals globally were living with HIV/AIDS and that 20 million have died of AIDS-related diseases (UNAIDS, 2001). Like many other developing countries, the prevalence of HIV infection in Ethiopia has increased significantly in the last few years. In 2003 in Ethiopia, about 1.5 million people are thought to live with HIV/AIDS, making the overall prevalence 4.4%. Among many other infections, intestinal parasites cause a great deal of morbidity and mortality in human immunodeficiency virus (HIV)-positive individuals worldwide (Chaisson et al., 1998). In developing countries due to higher prevalence of infection in the general population, prevalence of parasitic infections is appreciably higher among AIDS patients. Particularly, infections with helminths and opportunistic protozoan parasites have been shown to be highly associated with AIDS patients.

HIV/AIDS patients commonly suffer from infections of the gastrointestinal tract. It has been estimated that 30-50% of patients with AIDS in the developed countries, and about 90% in developing countries, suffer from chronic diarrhea (Smith et al., 1992). In sub-Saharan African countries chronic diarrhea associated with significant weight loss (‘slim disease’) is often the presenting illness of HIV-1 infected individuals. This kind of syndrome in association with a positive HIV-1
serology test is an AIDS-defining illness (WHO, 1986; Dallabetta and Miotti, 1992).

According to the World Health Assembly (WHA) in 2001, two billion people were infected by soil-transmitted helminths and schistosomiasis, worldwide (Anonymous, 2001). This shows that helminthic infections affect more than a third of the world’s population. Soil-transmitted helminthic infections include *Ascaris lumbricoides*, the hookworms *Necator americanus* and *Ancylostoma duodenale*, *Trichuris trichiura*, and *Strongyloides stercoralis*. All these parasitic infections are substantially associated with conditions of poverty, overcrowding and lack of hygiene and sanitation. Humans and helminthic infections have evolved together for a very long time, whereas HIV/AIDS is relatively a new disease. The prevalence of both diseases is increased by poor socio economic status of a given community. Some studies have shown that HIV could take advantage of immunological and host-parasite relationships that have stabilised as a result of evolution (Viney, 2002). This review highlights the importance and impact of major opportunistic intestinal protozoans and helminthic parasites on the epidemiology and pathogenesis of HIV/AIDS worldwide and in Ethiopia.

PROTOZOAN PARASITES AND HIV/AIDS

The impact of emerging opportunistic protozoan parasites, such as *Cryptosporidium*, *Cyclospora*, *Microsporidia*, and *Isospora*, on patients with AIDS is severe. This has come to be the case since the early stage of the HIV/AIDS epidemic. Diagnosis of these parasites cannot be made clinically unless specific faecal examination is carried out. There is a wide variation in infection rate of intestinal parasites in patients with AIDS and chronic diarrhea ranging from 40% to 83%, and the parasitic agents differ markedly from region to region. Detection of intestinal protozoan parasites in HIV-related diarrhea is significantly higher compared to other intestinal parasites including helminths (Prassad *et al.*, 2000).

CRYPTOSPORIDIOSIS

Cryptosporidiosis is an AIDS-defining illness involved with chronic diarrhea and it is the most common cause of enteric disease in HIV/AIDS patients (WHO, 1986). *C. parvum* is specially common in patients with AIDS whose CD4+ counts are <200 cells/µl. Transmission occurs through fecally contaminated waters used for drinking. It is caused by a protozoan parasite infecting the gastrointestinal tract epithelial cells. Many species of *Cryptosporidium* exist that infect humans and a wide range of animals. Most of the time, patients present with profuse watery diarrhea, malabsorption and weight loss. Diagnosis is by demonstration of oocysts in stool (Ziehl-Nelsen or modified Kinyoun AFB stain). The organism can also be demonstrated on small bowel biopsy.

Worldwide, the prevalence of *Cryptosporidium* in AIDS patients is reported to be 10–20% (Mitra *et al.*, 2001). The most prevalent species causing disease in
humans is \( C. \) \textit{parvum}. Different studies from Ethiopia, on the other hand, indicate a much higher frequency of cryptosporidiosis ranging from 11% to 40% (Mengesha, 1994; Fisseha \textit{et al.}, 1998; Awole \textit{et al.}, 2003; Endeshaw \textit{et al.}, 2005). Even though \textit{Cryptosporidium} is one of the most commonly identifiable pathogen in patients with AIDS-related persistent diarrhea, there is no treatment for it (Sanchez-Mejorada and Ponce de Leon, 1994). Initial management should therefore include rehydration, either orally or intravenously.

**MICROSPORIDIOSIS**

Human microsporidiosis represents an important and rapidly emerging opportunistic disease, occurring mainly, but not exclusively, in severely immunocompromised patients with AIDS. Cases of microsporidiosis in immunocompromised persons not infected with HIV as well as in immunocompetent persons have also been reported. The clinical manifestations of microsporidiosis are very diverse, varying according to the causal species, with diarrhea being the most common. The prevalence of \textit{Microsporidia} among AIDS patients ranges from 3% to 50% (Dallaabbetta and Miotti, 1992). The most important species causing diarrhea are \textit{Enterocytozoon bieneusi} (90%) and \textit{Encephalitozoon intestinalis} (10%).

\textit{Microsporidium} has been identified in up to 30% of AIDS patients with pathogen negative diarrhea. \textit{Microsporidia} was the most common pathogen (27% of cases) in a study conducted in Thailand among HIV-infected patients with diarrhea, followed by \textit{Cryptosporidium} (9%) and \textit{Isospora} (4.5%) (Punpoowong \textit{et al.}, 1999). A marked geographical variation with contrasting prevalence rates is shown by many studies worldwide. This emphasizes the need for thorough investigation of these patients to identify pathogens for proper management.

In general in Africa, there is scanty information on microsporidiosis among HIV/AIDS patients due to lack of sensitive techniques and expertise. A recent study from Ethiopia indicates that intestinal microsporidiosis is a common cause of chronic diarrhea and severe weight loss in advanced AIDS patients (Endeshaw \textit{et al.}, 2005). In this study by PCR, out of 243 diarrhea stools, 39 (18.2%) were positive for intestinal microsporidial infection where \textit{Enterocytozoon bieneusi} constitute the large majority (76.9%) while \textit{Encephalitozoon intestinalis} make up 15.4% and three cases were double infection.

Light microscopic examination of the stained clinical smears, especially fecal samples, is the easiest and quickest method of diagnosing microsporidial infections even though it does not allow identification to species level. The most widely used staining technique is Chromotrope 2R method or its modifications. This technique stains the spore and the spore wall a bright pinkish red. The technique, however, is lengthy and time consuming and requires about 90 minutes. Molecular methods (mainly Polymerase Chain Reaction, PCR) are very promising techniques for the diagnosis of microsporidiosis. PCR is available only in research laboratories and
has been successfully used for the diagnosis of *Enterocytozoon bieneusi* and *Encephalitozoon intestinalis*. The treatment of choice is Albendazole for *E. intestinalis* while there is no treatment for *E. bieneusi*.

**Isospora belli**

This is a protozoan parasite with biology and clinical presentation similar to *Cryptosporidium*. *I. belli* infects the epithelial cells of the small intestine and is the least common of the intestinal opportunistic parasites that infect humans. Infection causes acute, nonbloody diarrhea with crampy abdominal pain, which can last for weeks and result in malabsorption and weight loss. In AIDS patients, the diarrhea can be severe. Diagnosis is made with modified Kinyoun AFB stain of stool, revealing characteristic oocysts. Trimethoxazole is the drug of choice.

In developed countries *Isospora* is infrequently associated with diarrhea due to AIDS (about 1.5%), but it was commonly isolated in patients with AIDS and persistent diarrhea in developing countries, such as Brazil (9.9%), Zaire (12%), Zambia (16%) and Haiti (12%) (Dallaabbetta and Miotti, 1992). In Ethiopia very few reports of Isosporiasis exist and the prevalence among HIV/AIDS patients ranges from 7.4% (Awole et al., 2003) to 22.5% (Endeshaw et al., 2005).

**Cyclospora**

This protozoan parasite has been relatively recently identified as a unicellular coccidian parasite. *Cyclospora caytanensis* appears to be responsible for all human cases. After an average incubation period of 1 week, symptomatic infections typically manifest as watery diarrhea, which can be severe among AIDS patients. Untreated infections typically last for 10-12 weeks and may follow a relapsing course. The most common clinical features caused by this parasite include watery diarrhea, fatigue, anorexia, weight loss, and upper intestinal pain. Infections, especially in disease-endemic settings can be asymptomatic.

The prevalence of *Cyclospora* appears to be rather high in Haiti (11%) compared to US and Tanzanian patients with AIDS and chronic diarrhea where it is reported quite rarely (<1%) (Dallaabbetta and Miotti, 1992). There is a paucity of information about cyclospora infection in AIDS patients in Ethiopia with only with a single report of 3.7% (Awole et al., 2003).

A common source of infection appears to be contaminated water. Currently, the most practical diagnostic method consists of identification of oocysts in stool specimens by light microscopy. The recommended treatment for cyclosporiasis is a combination of two antibiotics, Trimethoprim-sulfamethoxazole.

**AMEBIASIS**

Previous studies have suggested that the pathogenicity of *E. histolytica* may be enhanced by immunosuppression, as was seen in patients receiving corticosteroids. It is well known that HIV infection can result in the impairment of cell-mediated
immunity; thus, patients with HIV infection may be more likely to have a protracted course if infected by pathogenic amebas. A number of investigations, however, have shown that cases of invasive amebiasis are rarely or never reported in HIV-infected patients (Sturgess et al., 1992; Lucas, 1994; Fatkenheuer et al., 1997).

There is no clear explanation why invasive amebiasis is rare in HIV-infected patients despite their declining T-cell immunity, the major immunity against E. histolytica infection (Salata and Ravdin, 1986; Li and Stanley, 1996). The difference in geographic distribution of morphologically indistinguishable pathogenic (E. histolytica) and nonpathogenic (E. dispar) amebas may provide some clues (Sargeunt and Williams, 1978; Clark and Diamond, 1991; Gonzalez-Ruiz and Wright, 1998).

A study conducted in two cohort sites by the Ethio-Netherlands AIDS Research Project indicated that E. histolytica/E. dispar, with a prevalence of 25.4%, to be the only parasite with significant association with HIV infection (Fontanet et al., 2000). An extensive study, however, with more sensitive and specific tests such as PCR consistently show that E. histolytica is over diagnosed among HIV/AIDS patients while finding of high number of E. dispar was not unusual (Kebede et al., 2003).

IMPACT OF SOIL-TRANSMITTED HELMINTHIC INFECTION ON THE HIV/AIDS PANDEMIC

The pathogenesis of AIDS in Africa appears to be highly associated with chronic immune activation caused by endemic infections, particularly helminthic infections (Bentwich et al., 1995). There are strong evidences suggesting that immunological responses to various helminths may predispose to HIV/AIDS and tuberculosis. It is a well-established fact that individuals with helminthic infections can be chronically immune-activated and to have a very pronounced T helper type 2 (TH2) immune profiles (Borkow and Bentwich, 2000). Thus, higher HIV plasma viral load reported in sub-Saharan Africa could be associated with helminthic infections and also the more rapid spread and progression of AIDS in Africa.

Chronic activation of Th2 lymphocytes and their cytokines, as well as other participating cells in the immune response to adult helminths or larvae are suggested to provide conducive condition for infection by HIV and progression to AIDS (Bentwich et al., 1995). The efficacy of potential vaccines against HIV will be impaired by worm infections, which bring about continuous or frequent cross-regulation, or suppression, of cellular immunity with eventual anergy, or exhaustion.

The host’s immune response for helminthiasis in hyperendemic areas is usually maintained due to frequent exposure to infection and reinfection. Immunosuppression and anergy can result from continual immunological activation. Different studies have shown that the chronic immune response to
helminthiasis could be adversely influencing the epidemics of HIV/AIDS and TB (Borkow et al., 2000; Fincham et al., 2003). Prevention and de-worming of helminthic infections is strongly recommended to improve the situation. Even though antihelminthic treatment lowers HIV plasma viral load in general, a study conducted in Kenya showed HIV plasma viral load did not decrease significantly after treatment of schistosomiasis in people heavily and dually infected with HIV and S. mansoni (Lawn et al., 2000). A recent epidemiological study also in Uganda indicated that helminth infection was not associated with faster progression of HIV disease in coinfected adults (Brown et al., 2004), which is in sharp contrast with the previous observations by Bentwich et al. (1995). Thus, the epidemiological observation on the absence of a detrimental effect of helminths on HIV progression and the suggestion that the decrease in CD4+ cell count is greater after the treatment of some worms challenges the dogma that helminths, if found, should be treated in co-infected adults.

The idea that HIV infection spreads and progresses faster in developing countries is still controversial, mainly due to the paucity of well-controlled longitudinal studies. Nevertheless, there is compelling evidence that high plasma viral loads are associated with increased HIV transmission and faster progression. Although there may be other potential factors that could contribute to the increase in HIV plasma viral load, it may well be that helminthic infections in themselves, mainly through the immune activation that they cause are sufficient to be a major factor for the observed HIV plasma viral increase (Wolday et al., 2002). This observation is supported further by previous studies among HIV-negative and HIV-positive Ethiopian immigrants to Israel, where helminthic infections were associated with chronic immune activation that decreased after treatment of the helminths (Bentwich et al., 1996; Kalinkovich et al., 1998). These findings are in line with previous studies showing the mutual interactions between HIV infection and other concurrent infections such as tuberculosis, leishmaniasis, and probably malaria (Bentwich et al., 1999; Wolday et al., 1999; Berehe et al., 1999).

The case of S. stercoralis as an opportunistic parasite is not clear as this helminth can multiply prolifically in the human host by means of auto-infection (Fincham et al., 2003). Except one report of a significantly greater prevalence of strongyloidiasis in HIV-positive patients (Gomez Morals et al., 1995), others have found no evidence that S. stercoralis is an opportunist in HIV infection (Lindo et al., 1998; Karp and Neva, 1999). As the pathology linked to auto-infection by S. stercoralis could be very serious, especially in immunocompromised hosts, more research is clearly necessary to clarify this condition.

CONCLUSION

HIV/AIDS patients suffer from opportunistic parasites in the course of their infections. The most important opportunistic infections usually associated with chronic diarrhea are Cryptosporidium, Microsporidium, Isospora and Cyclospora. Accurate diagnosis of these parasites is important for proper management of AIDS.
patients. The role of helminths, on the other hand, is still debatable, but many studies indicate that they have an indirect role in disease progression by immune activation than being opportunistic parasites.

REFERENCES


OPPORTUNISTIC FUNGAL INFECTIONS IN HIV/AIDS PATIENTS IN ETHIOPIA

Yimtubezinash Woldeamanuel (PhD)¹

ABSTRACT

Fungi are of increasing clinical importance, mainly as the causative agents of opportunistic infections in the expanding population of immunocompromised patients. More yeasts and molds are now recognized to cause more superficial and systemic human infections than ever before. Under severe immunosuppression, most fungi are potentially pathogenic; therefore clinicians must start out with a high index of suspicion in making the diagnosis. Candidiasis is the most frequent mucosal opportunistic infection in HIV-positive patients, and ranks number one among all infections occurring in AIDS cases in Ethiopia. Candida species cause stomatitis, oropharyngitis or esophagitis. In Ethiopian patients, different studies have reported that out of all AIDS cases, 10-20% present with oropharyngeal candidiasis. Another common fungal infection is Cryptococcus which is the most common life-threatening fungal infection in patients infected with the human immunodeficiency virus (HIV). In Ethiopia the first case was reported in 1992 with subsequent increasing number of reports. In a more recent study, a 7% isolation rate of Cryptococcus neoformans from cerebrospinal fluid specimens was reported in Addis Ababa. Pneumocystis jirovecii, causing serious and even life threatening pneumonia, is a frequent pathogen found in HIV positive patients with long lasting respiratory complaints. It is rarely reported in Ethiopia and the few studies diagnosis was based only on clinical grounds. But in a recent prospective study designed originally to study Pulmonary Tuberculosis (PTB) and HIV interaction, examination with nested polymerase chain reaction (PCR) for P. jiroveci showed that 30.3% (36/119) of HIV positive patients negative for mycobacterium culture in sputum were positive for P. jiroveci. Diagnostic tests are not available for Pneumocystis pneumonia (PCP) in Ethiopia and many patients miss the opportunity for treatment and prevention. Since most of the diagnostic methods for serious fungal infections are not available in our setting, data on other opportunistic fungal infections such as aspergillosis, histoplasmosis and others are lacking and substantial work needs to be done to get the true picture of the spectrum of fungal infections in HIV/AIDS patients in Ethiopia.

Key words. HIV; Opportunistic fungal infections.

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INTRODUCTION

Fungi are of increasing clinical importance, mainly as the causative agents of opportunistic infections in the expanding population of immunocompromised patients. More yeasts and molds are now recognized to cause more superficial and systemic human infections than ever before. The fungi most frequently isolated from immunocompromised patients are saprophytic (i.e. from the environment) or endogenous (a commensal). Under severe immunosuppression, most fungi are potentially pathogenic; therefore clinicians must start out with a high index of suspicion in making the diagnosis.

Standard microbiologic and histological techniques remain important components of diagnosis.

OPPORTUNISTIC FUNGAL PATHOGENS

Candidiasis is the most frequent mucosal opportunistic infection in HIV-positive patients and *C. albicans* is the most common species isolated (1). It ranks number one among all infections occurring in AIDS cases in Ethiopia (2). Although *Candida* stomatitis, oropharyngitis or esophagitis rarely progress to become a life threatening disease, patients with Acquired Immuno-Deficiency Syndrome (AIDS) need long term antifungal treatment so that they can eat without pain and clinical nutritional deficiency can be delayed. The source of infection is usually endogenous since *Candida albicans* is part of the normal mycoflora, and between 30 to 50% of healthy people harbor *Candida* in the mouth (3). This has also been shown in Ethiopia with a 40% frequency of isolation (4). In Ethiopian patients, different studies have reported that out of all AIDS cases 10-20% present with oropharyngeal candidiasis (OPC) (2, 5). In a study done to characterize isolates from HIV/AIDS patients with oral thrush, 85% of the isolates were *C. albicans* serotype A with a 5% primary resistance to 5-fluorocytosine (4).

Another opportunistic fungal pathogen is *C. neoformans*, the cause of cryptococcosis, which is the most common life-threatening fungal infection in patients infected with the human immunodeficiency virus (HIV) (6). Clinically, it presents with meningitis or meningoencephalitis and is fatal if left untreated, however cryptococcal infection of many organs has been described. In Ethiopia the first case was reported in 1992 with subsequent increasing number of reports (7,8,9). In a more recent study a 7% isolation rate of *Cryptococcus neoformans* was detected in cerebrospinal fluid (CSF) (10). Out of 1088 CSF specimens sent to the bacteriology laboratory in Black Lion Hospital, Addis Ababa, 275 were with a request for India ink examination. Out of these 19 (7%) were India ink positive and subsequently culture positive, and all the isolates were identified as *C. neoformans* var. *neoformans*. In the same study, retrospective analysis of the medical records of the patients showed high mortality rate.

In the adult population in the developed world, the incidence of *Pneumocystis pneumonia* (PCP) has significantly decreased with the introduction of HAART, but
it remains among the most common AIDS-defining infections especially in
developing countries (11). *Pneumocystis jirovecii* the cause of PCP causes serious
and even life threatening pneumonia and is a frequent pathogen found in HIV
positive patients with long lasting respiratory complaints. It is rarely reported in
Ethiopia and the few studies reporting the disease were based only on clinical
grounds and not supported by laboratory diagnosis (5,12). In a prospective study
designed originally to study Pulmonary Tuberculosis (PTB) and HIV interaction, in
sputum analyzed on suspicion of PTB, examination with nested polymerase chain
reaction (PCR) for *P. jiroveci* showed that 30.3% (36/119) of HIV positive
patients, negative for mycobacterium culture in sputum, were actually positive for
*P.jiroveci* (13). Laboratory diagnostic tests are not available for *Pneumocystis
cystis pneumonia* (PCP) in Ethiopia and many patients miss the opportunity for treatment
and prevention. Based on the findings of the previous study, there is a need to set up a laboratory diagnostic test for PCP that is suitable for the Ethiopian setting.

**Other opportunistic fungal pathogens**

Many fungi can cause infections in the immunocompromised host. Since most of
the diagnostic methods for serious fungal infections are not available in our setup
data on other opportunistic fungal infections such as aspergillosis and histoplasmosis are lacking. The lack of reliable and rapid diagnostic procedures is a
major obstacle in the successful management of fungal diseases. Clinicians often
have to rely on nonspecific signs and symptoms to guide antifungal therapy before
laboratory findings become available. Substantial work needs to be done to get the
true picture of the spectrum of fungal infections in HIV/AIDS patients in Ethiopia.

**REFERENCES**

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17: 837-42.


Several studies have been conducted over the past 22 years to understand the pathogenesis of HIV disease from an immunological standpoint. HIV infection is characterized by dynamic and long-lasting interactions between the virus and the immune system. HIV-specific immunity of both humoral and cellular in nature is produced in HIV infection. These include neutralizing antibodies, potent HIV-specific CD8+ cytotoxic T cell responses and HIV-specific CD4+ T cells, which are observed in many individuals infected with HIV at various stages of the disease. Antibody response to HIV-1 appears within days to weeks after infection. HIV-1 infected individuals can produce antibodies to several parts of the virus. Most HIV-infected individuals also rapidly develop HIV-specific cytotoxic response after infection and this CTL response is maintained throughout the asymptomatic stage but often declines with disease progression and at present no satisfactory explanation exists for the decline in HIV-specific CTL response in late disease. The presence of such responses has minimal, if any, effect on disease progression. Although other mechanisms of viral escape are also suggested, the emergence of several variants of HIV-1 (quasispecies) in the course of HIV disease mainly due to an error prone reverse transcription during the virus replication process is indicated to affect CTL recognition. The variation is also manifested in different properties of the virus affecting transmission, cellular tropism and pathogenesis. Activation of all components of the immune system is also the major feature of HIV infection. The abnormal immune activation is shown to have a profound effect on the immune system function. Altogether, the decline in CD4 cells, which are essential for the maintenance of effective immunity, together with other abnormal immunological manifestations, leads to a deterioration of the immune system reflected by occurrences of opportunistic infections and malignancies. Although HIV pathogenesis is understood to some extent, so far there is no clear understanding on the correlates of immune protection and their potential role in vaccine development. This remains to be one of the greatest challenges in HIV/AIDS research.

Several aspects of the findings from researches on HIV/AIDS and the immune response will be discussed during the presentation.

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1 Ethiopian Health and Nutrition Research Institute, P.O. Box 1242, Addis Ababa.
HIV/AIDS AND ANTIRETROVIRAL THERAPY IN ETHIOPIA

Dawit Wolday (PhD)  

Effective anti-retroviral drugs are now available, which in various combinations are very effective. Antiretroviral therapy (ART) has transformed HIV/AIDS disease in affluent communities from a death sentence to an issue of chronic disease management. The merits of ART include reducing stigma, promoting behavioral change, potentially directly reducing sexual HIV transmission, prevention of mother-to-child transmission and enhancing voluntary counseling and HIV testing (VCT). The vast majority of people living with HIV/AIDS in developing countries have not shared in the dramatically improved prognosis for HIV/AIDS offered by ART. Recent international support and commitment to make HIV treatment available to more people has led to expanded access to antiretroviral drugs in many countries. A major drawback in the introduction of ART in general in Ethiopia has been the lack of policy on ART use. However, in 2002, the Ministry of Health (MOH) issued a policy on supply and provision of antiretroviral drugs in Ethiopia. This policy emphasizes the government’s key role, not only in ART supply, but also in the coordination and facilitation of international collaborations to develop an ART program that is feasible and clinically appropriate for Ethiopia. In February 2003, MOH prepared a guideline for use of antiretroviral drugs in Ethiopia that has been updated at the end of 2005. Since then, training on ART has been given to more than 800 health care workers, comprising of clinicians, nurses, counselors, laboratory technicians and pharmacists. A total of 40 public and private hospitals have started prescribing ART. Moreover, as an initial step towards a National ART programme, the Ministry of Health is taking steps to establish a series of Regional HIV Reference Laboratories to monitor ART treatment on a countrywide scale. With an estimated 2.2 million adults infected with HIV by 2003, the number of HIV-infected persons that require ART has been estimated to be about 250,000. In Ethiopia, National antiretroviral treatment (ART) programme was launched in July 2003. Currently, an estimated 10,000 people living with HIV/AIDS (PLWHA) are receiving ART in several parts of the country. However, after January 24, 2005 when the National ART implementation plan was launched, the number of PLWHA accessing ART will substantially increase. The magnitude of the HIV/AIDS epidemic in the major urban settings is somehow stabilizing or showing tendency towards reduction, but in rural settings it is increasing. Although much effort was put to overcome the problems encountered much still needs to be done to strengthen the past efforts, especially reducing the effects in the rural settings. It calls also for efforts of several other national, international and bilateral organizations working together.

1 Ethio-Netherlands AIDS Research Project, EHNRI, P.O. Box 1242, Addis Ababa, Ethiopia.
CLOSING REMARK ON THE CONFERENCE OF THE BIOLOGICAL SOCIETY OF ETHIOPIA

Zerihun Woldu (Prof.)

Ladies and Gentlemen,

When the organizing committee invited me to remark on this august conference of the Biological Society of Ethiopia two days ago, I did not hesitate for a minute to accept it since it breaks the old tradition of having a conference closed by dignitaries who are very engaged in very urgent task of decision making and who often do not have the time to attend the conference and get the chance to highlight on the outcomes of the conference. I therefore feel very honored to be given this task.

Let us reflect back on the last two days of this conference. I hope we will recall the many instances where something that someone else said, some idea that was offered helped us to see something in a different light, helped us to see a different perspective, helped us to discover something new. What a gift we have given to each other in these instances! What a joy to be part of a team where through sharing our thoughts and ideas we can open up new awareness, new landscapes for others? What a joy listening with our hearts and minds to what others say to introduce us to new vistas and new understandings? I would like to thank everyone who contributed to this. It has truly been inspiring to be here and listen to all the experiences and viewpoints that have been raised from so many individuals, organizations and institutions. In our daily lives we often take the perspective of seeing how things fit into our past experience of the world. After all, we tend to make sense of the world by drawing inferences and conclusions from what we observe and categorize, even compartmentalize ideas. Conferences help us see situations with new eyes and examine our world from many different and new perspectives.

The theme of the conference, Sustainable Livelihood was a very timely one. The Focus on HIV/AIDS was also the order of the day since the pandemic is claiming millions of lives at a rate of thousands a day and it is doing so in collaboration with many age old diseases which have not received similar attentions.

Knowledge on the devastating HIV/AIDS has surely expanded. We are really impressed by the amount of knowledge amassed and we are also glad that we have acquired the state of the art techniques and equipment. We understand that much work has been undertaken on the HIV/AIDS in Ethiopia and around the globe and

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1 Department of Biology, Faculty of Science, Addis Ababa University, P.O. Box 1176, Addis Ababa, Ethiopia.
the risks and impacts are most serious. We acknowledge the outputs of these untiring researchers who have brought the secrets of HIV into light.

When Institutions or individuals have conducted studies that address HIV and its interactions with other problems, they have tended to do it in isolation. But it is imperative that future work must extend beyond this in order to be better prepared for combative actions. The crucial next step -of using this knowledge to improve and scale up effective actions has yet to be taken. There are some important gaps pending to be addressed. It is now time to ask what is providing the fertile terrain both for the spread of the virus and for its damaging interactions with abject poverty and food and nutrition insecurity.

There is therefore an urgent need to bring researchers and practitioners together to review what we have learnt, and what this means for future policy and programming against the coexistence HIV/AIDS and poverty.

I would to lightly point that in order to come to grips with this new universe, and effectively fill these knowledge gaps, bridges need to be built between social scientists, epidemiologists, public health specialists, nutritionists and agricultural economists. Only in this way will the causes and consequences of HIV/AIDS be mapped, ultimately leading to more effective action. The prevalence of other old age diseases such malaria, which are claiming the lives of particularly the rural dwellers who are fully behind the agriculturally lead industrialization, at rate of comparably magnitude if not higher than HIV/AIDS also need similar attention. Environmental degradation and loss of biodiversity, which are in vicious circle with poverty and ultimately with food insecurity, also need attention. In short we need integrated and concerted actions to break the strong chains of poverty and pandemic, chronic, nutritional diseases, which are fettering us from attaining our long standing dreams of sustainable livelihoods.

I believe that the outcome of our work in the laboratories and in the fields have resonated well beyond their premises and have rang high-sounding bells. But there is one thing we are not able to do at this time -we are not able to underpin goals with concrete measures.

These concrete measures may include

1. Combating the HIV/AIDS-abject poverty nexus by 2010;
2. Working hard on the production of the long awaited vaccine and make it available by 2010; and
3. Obtain socio-cultural renovation.

As an individual I cannot formulate the vision and mission goals of the efforts against poverty and the related HIV/AIDS, but I have my dreams. Let me share with you my dream for the future!
1. I dream that the vaccine will be available soon to those who are infected by the virus as well as those who are in the risk group as a result of their livelihoods or their behavioral maladjustments can be salvaged. This is only half of the victory.

2. I dream that we all discover what we must do to pull in the same direction to combat poverty which is the root cause of HIV/AIDS and other diseases. That day Humanity will declare victory over this menace and all other menaces.

3. I dream that the expertise gained on HIV/AIDS, the strong army of personnel fighting HIV/AIDS will be deployed to some other activities and the research laboratories built will phase out to only surveillance centers like those in the smallpox research team.

4. I dream that the HIV/AIDS awareness clubs phase out to other cultural and nature clubs.

5. I dream that orphanages that are helping the heroic daughters and sons of HIV victims be converted into colleges and vocational schools.

Ladies and gentlemen, thank you all for being here,

Now I have to say the final word: -

By the power vested on me by the Organizing Committee, I declare this Conference officially closed. All other interactions after this are off the record.
# Conference Programme

**XVth Annual Conference of The Biological Society of Ethiopia**  
February 25-26, 2005  
Faculty of Science, Addis Ababa University

**Friday, 25 February 2005**

## Plenary Sessions I

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<td>Registration</td>
<td>BSE Secretariat</td>
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<tr>
<td>9:00-9:30 AM</td>
<td>Program overview, Welcoming address</td>
<td>V/President, BSE</td>
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<td></td>
<td>Keynote Address</td>
<td>President, BSE</td>
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<tr>
<td>9:30-10:00 AM</td>
<td>Tea/Coffee Break</td>
<td>Guest of Honor</td>
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<td>10:00-10:15 AM</td>
<td>Special Session (Hall B2/2): Bylaws of the BSE</td>
<td>V/President, BSE</td>
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<td>Chairperson: Prof. Shibru Tedla; Rapporteur: Ato Getachew Tadesse</td>
<td>Dr Tilahun T/Himanot</td>
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<tr>
<td>10:15 AM-12:15 PM</td>
<td>Discussion and ratification of the bylaws</td>
<td>Members of BSE</td>
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<td>12:15-12:30 PM</td>
<td>Summarization of the bylaws</td>
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<td>12:30-2:00 PM</td>
<td>Lunch Break</td>
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<tr>
<td>2:00-2:20 PM</td>
<td>HIV/AIDS and immunity</td>
<td>Dr Tsehaynesh Messele</td>
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<td>2:20-2:40 PM</td>
<td>TB/HIV: Current research challenges</td>
<td>Dr Abraham Assefa, Dr Zerihun Tadesse</td>
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<td>2:40-3:00 PM</td>
<td>Opportunistic fungal infections in HIV/AIDS patients</td>
<td>Dr Yimtubezinash W/Amanuel</td>
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<td>3:00-3:20 PM</td>
<td>Association of <em>E. histolytica/E. dispar</em> with CD4 count among HIV/AIDS patients with complaints of diarrhoea from three hospitals in Addis Ababa</td>
<td>Ato Amha Kebede</td>
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<tr>
<td>3:20-3:40 PM</td>
<td>HIV/AIDS and anti-retroviral therapy in Ethiopia</td>
<td>Dr Dawit Wolday</td>
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<td>3:40-4:00 PM</td>
<td>Tea/Coffee Break</td>
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<tr>
<td>4:00-5:00 PM</td>
<td>Discussion on HIV/AIDS and Associated Diseases</td>
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**Parallel Sessions**

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Chairpersons: Prof. Mogessie Ashenafi and Dr Dawit Abate | Presenter |
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<tr>
<td>9:00-9:15 AM</td>
<td>Identification of Human Immunodeficiency Virus Type 1 (HIV-1) subtype C Gag-Specific T-Lymphocyte Responses in HIV infected Ethiopians</td>
<td>Aster Tsegaye</td>
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<td>9:15-9:30 AM</td>
<td>An <em>in-vitro</em> nematocidal activity screening assay for herbal medicines using filiform larvae (L3)</td>
<td>Gessesse Assefa</td>
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<td>9:30-9:45 AM</td>
<td>Khat chewing habit as possible risk behavior for HIV infection: Case – control</td>
<td>Dawit Abebe</td>
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<tr>
<td>9:45-10:00 AM</td>
<td>The principal components of immunity to malaria</td>
<td>Desta Kassa</td>
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<td>10:00-10:15 AM</td>
<td><em>Helicobacter pylori</em> infection and lifestyle among dyspeptic patients attending Gondar University Hospital, Northwest Ethiopia</td>
<td>Feleke Moges</td>
</tr>
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<td>10:15-10:30 AM</td>
<td>The prevalence of intestinal helminthes among diarrhea patients</td>
<td>Gessesse Assefa</td>
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<td>10:30-10:45 AM</td>
<td>Tea/Coffee Break</td>
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| Time (local) | Parallel Session II (Hall B3/2): Fisheries/Aquatic Sciences/ Zoology  
Chairpersons: Dr Demeke Kifle / Dr Seyoum Mengistou | Presenter |
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<tr>
<td>9:00-9:15 AM</td>
<td>Riverine fishery survey on Shinfa and Gendawuha Rivers in Metema woreda, North Gondar Zone</td>
<td>Teferi Mekonen</td>
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<td>9:15-9:30 AM</td>
<td>Feeding ecology and reproductive features of the African catfish (<em>Clarias gariepinus</em>) in the northern part of Lake Tana</td>
<td>Belay Abdissa</td>
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<td>9:30-9:45 AM</td>
<td>Macrophyte communities and associated fish fauna and zooplankton in the southern part of Lake Tana, Ethiopia</td>
<td>Alemu Assefa</td>
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<tr>
<td>9:45-10:00 AM</td>
<td>Preliminary study of cestode and nematode parasites of fish on the northern part of Lake Tana</td>
<td>Seid Muhammed</td>
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<tr>
<td>10:00-10:15 AM</td>
<td>The study of fish fauna in the dams of Belessa woreda, North Gondar</td>
<td>Teferi Mekonen</td>
</tr>
<tr>
<td>10:15-10:30 AM</td>
<td>Activity patterns of Bohor reedbuck (<em>Redunca redunca</em>) in Gaysay-Adelay area of Bale Mountains National Park, Ethiopia</td>
<td>Bezawork Afework</td>
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<tr>
<td>10:30-10:45 AM</td>
<td>Discussion</td>
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<td>10:45-11:00 AM</td>
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### Parallel Sessions (continued)

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<tr>
<td>10:45-11:00 AM</td>
<td>Accelerated age-related T cell decline in healthy HIV-1 non infected Ethiopians</td>
<td>Aster Tsegaye</td>
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<tr>
<td>11:00-11:15 AM</td>
<td><em>Enterocytozoon bieneusi</em> and <em>Encephalitozoon intestinalis</em> in diarrhoeal patients infected with the Human Immunodeficiency Virus-1 in Addis Ababa, Ethiopia</td>
<td>Tekola Endeshaw</td>
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<tr>
<td>11:15-11:30 AM</td>
<td>Preliminary studies on immunopathogenesis of <em>Schistosoma mansoni</em> in Grivet monkeys (<em>Cercopithecus aethiops</em>) vaccinated with 20 Krad Irradiated <em>S. mansoni</em> cercariae</td>
<td>Workineh Torben</td>
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<tr>
<td>11:30-11:45 AM</td>
<td>Hygiene practices associated with intestinal parasitic infections in under five years old children</td>
<td>Gessesse Assefa</td>
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<tr>
<td>11:45 AM-12:00 PM</td>
<td>Antibiotic susceptibility of diarrhea causing bacteria, and the bacteriological quality of water used for drinking in selected woredas of Ethiopia</td>
<td>Aberra Geyid</td>
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<tr>
<td>12:00-12:15 PM</td>
<td>Efforts of traditional medicine practitioners in Kenya to improve the delivery of traditional medicine in the management and prevention of HIV/AIDS</td>
<td>Meshak Malo</td>
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<td>12:15-12:30 PM</td>
<td>Discussion</td>
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<tr>
<td>Time (local)</td>
<td>Parallel Session I (Hall B2/2): Botany</td>
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<tr>
<td>1:30-1:45 PM</td>
<td>Genetic variation in <em>Moringa stenoptela</em> germplasm of Ethiopia by using RAPD as genetic marker</td>
<td>Dereje Beyene</td>
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<tr>
<td>1:45-2:00 PM</td>
<td>Plant species diversity and environmental factors on vegetation along Kombolcha-Mille escarpment in Wello, Ethiopia</td>
<td>Getachew Tadesse</td>
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<tr>
<td>2:00-2:15 PM</td>
<td>Ethnobotanical study of wild edible plants in Derashe and Kucha districts, South Ethiopia</td>
<td>Kebu Balemie</td>
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<tr>
<td>2:15-2:30 PM</td>
<td>Discussion</td>
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</table>
### Parallel Sessions (continued)

<table>
<thead>
<tr>
<th>Time (local)</th>
<th>Parallel Session II (Hall B3/2): Agriculture/Ecology</th>
<th>Presenter</th>
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</thead>
<tbody>
<tr>
<td>11:00-11:15 AM</td>
<td>Trophic analysis of Lake Awassa using mass-balance Ecopath model</td>
<td>Tadesse Fetahi</td>
</tr>
<tr>
<td>11:15-11:30 AM</td>
<td>The role of coffee shade trees and exotic plant and rehabilitation of degraded hill slope, S/Ethiopia</td>
<td>Abiyot Berhanu</td>
</tr>
<tr>
<td>11:30-11:45 AM</td>
<td>Effects of maize and sorghum cropping systems on stem borers and their parasitoids in Ethiopia</td>
<td>Emana Getu</td>
</tr>
<tr>
<td>11:45 AM-12:00 PM</td>
<td>Integrated Weed Management (IWM) weed control option in maize (\text{Zea mays})</td>
<td>Girefe Sahile</td>
</tr>
<tr>
<td>12:00-12:15 PM</td>
<td>Maize/cowpea under variable densities, arrangements and fertilizer rates in semiarid areas of Ethiopia</td>
<td>Girma Abebe</td>
</tr>
<tr>
<td>12:15-12:30 PM</td>
<td>Diversity, regeneration status and socio-economic importance of the vegetation in islands of Lake Zeway</td>
<td>Haileab Zegeye</td>
</tr>
<tr>
<td>12:30-1:30 PM</td>
<td>Lunch Break</td>
<td>Melaku Negash</td>
</tr>
<tr>
<td>1:30-1:45 PM</td>
<td>Disposal age and culling in Holstein-Friesians</td>
<td>Tigist Wondimu</td>
</tr>
<tr>
<td>1:45-2:00 PM</td>
<td>The Role of wild edible plants in food security: A case study in Arsi lowlands, southeastern Ethiopia</td>
<td>Girefe Sahile</td>
</tr>
<tr>
<td>2:00-2:15 PM</td>
<td>Influence of N fertilization on reduction parasitism of (\text{Orobanche}) spp in Tomato</td>
<td>Takele Negewo</td>
</tr>
<tr>
<td>2:15-2:30 PM</td>
<td>Invasive alien plant species in Ethiopia: Introduction, problems and management strategy</td>
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<tr>
<td>2:30-3:00 PM</td>
<td>Discussion</td>
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### Plenary Sessions II

<table>
<thead>
<tr>
<th>Time (local)</th>
<th>HIV/AIDS and Women Session (Hall B2/2): “Sensitized Girls = Healthy Generation”</th>
<th>Presenter</th>
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</thead>
<tbody>
<tr>
<td>2:30-2:50 PM</td>
<td>Overview on “Sensitized Girls = Healthy Generation” workshops</td>
<td>President, BSE</td>
</tr>
<tr>
<td>2:50-3:30 PM</td>
<td>Discussion on “Sensitized Girls = Healthy Generation”</td>
<td>Prof Zerihun Woldu</td>
</tr>
<tr>
<td>3:30-3:40 PM</td>
<td>Closing remarks</td>
<td></td>
</tr>
<tr>
<td>3:45-5:00 PM</td>
<td>Visit to an HIV/AIDS orphans Center in Addis Ababa</td>
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<tr>
<td>6:00-8:00 PM</td>
<td>Dinner reception</td>
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PART - 2

SENSITIZED GIRLS = HEALTHY GENERATION

Sensitization and Mobilization Workshops on HIV/AIDS for College Girls in Addis Ababa

The Biological Society of Ethiopia

Phase – I: Addis Ababa University and Kotebe College of Teachers’ Education

November 06, 2004

Faculty of Science, Addis Ababa University

Phase – II: Awoliya College, Central Health College, Queens College and Unity University College

July 16, 2005

Awoliya College

Addis Ababa
The human Immunodeficiency virus (HIV) is an RNA virus first discovered in humans in 1983. It causes a damaging effect on the central immune system by selectively killing the T-lymphocytes, monocyte/macrophages, dendritic, langerhan and microglial cells to which it comes upon by binding to a 55kd surface glycoprotein, CD4-molecule and chemokine coreceptors CCR5 and CXCR4.

The structural and genetic composition of HIV consists of an envelope that carries two identical RNA strands. The envelope contains an external and transmembrane proteins termed Gp-120 and Gp-41, respectively. The inner part of the viral membrane is surrounded by p17 core protein. Inside the envelope is a cone shaped core composed of p24 capsid protein. The capsid besides RNA strands contains protease, integrase and polymerase enzymes.

The major characteristic of HIV is its extremely high genetic variability, which is a combined effect of the high recombination and error rate of the reverse transcriptase enzymes and the high replication rate of the virus in vivo. It is responsible for the accumulation of variants during infections.

There are two types of the virus: HIV-I and HIV-II. The HIV-I, first described by Barre-Sinoussi et al., (1983), is responsible for the global epidemic while the later described by Clavel et al., (1985), is limited in prevalence (1-15%) and distribution to West African countries. There are three genetically distinct groups of HIV-I: groups M (majority), O (outlier), and N (non-M/O). M-is responsible for the global HIV-I epidemic. Group-O is represented by a few strains and is localized to Cameroon, Gabon and Equatorial Guinea; Group-N is represented by a few strains in Cameroon. The M-group comprises of at least ten genetic sub types or clades designated A through J, which differ from each other by 30% in the env coding sequences and by 14% in their gag coding sequences.

Although there is no country free of the virus, infection is growing most rapidly in the developing countries of South East Asia, Indian subcontinent and sub-Saharan Africa. Each day about 14,000 new infections are believed to occur around the world. Of these, more than 95% are in developing countries. Roughly 14% are children under 15 years of age and the rest are persons of 15-49 years of age. Women constitute 50% of the adult group and 50% of them are between 15-24 years old. sub-Saharan Africa is the hardest hit the epidemic. The prevalence grew from less than 1% in 1984 to 36% in 1999, which is more than 70% of all HIV cases.

1 Ethiopian Nutrition Research and Health Institute (ENRHI), P.O. Box 1242, Addis Ababa, Ethiopia.
In Ethiopia, the HIV/AIDS epidemic started relatively late. The first positive sera was discovered in 1984 and the first AIDS case in 1986. However, it grew to infect 74% of commercial sex workers, 14-20% urban pregnant women and 7% of blood donors by the year 2001. Analysis of results of studies in Addis Ababa in 1994 showed a significantly higher prevalence rate among females of age groups 25-39 than males.

Similar study on sex workers, showed a prevalence range of 63.8-85.3%. Again the highest infection rate was in age groups 25-29. Those prostitutes born outside Addis Ababa were relatively more (80.7%) affected than those from Addis Ababa. Condom utility was in general poor.

Studies on police recruits from Addis Ababa revealed that females start sex earlier than males but by the age of 24-25 the percentage of infection in both sexes equates to 9.4%. Another study conducted on military recruits from all over Ethiopia and thus was considered to represent the prevalence of the country, showed much higher prevalence of the disease among the urban (7.2%) than rural dwellers.

Comparison by administrative regions showed similar picture between urban and rural recruits in all regions. The distinction between them was in the following order: Amhara (10.5%), Addis Ababa (7.9%), Oromia (6.5%), Tigray (5.3%) and Southern Nation and Nationalities (4.3%). A projection made in 2003 National HIV prevalence expects a slight decrease in 13 to 12.6% urban areas but an increase from 1.9% to 3.4% in rural areas.

Considering the fact that over 85% of the people live in rural Ethiopia, the picture suggests extensive spread of the pandemic in the country.

The impacts of AIDS are many and touch literary all sects of the society.

Different studies have shown that it depends on the physical, mental and the stage of infection. For approximately 50% of infected persons, the time between viral exposure infected and the appearance of opportunistic infections that characterize AIDS is more than 10 years. It is also much dependent on the time one discovered
that he/she is infected, the psychological support available and the access to good medical care. Taking into account the number of days lost in illness, sick leaves, visit and costs of clinical/hospitals services, the negative economic impacts of HIV on firms is projected to be 8.3% while productivity is expected to fall by up to 50%.

HIV is transmitted primarily through sexual intercourse, but also by direct transfusion of infected blood and from an infected woman to her fetus or infant before, during or shortly after birth. The risk of becoming infected through unprotected sexual intercourse depends on four main factors:

- the likelihood that the sexual partner is infected,
- the types of sex act that bring sexual secretions into direct contact with mucous membrane lining the rectum, vagina, urethra and mouth,
- the amount of virus present in blood, semen, vaginal or cervical, and
- the presence of other sexually transmitted diseases or genital lesions in either partner.

In order to prevent HIV infection the following factors influencing the risk of infection should be carefully thought about:

- the type of partner one chooses should not be a person who has an unknown sexual history to the partner,
- the number of sex partners,
- the sexual behavior one practices—all forms of penetrative sexual intercourse carry a risk, although the risk minimizes when a condom is used,
- the presence of other sexually transmitted diseases is known to increase the risk of acquiring and transmitting HIV, and
- if one is not sure about these factors, it is important that one goes for voluntary testing.

**SUMMARY AND CONCLUSION**

Although there are many claims, curative therapy is not yet possible. The preventive measures based on voluntary counseling and testing have resulted in promising results. The follow up data on sexual behavior and reported sexually transmitted diseases among anti-natal clinic attending women and others in Addis Ababa and Ethiopia have shown a tendency to decline in almost all age groups following the above strategy.

However, the most desired strategy of developing vaccine has become a challenge to modern science. The scientific challenges include the variability in the virus,
lack of immune correlates of protection and limitation of animal models. The logistic challenges are the fact that the study is done in advanced laboratories that want to do clinical trials on humans in developing countries. This has arisen in many cases an ethical issue. Last but not least is the financial challenge. Those that have the money are less interested to invest on third world problems with little future markets. Those that suffer most from the disease cannot afford to spare enough money to develop the science around their problems.
THE YOUTH AND ANTI-AIDS MOVEMENTS IN ADDIS ABABA UNIVERSITY

Mehari Getaneh

INTRODUCTION

Youth are among the highly HIV-infected people in the world. According to United Nations programme on HIV/AIDS (UNAIDS) 2004 report, they account for nearly half of the new HIV infections worldwide. In Ethiopia, the highest prevalence (12.1%) is in the age groups between 15-24 years, followed by adults (6.6%) (AIDS in Ethiopia, 2002). The factors are many and complex. For example, despite better access to education, HIV/AIDS information and reproductive health services, HIV is almost always more prevalent in urban than rural areas. To understand the role of each factor and sum up its effects on a community, requires a cautious interpretation.

In females the situation is much worse than in males. The reasons, among others, are lack of information and knowledge, biological factors, gender and cultural norms. Globally, an estimated 7.3 million young women are living with HIV/AIDS much higher compared to 4.5 million young men (UNFPA, 2003). In Sub-Saharan Africa two-thirds of newly infected youth, aged 15-19, are females.

Looking to the high-risk age range and evidences from case studies, African universities are labeled as one of the high-risk institutions in terms of HIV. "Sugar-daddy" practices, sexual experimentation, prostitution on campus, unprotected casual sex, gender violence, having multiple partners, and similar high-risk activities are all practiced in all, to a greater or lesser degree. The life style and culture in universities in the context of HIV/AIDS today affirms more risk than safety. Addis Ababa University students are not much different from universities in other African countries. The other source of problem is the fact that most students are brought up in a traditional families that hardly understand, appreciate and give due recognition to the questions of youth in matters related to sex. Thus, lack of proper information, knowledge and skill, on how to protect themselves from HIV/AIDS is a common problem. Addis Ababa University students come from communities of this background. Most of the girls are teenagers and have limited knowledge about their reproductive health in general and HIV risk in particular, and therefore, are easily influenced by peers to enter into unprotected sexual practices.

In recognition of the above problems, the Addis Ababa University has signed an agreement for collaboration with African AIDS Initiative International with the aim

1 African AIDS Initiative International Addis Ababa, Ethiopia.
of curbing the spread of HIV/AIDS and mitigating its impact. Based on the agreement, African AIDS Initiative International (AAII) has moved its office to the main campus of the university and has started to coordinate and initiate the involvement of all communities of the university (faculties, administration, student unions, student anti-AIDS movements, other academic staff, etc.). Currently, mainstreaming HIV/AIDS in the curricula of the university, establishing and strengthening anti-AIDS clubs, provision of care and support services, sensitization and education, establishing networks as well as providing voluntary counseling and testing (VCT) services are set as the major tasks to be accomplished in the near future.

Despite a number of AIDS education projects, there is still widespread ignorance about the transmission, treatment and prevention of HIV among the student populations. The required level of behavioral change is not yet achieved. Thus, more effort is required to coordinate and bring all members to participate in prevention efforts. To this end, peers trained and organized in all convenient options are recommendable. This presentation intended to give highlights on importance and experiences of anti-AIDS movements and girls’ clubs of Addis Ababa University and document the achievements so far and what remains to be done in order to break this pandemic and come out victorious.

**AAU STUDENTS AND THE HIV/AIDS RISK**

Addis Ababa University (AAU) is the first higher institution in Ethiopia. It consists of a college, seven faculties, five schools and four research institutes. The University resides a total of about 14,000 regular students (of which 15% are females) and 10,500 evening students (of which 27.4% are females). Compared to other universities in the country it is believed to be at more risk. To start with, it is located in the capital city where prevalence is the highest and more important in the center of the city surrounded by nightclubs, bars and hotels that are tempting to students. Added to these is the fact that it is composed of young people with diverse cultural, socio-economic and experience on sex and sexuality. These could partly explain the high risk of exposure of the students to HIV infection.

Preventing the university students from HIV infection and enabling them to be academically successful, besides availing care and support services for those infected, demands a continuous effort in educating the community. Creating opportunities where they can meet and discuss with their peers on HIV/AIDS, reproductive health and other related issue requires making educational materials accessible, creating opportunities in which they develop their life skills and share their experience with their peers, other professionals and the international community. To accomplish these, students need to organize themselves at different levels. This is a fact that justifies the organization of girls as an entity and as part of the anti-AIDS clubs and students’ movement in AAU.
ANTI-AIDS CLUBS (AACS) AND ANTI-AIDS MOVEMENTS (AAMS)

Importance

It has time and again been shown that a university is a place where the future manpower is bred. Abandoning this population would mean a huge loss to the country. It is realization of these facts that an endeavour has been made to establish as many new AACS/AAMS as possible and strengthen and upgrade them to union or association level. At all levels the organizations are expected to deal with those who have the risk or are already victims of HIV/AIDS infection, sexually transmitted diseases (STDs), unwanted pregnancy and other social and health problems. In this effort, establishing and strengthening anti-AIDS clubs and movements for girls is a priority.

Structure

AAU-AAMs are organized in 10 faculties under the student guidance and counseling office with no clear working documents and structural relationship between the movements and the office. The office is supposed to play a supportive role and leadership. Every Anti-AIDS Movement has its own structure as a separate entity. Very recently, the movements of AAU have formed a coordinating and facilitating body from the AAMs. The union has now started a horizontal relationship with clubs and movements of other national universities. By virtue of its relative location and experience, the Addis Ababa University Union is privileged to play an active role in bringing together the activities of clubs and movements in the other universities.

Activities

The clubs at AAU are actively involved in many programs. Some of the activities they have accomplished could be listed as:

- Organize and conduct welcome programs and orientation to fresh students;
- Disseminate information on HIV/AIDS, reproductive health (RH) and related issues;
- Arrange and facilitate social services and support to the students in and outside campuses, other community of the society like teaching AIDS orphans, assist stick PLWHAS, participate in tree planting, etc.;
- Organize trainings and workshops on peer education;
- Participate in training programs and workshops on peer education and club management;
- Organize panel discussions on HIV/AIDS issues;
Sensitized Girls = Healthy Generation

Mehari Getaneh

- Invite prominent figures in life and professional experiences to motivate people for better achievements in life;
- Organize and conduct gender and dormitory based coffee ceremony programs/discussions;
- Arrange provision of counseling services and support to students living with the virus;
- Organize different educational and entertainment program for students and discuss the HIV/AIDS problem;
- Create conducive environment for behavioral change; and
- Undertake some community mobilization on HIV/AIDS out of the university compound.

RECOMMENDATIONS

Since AACs/AAMs are not traditional institutions, capacity building in the area of club management and HIV/AIDS including other reproductive health issues/facilitation of training programs should be their areas of focus. Even though clubs/movements have many problems, they have tried their best and could come up to organizing themselves to a union level. The movements in the different campuses have formed one coordinating body at the university level named ‘Anti-AIDS Movements Union of Addis Ababa University.’ This union is composed of anti-AIDS movement of main campus, Science Faculty, Faculty of Business and Economics (FBE), Yared School, School of Fine Arts, Paulos School of Nursing and Midwife, School of Techno-farm, Faculty of Veterinary Medicine, School of Medical Laboratory Faculty of Technology (both North and South Campuses). The union is expected to be in charge of coordinating the anti-AIDS movements and to accomplish their respective objectives at the university level.

In its first assignment of universities’ meeting held recently, this union has got the chance to coordinate and facilitate the clubs/movements of the eight national universities (Mekele, Bahir Dar, Gondar, Alemaya, Arbaminch, Jimma, Addis Ababa and South Universities). However, to realize its objective, the following need to be fulfilled:

- Securing work places/offices to AAMs/AACS and furnishing and equipping them with the necessary supplies for their activities;
- Upgrading and revising management guidelines of clubs/movements with special focuses on peer training manuals;
- Establishing permanent offices a full-time staff at least at the union level;
- Organizing trainings and workshops for core facilitators, peer educators, club leaders, counselors;
- Designing and implementing different life skill training and other programs to clubs/movement; and their members;
- Assisting in creating vacation/part time job opportunities for their members;
- Assist students to experience the possible challenges they are likely to meet after graduation beforehand;
- Establishing parallel movements among the academic and administrative staff to integrate with and incorporate in the overall HIV/AIDS prevention and control efforts of the university; and
- Organize and strengthen work place peer education for the staff members.

Students' clubs and movement have to be strengthened and supported financially, technically and managerially to accomplish their duties and responsibilities for appropriate, participatory and sustainable HIV/AIDS intervention programs. More specifically, the establishment of anti-AIDS clubs of girls will be among the priority areas for addressing the problem more strongly and strategically. Because such clubs will enable to approach the problem using their school age and gender peers as well as to overcome the social and cultural bottlenecks of bringing the required behavioral changes. This will also enable to equip students with adequate knowledge and skill both in club management and reproductive health, including HIV/AIDS.

Service (VCT/RH) centers that can provide care and support service to PLHWA; free or subsidized referral services for those who seek care and support services; IEC/BCC materials on HIV/AIDS and RH; male and female condoms; female counselor for girls students and contraceptives should be made available at every convenient places/centers. Gender based resources and training centers including computer network and internet services are needed for both sexes to easily share RH and HIV/AIDS information and education.

Establishing girls' club is necessary for peer education and to disseminate RH and HIV/AIDS information among the girl students. The club members can also be used to distribute condoms and contraceptives to their peers when there is need. Trained girls will also serve as informal counselors of their peers. These clubs by working closely with their corresponding male peers or with Anti-AIDS clubs of respective campuses can easily and friendly channel information, brochures, leaflets and other materials (including male and female condoms and contraceptives) to students. Opportunity to develop their life skills and knowledge on RH, HIV/AIDS, or other relevant areas will be more fertile and easy.
Baseline study on the knowledge, attitude and practice of students on HIV/AIDS and RH and to identify specific needs and available resource/potentials are necessary for the communities of the university and others. Periodic KAP study to assess what results have been achieved so far and to assess the contributions of all efforts is also recommendable. Regular meetings including organizing panel discussions on every development of RH/HIV efforts are very important to timely identify the strengths and weaknesses as well as to recommend better ways for the challenges ahead.

REFERENCES


MOH and HAPCO, HIV/AIDS Policies and Strategies in Ethiopia. Deferent unpublished works of AAII and UNFPA.


HIV/AIDS has become the biggest threat to humanity and development over the last decades. Ethiopia is one of the countries that are most affected by the epidemic. It has a national adult prevalence of 4.4%, of which 12.6% is in urban and 2.6% is in rural areas. The most affected population is the youth between the ages of 15-29 years. The Addis Ababa University at present has a total of about 14000 students of which 2880 are girls. All fall within the high-risk age range of 18-25 years. The girls at the campuses, as is the case in the society, are more susceptible and vulnerable to attack of HIV/AIDS. The reasons among others are lack of adequate information on sexuality, negotiation power on friendship and sexual relationship and shortage of HIV/AIDS related services and facilities around them. Although these precarious campus situations call for a great deal of effort, the only one in place to date is that of anti-AIDS club, and its role on sensitization against HIV/AIDS has been trifle.

It is, therefore, the aim of this presentation, to look into the types of services and facilities available at the university right now and make a recommendation on measures required for successful prevention and control of HIV spread, but more among university campus girls.

EXISTING STATUS

In this paper, 'services and facilities' are understood to mean any information education and communication (IE) on HIV/AIDS activities that could protect HIV/AIDS. These include: condom promotion, guidance and counseling, sex education, voluntary counseling and testing (VCT), care, support and treatment for sexually transmitted diseases and opportunistic infections in general and retroviruses in particular. The present status of these services and facilities in all the seven university campuses is more or less the same. They all do not have anything especially meant for girls, like girls club, sex education, female condom, etc. There are anti AIDS clubs that deal with problems of boys and girls alike. The guiding and counseling services at each campus still follow the traditional counseling role on sexually transmitted diseases. They hardly consider the newly emerging social issues such as gender, HIV/AIDS, anti-retroviral treatment (ART)

\[1\] Students Clinic AAU, Ethiopia.
and associated opportunistic infections. Sex education is a critical gap in the whole education system but it is more felt at higher education institutes.

Although not directly focused on girls and of a level that brings the control of diseases, fair attempts have been made to deliver IEC materials through Anti-AIDS clubs, Non Governmental Organizations and the University clinics. VCT service is newly initiated in partnership with Africa AIDS Initiative as of the 2004/05 academic year. Male condom has been readily accessible, whereas no female condom is as yet available for the girls. Treatment to sexually transmitted diseases is provided, however it was only started at the wake of HIV/AIDS. Tuberculosis (TB) service is provided whether it is due to HIV/AIDS or not. However, there is no Anti-Retro Viral treatment to students who declare their sero positive status.

CONCLUSION AND RECOMMENDATION

In general the service and facilities in all the university campuses are at their infantile stages. There are however initiatives that express their growing concern on HIV/AIDS and the need for prevention and control. Looking upon the susceptibility and vulnerability of girls in the campus, it can be said that there is a serious need of establishing facility and services especially meant for girls. Hence, the questions that should be posed today are “What should be done? How to go about it?” To this end, the writer makes the following recommendations:

- Initiate and support girls’ clubs at different levels within the campuses and then network all campus girls’ mobilizations;
- Provide sex education for the youth. In particular, girl students in campuses have to be initiated as soon as possible;
- Provide guidance and counseling services to meet the special needs of girl students;
- Expand HIV/AIDS prevention, care and support programs including VCT and make them available at all campuses;
- Establish linkage and partnership with government and non-government organizations to access support on prevention, care, treatment, and
- Advocate for university leadership commitment to take the recommendations forwarded.
HIV/AIDS AND GENDER PROBLEMS OF FEMALE STUDENTS IN ADDIS ABABA UNIVERSITY

Addishiwot Girma

Most of us who had an opportunity to enter primary school and were able to make it to high school always dreamt of joining the universities. Unfortunately, this dream comes to be a reality only for a few. What is even more sad is that, it is only a very small percentage of these lucky students that are females.

The university is a new environment for new coming students where many come across experiences they never had encountered before. These include being away from a caring family that directly or indirectly had a great role in their daily activities which leaves them with a big responsibility of taking care of themselves and making decision for themselves. It is also obvious that the way one is brought up has a marked impact on her/his present life style. How to lead a problem-free life is contingent on how we perceive our new environment and the way we react to it. Many students are inexperienced. They face lots of problems but only a few have the courage to confront let alone being able to solve their worries by themselves.

The problems stated above are also problems of boys but for many more reasons the problems get harder on female students. Of the many obstacles that hinder female students from achieving their goals, some are mentioned below:

- Cultural norms of our society have their own influence on every one of us. Specially at times when we have to say “NO” about something we do not believe in. Female students being brought up under strict instruction of the society have a problem of refusing activities they are not willing to do. The following few statements can witness this:

- Even if they have no intention or plan for it, some girl students accompany guys, who are over with their required daily activity for coffee or tea.

- Some female students are unable to come up with a right away refusal for sexual requests; they would rather give excuses that can only last for the time being. This fills the boys with hope that one day she will accept, hence, they keep on nagging.

- Many female students undermine themselves and those of the same sex but give high credit to their boy classmates. Therefore, they directly or indirectly lean on boys for any help especially those of academic matters. This creates an opportunity for the bad boys to accomplish their missions.

1 Student at the Faculty of Science, AAU, PO Box 1176, Addis Ababa.
Peer-pressure from the so-called “civilized” classmates has a great impact on female students. This mostly affects those girls from the countryside or from hard pressing families.

For some female students, having the eyes of the opposite sex on them and being appreciated for their body have a tremendous value. Giving up their dignity, they do whatever it takes them to be what is not of any meaning to their lives. Once these kinds of girls have acceptance by the boys, they attract and invite other female students to go out with the boys. According to the “civilized girls” a girl who has never experienced sex is very much backward. Anybody who wants to be a friend to these people is expected to be “civilized” in their context.

All in all, what have been mentioned above can be generalized as lack of assertiveness. Assertiveness is neither being aggressive nor being passive. Rather it is knowing one’s rights and obligations and living by them. Most females lack assertiveness. It may be because of the way they are brought up in the society. But as the saying “every cloud has silver lining”, this assertive behavior can be revived through training and discussion with follow-ups.

Some of the university compounds are situated in areas that facilitate the high prevalence of the HIV/AIDS pandemic. Science Faculty, where many prostitutes are settled in its vicinity is a good example. These areas are visited by some boy students for reasons like relief of tension and the like. Boys who have the tendency to go to these places are most likely those who bother female students for sexual intercourse, and the consequence here is obvious.

Forcible attacks that females in tertiary level education face have multi directions. Physical attack like rape is not only by male students, but also any one of the male members of the university community. Some evidences that can support this are:

- a rape report at science faculty in Semester II of the year 1994 E.C by an unknown person;
- a rape attempt in the same faculty in one of the chemistry laboratory by one of the faculty guards in the year 1996 E.C.

Unavailability of counseling service in each compound is another problem that somehow enhances the prevalence of the pandemic. The only counseling and guidance service the University provides is located at the main campus and this is not convenient for students, who race against time.

In general a lot can be said about problems female students at tertiary level of education face. This paper is only a modest attempt to bring the highlights of the problem to the attention of the participants. The writer hopes a lot more can be dug out of today’s participants.
HIV/AIDS is a large and growing health problem of developing countries. Around the world, 42 million people, 95% of which are in developing countries, are currently infected with the virus. Sub-Saharan Africa with 29.2 million infected people bears the brunt of the epidemics. Each day another 14,000 people including 5,000 women and 2,200 children become infected. Women and young people are vulnerable to HIV/AIDS. Young people between ages 15-24 account for half of all new infections. According to UNICEF estimate, nearly 700,000 infants are born with HIV from infected pregnant mothers. Other sexually transmitted infections besides their role in HIV spread are major problems in their own right. An estimated 20 million of Ethiopia’s 71 million are 15-29 years of age, and therefore, highly vulnerable population. In view of these challenges Ethiopian youth faces today, this presentation attempts to introduce the concept of reproductive health and its contribution to the understanding and prevention of HIV spread.

Reproductive health is a relatively new field that has evolved in developing countries partly following the high incidence of HIV infection and untimed/unwanted pregnancies. It has now grown to include sexual initiation, sexual exercise, contraceptive use, family planning, birth experience, fertility, sexually transmitted infections and other associated adolescent problems. Over the last decade, it has increasingly attracted and focused public health researches to adolescents’ sexual life and successfully generated a vast knowledge in the area. However, all had their limitations. One of the limitations with the researches and programs so far made is that they tend to homogenize the adolescent population into one genderless mass with little regard to age and social context. It is clear that adolescent boys and girls experience rapid, intense and gender based changes; however the changes and needs experienced by 12 years old girls are considerably different from that of 18 years old boys, not to mention the differing nature of their relationships with their families, cultures and societies. Yet, a few studies acknowledge these differences. Most programs implicitly assume that young people have complete autonomy and control over what happens to them and that socio-cultural realities do not factor in. This has a great implication in design and contenting of programs that are appropriately targeted to young people. So far, programs have centered on small set of intervention model like youth centers, peer education and youth friendly services without due attention to the in-built assumption surrounding these models. For example, peer education is a very popular program model that bases itself on the assumption that all young people

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1 Ministry of Health, Addis Ababa, Ethiopia.
have peers but studies show that many of the people, especially girls, have no friends which means that they cannot be reached by peer education. Youth centers assume that young people have the time to visit a center that they feel safe enough to travel there and feel comfortable in a mixed sex environment that is often dominated by older boys. In fact all the three conditions are not met for the majority of girls, especially in poor and/or traditional setting. It is only a limited number of individuals that could benefit from both types of setups. Many of the popular program models were designed in western setting and based on the lives of young people in those settings. Surprisingly little program development has taken place on indigenous system or on local understanding of adolescents. It is only a few programs that have benefited from a period of formative research, exploration and experimentation. The data generated from the few health researches in the country are presented here to serve as a ground for discussion and show the essence of reproductive health explaining disease incidence and control. Ethiopia is said to have a population of 20 million people between 15-29 years.

The mean marriage age, 15.6, lies within this range. In urban centers the average age for first sexual intercourse is 16.1 and 16.8 for males and females, respectively. The situation in rural areas is even worse. The most extreme form of child marriage is practiced. Existing data in Amhara region show that 28% of those married had their marriage before the age of 10, 33% between 13-15 and 12 % after 15 years of age. This means that 51% of girls in adolescence marry below the age of 13 before they see their first menstruation. One study that considered 87% of the married women showed that, 71% were married before their first menses while 16% at the year they started menstruating. The vast majority of these women did not know they were about to be married and did not want to be engaged. Even those that married after the age of 15 did not know about the impending marriage and less than half wanted to marry or consented to it.

A study on adolescent life meant to plan the future development programs based on the real life conditions of the young in low income and slum areas of Addis Ababa, demonstrated that young males and females are fairly knowledgeable on many concepts of reproductive health and HIV/AIDS. The vast majority knew that there is no cure for HIV, a healthy looking person can have AIDS and high HIV prevalence is not confined to the cities and that it is neither confined to economically active migrant youth from rural areas and can be found anywhere conditions are favorable. Their worries were that they have limited access to education, means of earning their livelihoods and safety. Yet, few programs acknowledge these links between social and economic factors and the outcomes of RH, especially for girls. New population in countries like Ethiopia with extremely high HIV prevalence, poverty, traditional norms that encourage practices such as early marriage, rape and abduction, the likelihood to fall in any one of the situations is high. That is a considerable number of girls are likely to be coerced into sex against their will; or forced to marry at a young age, without their sexual initiation which is an act of rape. When one is rendered helpless with no other
means to support self, one will no doubt be tempted to do anything. Many girls in the poorest areas of Addis Ababa under such conditions are left with no other option other than to sell sex for money.

Any form of marriage engagement, promise or betroth, all disrupts the girls' education, primarily because they are done at early ages when students are supposed to be in schools. Fourteen percent are married before they are 10 years, 53% before 15 and 80% before 18 years of age. The percentage of girls who have not been to schools is much higher in married (83%) compared to unmarried ones (35%). The main reason for non-attendance of school among the married women is the marriage (59%), followed by parents' failure to support their education (25%). In contrast, the later accounts for 54% of the unmarried girls. All married girls would have liked to go to school had it not been that they were married. They realize that education gives access for a better life.

Studies on adolescent sexual activities, contrary to the above have shown another reality, a finding consistent with other similar studies. Ninety-nine percent of sexually active adolescent girls were married and all but 2% had their first sex with their husband and fiancé. Among boys only 22% had sexual experience and only 86% had the first sex within marriage suggesting that even within rural population marriage could drive the timing of first sex. Looking to the preceding information, it is clear that there is a need to give focus to the young people in matters of health and economic support. When young peoples' right to development are met, they are less likely to have their health undermined by problems such as HIV/AIDS, drug and alcohol abuse and violence. Reproductive health as an approach underscores that the care has to start right from conception and continue up to the later ages. International convention on child rights also document among others the rights of children for information and opportunities to develop life skills, health, and other services and it has been incorporated in the Ethiopian constitution. However, the health of youth and adolescents in general and sexual reproductive health in particular have not been adequately addressed. As a result, there are only 26 freestanding youth friendly services in the country created under the aspects of Family Guidance Association. The few youth centers are hardly usable by girls. There are no youth friendly in public or in private health facilities throughout the country. It is therefore, high time special attention is given to reproductive health needs of the adolescent and pilot programs are initiated all over the country.
Sensitization and Mobilization on HIV/AIDS

Pictures
EDUCATED GIRLS: ARE THEY REALLY SENSITIZED?

Mitiku W/Giorgis

In many of the countries that experience high HIV/AIDS prevalence, young people between ages 10-24 are the hardest hit. Looking at the world demographic profile, this group accounts for half the world population. About 1.2 million (20%) are between 10-15 years while the rest 80% are between 15-25 years. Most of the people in the age range of 10-25 (87%) live in the developing world. Africa alone harbours 60 millions of them. In Ethiopia the youth below the age of 24 accounts for more than 60% of the population. When categorized by age 51.2 million (32%) are within 10-24 year and 14 millions (20%) within 15-24 years. The university students belong to the latter age group. About 85% of the AAU students are 17-24 years old (KAPS, 1999 and 2002). As studies done in AAU and Bahir Dar universities show, 89.5-97% are single.

The present HIV/AIDS situation in Ethiopia is alarming. There are a total of 2.2 million people infected with the virus. Children/infants account for 9.09% (200,000) of the children between 0-14 years while the adults account for 86.4% (1.9 million) of those between the ages 15-19 years. The rest 4.5% make other ages. Transmission of HIV in the country in general is in heterosexual community. Although the number of adult males and females (15-49 years) in the population is proportional 800,000 (42.12%): 1.1 million (57.9%), the number of women/girls infected with the virus is three times more than that of the boys (UNAIDS, 2002; Camel et al, 2000). In children, over 90% of the transmission is from infected mothers to children during or shortly after birth. This mode of transmission is responsible for 5-10% children infection in Africa and 8.8% in Ethiopia.

According to the latest figure, the prevalence of HIV/AIDS in Ethiopian youth is 6-9% among men aged 15-24 and 10-13% among women. These age groups have the highest prevalence of sexually transmitted infections, indicating the practice of high rate of unprotected sex, probably with multiple partners. Although education is claimed often as strongly predictive of better knowledge, safer behavior and reduced infection, a UNAIDS analysis of studies in seventeen African and four Latin American countries have shown an increase of some kind of risk behavior with education in age groups 15-19 years. Reports on reproductive health of the country indicate that the age for the first sexual act among Ethiopian women ranges between 13 to 25 years and a median age of 18.8 years. 10-14% of the unmarried women experience unwanted pregnancies. A study done by the Ethiopian Society of Obstetrics and Gynecology (ESOG) (2002) showed that 58% of the 1075 abortions done in the year 2001 were because of unwanted pregnancies. When

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analyzed by educational background, 14.6% were high school students; 27.5% had secondary education and 3.6 had university / college education.

The epidemiology of HIV/AIDS in many countries of the world is more or less the same. Young people aged 15-24 account for 60% of new infections worldwide. Almost two third of the newly infected young people are girls. A study made in Ethiopia in 2001 showed that of the 11.8 million youth infected with the virus million 7.3 million were young girls/women. The same year the number of people infected with the virus in Ethiopia were 2.2 but the infection rate was more skewed towards the women especially in the age group 15-39 years (Fig. 1). When only those at AIDS stage were considered, the picture was a little different in terms of male to female ratio. Of the 219,000 AIDS patients, the females were more in the younger ages 15-25 years while the males were significantly higher in ages above 25 years.

![Estimated Number of HIV Infected Persons by Age and Sex, 2001](image)

**Fig. 1 AIDS in Ethiopia, 2002**

A few studies made on the behaviors and risks of HIV infection among the youth (Hailu et al. 1999, Amsalu Shiferaw, 2003 unpublished) in AAU and Bahir Dar universities respectively, showed that students in both universities have more or less similar risk reception, sexual activity and condom utility behaviors (Tables 1,2). The results however were very much changed in a follow up study made to evaluate the effects of advocacy programs.

The risk perception increased from 23.5 to 59.1% and 68.75% for male and females, respectively. The change on the sexual activity was insignificant. It only dropped from 25.35% to 24.29%. The use of condom was markedly improved. It was raised from 16.4% and the non-users dropped from 47.7 to 10.8%.

**Table 1 Reproductive Health Baseline Data on Bahir Dar students.**

<table>
<thead>
<tr>
<th></th>
<th>Male (%)</th>
<th>Female (%)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk perception</td>
<td>-</td>
<td>12.8</td>
<td>-</td>
</tr>
<tr>
<td>Sexual activity</td>
<td>52.8</td>
<td>15.8</td>
<td>36.4</td>
</tr>
<tr>
<td>Condom utility</td>
<td>-</td>
<td>-</td>
<td>52.4</td>
</tr>
<tr>
<td>Year engaged for life time partner</td>
<td>2.5</td>
<td>1.9</td>
<td>52.4</td>
</tr>
</tbody>
</table>
Table 2 Reproductive Health Baseline Data on AAU students (17-24 years).

<table>
<thead>
<tr>
<th></th>
<th>Male (%)</th>
<th>Female (%)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk perception</td>
<td>32.7</td>
<td>14.2</td>
<td>23.5</td>
</tr>
<tr>
<td>Sexual activity</td>
<td>-</td>
<td>23.46</td>
<td>25.4</td>
</tr>
<tr>
<td>Condom utility</td>
<td>-</td>
<td>-</td>
<td>16.4</td>
</tr>
</tbody>
</table>

A follow up study made one year after an advocacy program showed a much-improved situation (Table 3).

Table 3 Behavioral changes before and after advocacy program

<table>
<thead>
<tr>
<th></th>
<th>Before the program</th>
<th>After the program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk perception</td>
<td>23.5%</td>
<td>59.1%</td>
</tr>
<tr>
<td>Sexual activity</td>
<td>25.35%</td>
<td>24.28%</td>
</tr>
<tr>
<td>Condom utility</td>
<td>16.4%</td>
<td>41.4%</td>
</tr>
</tbody>
</table>
Sensitization and Mobilization on HIV/AIDS

Pictures
GENERAL DISCUSSION – PHASE I

Chairperson: Prof. Afework Bekele; Rapporteur: Teferi Mekonen

COMMENTS

1. It is said that there is no University girls’ club in the main campus. But we have established a girls club and it will be functional by next week. One of our club’s objectives is to play a role in the prevention of HIV/AIDS; at this moment we would like to have collaboration with different organizations/associations or even with the clinic staff members. Please unite your effort with our club.

2. We girl students in the Faculty of Science had learnt about college girls club from our friends in Alemaya University. We have discussed what their club is doing and the role it plays. Then we started talking to girl students by moving from dormitory to dormitory and in doing so we recently established a girls club.

3. The main objective of the club is to help and assist those needy girl students, and to solve their social, economical and related problems. What we mostly do is organizing special gatherings to share experiences and openly discuss our problems. We organize fashion show, dancing and other activities to motivate the participation of girls. Currently we are awaiting an award of a legal certificate from the Ministry of Federal Justice and Laws.

4. During the discussion, we have been informed that there were several students who have been targets for rape attempts (the case of campus guard and Chemistry laboratory technicians can be cited as examples). The matter calls for the University Officers to reinforce laws to mitigate such problems.

5. In the cost-sharing strategy, cost for health coverage has been neglected and we believe the University should reconsider it. We need good health care facility in our campus.

6. Such a workshop is very helpful at this moment in raising awareness among girl students. We would like to express my heart-felt appreciation to the BSE. What we used to do after the previous other workshops is that we tore and threw away all the papers and leaflets. Can the BSE make the future workshops more impressive by using other means like
fashion show, dancing and other entertaining which would be more educative?

7. We all are delighted with the efforts of the BSE to organize this workshop. We heard about all those sciences and social findings from different media and workshops. It is good if this type of workshop is organized in a dialogue type by which everyone of us would converse about our problems.

8. It is also important to invite other girls who can tell us their experiences on how they faced problems or how they solved their daily problems.

9. In the main campus there are elderly women with whom we can talk freely. Counseling should also be designed as a peer group discussion.

10. Girls are not the sole cause of HIV/AIDS epidemics as it is reflected in various meetings. We girls are not responsible for the spread of HIV/AIDS; we better not accept such views rather we should collaborate with our male partners to make our preventive roles more meaningful.

11. There are fund problems for the purchase of equipment for the clinic. There is no STI treatment and evening counseling. Can BSE find sponsors to alleviate these problems?

12. The Faculty of Veterinary Medicine is located in Debre Zeit (45 Km away from AA). We, girl students, are very few in the campus and can’t form a club as what most of you from faculties in Addis Ababa are talking about. We really lack information. Today it is a great achievement for us to be able to participate in such a workshop and the opportunity it provided us with more information about HIV/AIDS.

13. It is nice of BSE to organize this workshop and we are grateful to the society. Though this workshop is the first one in its kind, it is good if male students are considered to be sensitized about HIV/AIDS and other impacts on female counterparts.

14. We don’t need to be restricted with girls club only; it should be holistic to include male students and make them aware of any harsh problems caused by them. Let’s get together and make our male students be considerative and caring for us.

15. This workshop was organized to sensitize female students. But the chairperson is a male and can’t we have a female chairperson for the next workshop? It is also better if more time is allocated for discussion and if possible inviting HIV-infected women to share their experiences.
It is only through discussion that we can communicate and understand problems easily.

**QUESTIONS RAISED AND RESPECTIVE RESPONSES**

- **Question**: When every issue about girls club is raised, only AAU is being referred to this workshop. How about the efforts made and experiences in other colleges and institutes?

  **Response**: The AAU girls club was made public mainly in this workshop, only because most of us are based in AAU. However, students from KTEC told us that girls club has been established in their campus and it shows a very promising sign for the betterment of female students. The establishment and organization of more girls clubs should be strengthened.

- **Question**: So far I have never seen any effort to treat STI and even the budget allocated for the clinic is very limited. What is the main reason why the university cannot consider an appropriate budget for health coverage of the university students?

  **Response**: The reason for lack of STI treatment in the clinic is that every college/university student is considered to take care of herself/himself from such infections. If any one is found to be infected by STI, then she/he must get treatment in other clinic on their expenses. Regarding the low budget allocation, those staff members in the clinic have several times claimed for better consideration. What recently happened in the clinic is that certain number of staffs have been transferred to other places. Not only the budget constraint but also there is less number of staff. This issue should be presented to the higher officials of the university.

- **Question**: It is good that girls club at the University or college levels has been established, but we have never heard of its activity. When can this initiation be materialized?

  **Response**: The recently established female students association will be legitimised in the near future. However, those established girls' clubs have tried to play roles in the problem alleviation and paving a way for the success of female students.

- **Question**: Could you tell us about the differences and similarities between the two types of HIV (HIV-I and HIV-II)? Which one is more epidemic?

  **Response**: The differences between the two types of HIV (HIV-I and HIV-II) are their genetic makeup, transmission rate, area of distribution and virulence. HIV-I is highly transmissible and virulent
one. It is well distributed all over the world and hence more epidemic. HIV-1 has more subtypes / clades, whereas HIV-II has no subtypes. HIV-I is highly mutated and is found to be difficult to manage.

- **Question:** Since we students from AA are not provided with dormitory by the university, we are forced to move every morning and evening from our home to university and *vice versa*. During early morning and late afternoon journey, we face real harassment. Can’t the university make any strategy to alleviate such problems?

  - **Response:** Two/three years ago those students who were not provided with dormitory facilities were paid ETB 60.00 per month for transportation. But recently such provision has been interrupted and it is better if it is again reconsidered.

- **Question:** There are many established girls clubs in different campuses. How can we get information about each girls’ club? Why can’t the university arrange for information exchange in the network form?

  - **Response:** Information exchange will be easy and possible by means of networking only when those girls club and the capacity of the university are strengthened. In the mean time, it is possible to gather in such a workshop and share experiences.

- **Question:** It is said that the HIV prevalence in Amhara region is relatively higher than the other regions. What is the main reason for the higher prevalence of the HIV-infection in that region?

  - **Response:** The study was conducted in 1999-2000. Blood samples were collected from army recruits (from rural and urban areas). The sample size was Seventy Two thousand. After analysis the higher prevalence of HIV-infection was found from those who are from Amhara Region. It is a matter of calculating the prevalence and it was higher in Amhara region as compared to Tigray and SPNNR.
PREVENTION AND CONTROL OF HIV/AIDS IN COLLEGE CAMPUSES

Mahbuba Awol (S/r)¹

The aim of the presentation is to bring about desired behavioral changes in order to control and prevent the spread of the infection by the virus. Let me begin by explaining the meaning of the terms “HIV/AIDS” which are abbreviations of the following terms:

- HIV: - Human Immunodeficiency Virus
- AIDS: - Acquired Immunodeficiency Disease Syndrome

There are two types of Human Immunodeficiency Viruses:

- HIV-I is a type of virus characterized by 6-8 years of incubation period and its world wide distribution
- HIV-II virus is characterized as less virulent type. It has an incubation period of more than 20 years. Its distribution is limited to a few foci.

Both are transmitted mainly in two ways:

1. From mother to child (new born) during pregnancy and/or after birth and
2. Through sexual intercourse

One of the strategies that need to be done in order to control or prevent HIV/AIDS is creating awareness among the people. This is done primarily by giving the people full access to information about the ‘virus’ so that they understand the ways of preventing the disease. The awareness can be done at different levels using different strategies. One is by organizing sensitization programs like this and addressing the issue to a large group. At clinical level it is done through:

- Individual Face to face counseling and
- Group discussions/counseling, which are good opportunities for risk assessment.

Assessing the risk regarding HIV/AIDS encourages the students to identify the mode of transmission and thereby the ways of prevention. In beautiful occasions like today we have to focus on the methods of prevention and clarifications of misconceptions about HIV/AIDS transmission. The delivery of information in order to bring a change in the individual has to be done in stepwise following the sequences shown below:

¹ Awoliya College Hospital, Addis Ababa.
a. Information: is a level where the most basic ideas and facts are simply addressed.

b. Knowledge: at this level we are interested that the students retain the information as knowledge

c. Attitudinal changes: at this level students understand the information and start looking means of prevention

d. Behavioral changes: at these level the students attain actual change of behavior and start taking one of the measures to avoid the risk of HIV infection:
   i. Abstinence before marriage
   ii. Not having sex outside a single trusted sexual partner

At this stage some of the student unfortunately could have already been infected by the virus. We need to take these students one step further and give them detail information on how they can get the counseling service and how they should lead their lives for better survival after they are infected by the virus. That is by:
   i. Avoiding further infection with the virus by making sure both partners maintain a faithful relation and use condom correctly in sexual contact
   ii. Getting regular exercise and avoid smoking and alcohols
   iii. Getting counseling to help high level of emotional stresses such as persistent anxiety or depression.

At each campus we have what is called Voluntary Counseling and Treatment (VCT) centers meant for counseling of patients and create awareness among the university students. These VCT centers aim to:
   a. Provide learning atmosphere about HIV/AIDS
   b. Bring about the desired behavioral changes
   c. Control and prevent the spread of infection
   d. Increase awareness and motivate students towards the prevention approach
   e. Avoid commercial sex specially in higher learning institution
   f. Facilitate easy discussion of the facts about HIV/AIDS
   g. Care and support of infected persons
   h. Take prevention measure.
"Reproductive Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity in all matters relating to the reproductive system to its function and process" WHO.

1 Family Guidance Association Ethiopia, Addis Ababa.
Sensitized Girls = Healthy Generation

Molla Zeleke

Safe

Accessible

Effective

Affordable

Acceptable

P1994

1.5M

14

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59

20

99

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2. ን.getRow ንን ክርን እንተ የወንድ ይሰጣል። ፈንን እንደ የወንድ ይሰጣል። ለገን ያለ የሳይ የወንድ ይሰጣል። ለገን ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣል። ያለ የሳይ የወንድ ይሰጣሉ.
Sensitized Girls = Healthy Generation

Molla Zeleke

- P15 qadey wondi yala amayt HKam
- P15 qadey PFM Nada wondi yala
- P15 qadey PF PFM kala
- P15 qadey PFM Xaay 11qayqay xagay bafal amayt
- Molla Zeleke 11qayqay fay wondi yala amayt HKam
- H15 qadey 15° Haa Kakr 15° PFM tala\
- H15 qadey 15° Haa Kakr 15° PFM tala
- H15 15° Kakr 15° Faya PFM tala
- H15 15° Kakr 15° PFM tala

Adolescents : 10-19 Years
Youth : 15-24 Years
Young People : 10-24 Years

Adolescents
Youth
Young People

Molla Zeleke

Adolescents
Youth
Young People
Proceedings of Workshops on HIV/AIDS and College Girls in Addis Ababa (BSE, 2004/05)

4. Մանր սահմանափակ գրանցված կատարող կարգեր չեն կատարող ուրախ պահում լուծում գրանցված կատարող սահմանի ժամանակ սահմանափակ գրանցված կատարող համար տարածման համար տարածման սահմանի ժամանակ սահմանափակ գրանցված կատարող համար տարածման սահմանի ժամանակ սահմանափակ գրանցված կատարող համար տարածման ժամանակ սահմանի ժամա

4.1 Պորտ, որ որ հետև մանր սահմանափակ գրանցված կատարող համար տարածման համար տարածման սահմանի ժամանակ սահմանափակ գրանցված կատարող համար տարածման սահմանի ժամա

4.2 նոր նոր մանրացուցակ ներկայացվել առկա սահմանափակ գրանցված կատարող համար տարածման սահմանի ժամա

5. Մանր սահմանափակ գրանցված կատարող կարգեր չեն կատարող ուրախ պահում լուծում գրանցված կատարող համար տարածման համար տարածման սահմանի ժամա

5.1 Պորտ որ հետև մանր սահմանափակ գրանցված կատարող համար տարածման համար տարածման սահմանի ժամա

5.2 նոր նոր մանրացուցակ ներկայացվել առկա սահմանափակ գրանցված կատարող համար տարածման սահմանի ժամ
Sensitized Girls = Healthy Generation

Molla Zeleke

6. **What are the available services for women after abortion?**

- **General Information**: "Post Abortion Care" (Operational Barriers)
- **Key Points**: Women can access various services post-abortion, including:
  - Family Planning Services: "Post Abortion Care" (Operational Barriers)
  - Key Points: Post-abortion care includes:
    - Providing information on family planning options
    - Ensuring women have access to birth control methods
    - Offering referrals to counseling services
    - Supporting women in making informed decisions about healthcare

7. **What are the operational barriers to implementing these services?**

- **Key Points**: Operational barriers to implementing post-abortion care include:
  - Lack of resources
  - Staff training needs
  - Access to necessary equipment and supplies
  - Privacy concerns
  - Cultural and social stigma

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Avoiding Overcrowding
10.4 የወሳኘት እና እንወት እንደሚቻል ያቀረበ መንገጋ ያስገኝ

10.5 የወሳኘት በናት መስፋት /Publicity of the available services/

11. የወሳኘት እናወ የሚወስና መወስና ይመጡት እና የተለያየ የወሳኘት ከወስና ሇም እርካት ያለው እንወስና

11.1 መወስና

11.2 የመወስና ላይ የተለያየ ይህ እርካት እና የለቅ ያስገኝ መወስና እንወስና የወሳኘት እና የተለያየ ያስገኝ መወስና

12. የወሳኘት እና የወሳኘት የማስና የወሳኘት እና የተለያየ ያስገኝ መወስና

• የውን ላይ የወሳኘት ከወስና የሚቻል ይህ ውስጥ የወሳኘት ከወስና ሇወሳኘት እና የተለያየ ያስገኝ መወስና

• የነወስና የወሳኘት የወሳኘት ላይ የወሳኘት እና የተለያየ ያስገኝ መወስና

ለይስ

11.2 የመወስና ላይ የተለያየ ይህ እርካት እና የለቅ ያስገኝ መወስና እንወስና የወሳኘት እና የተለያየ ያስገኝ መወስና

• የውን ላይ የወሳኘት ከወስና የሚቻል ይህ ውስጥ የወሳኘት ከወስና ሇወሳኘት እና የተለያየ ያስገኝ መወስና

• የነወስና የወሳኘት የወሳኘት ላይ የወሳኘት እና የተለያየ ያስገኝ መወስና

12. የወሳኘት እናወ የሚወስና መወስና ይመጡት እና የተለያየ ያስገኝ መወስና

• የውን ላይ የወሳኘት ከወስና የሚቻል ይህ ውስጥ የወሳኘት ከወስና ሇወሳኘት እና የተለያየ ያስገኝ መወስና

• የነወስና የወሳኘት የወሳኘት ላይ የወሳኘት እና የተለያየ ያስገኝ መወስና

ለይስ

13. የወሳኘት እናወ የሚወስና መወስና ይመጡት እና የተለያየ ያስገኝ መወስና

• የውን ላይ የወሳኘት ከወስና የሚቻል ይህ ውስጥ የወሳኘት ከወስና ሇወሳኘት እና የተለያየ ያስገኝ መወስና

• የነወስና የወሳኘት የወሳኘት ላይ የወሳኘት እና የተለያየ ያስገኝ መወስና

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/ Multipurpose youth center / ይግባኝነት እና የለቅ ያስገኝ መወስና እና የወሳኘት እና የተለያየ ያስገኝ መወስና ይመጡት እና የተለያየ ያስገኝ መወስና

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rh. /Services in multipurpose youth center/

- Mini Media
- Film show, soccer (DSTV)
- Drama clubs
- PFL, Assertiveness, life skill
- Skills required for communication, negotiation etc...

12. "Youth Friendly"

- Proceedings of Workshops on HIV/AIDS and College Girls in Addis Ababa (BSE, 2004/05)
/References/

2. Improving Reproductive Health in Developing Countries, October 1995.
The introductory part about HIV/AIDS has already been addressed. Hence, I will go straight to the “Girls on campus” issue.

- Girls on campus, especially in Unity University College, tend to be conservative, but as a matter of fact they need therapists, counselors, psychologists and sexologists if there could be one available around.

- The other issue on campus girls is the government’s concern on HIV/AIDS. The government seems be very lax because when it comes to some works like announcements, they do it, but not carefully. For example 10th grade students when they come to the university are reluctant to have sex with anybody they want because they are very young and are scared of being exposed to different diseases including viral ones.

- When it comes to other universities or colleges, there are some promising activities on line. But HIV/AIDS prevalence in high schools seems to be higher. The reason for this can be our cultural taboo that youngsters are shy as no one talks about sex, when and at what age to do it, how to take care of themselves, etc. Especially girls are supposed to go to school and when they return back they will sleep. That is all. This makes it difficult to decrease HIV/AIDS prevalence in colleges, campuses or schools.

The other point that seems encouraging is when teachers come to class; they encourage the use of condoms to prevent ourselves from HIV/AIDS and other STDs. But, can condoms secure these problems? Rather if could have been better to teach them how to make friends and what relationship should be there with boys. Then after they know each other well, they may decide whether to have sex or not. But on the roadside, any body can pick up condoms for Birr 0.20 (twenty cents). This simply means telling the young just “go and have sex”. Right?

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Sensitized Girls - Healthy Generation

Views of College Girls

Queens College, Addis Ababa.
Proceedings of Workshops on HIV/AIDS and College Girls in Addis Ababa (BSE, 2004/05)
Sensitized Girls = Healthy Generation

Views of College Girls

1 Student at Central Health College, Addis Ababa.
Sensitized Girls = Healthy Generation

Views of College Girls
Awoliya College, Addis Ababa.
GENERAL DISCUSSION – PHASE II

Chairperson: S/r Semira Afendi; Rapporteur: Teferi Mekonen

The Chairperson summarized the aims of BSE in organizing such workshops, the role of sensitization and mobilization of girl students on the fight against HIV/AIDS, the advantages of establishing girls club in each University/College, free and fair access for information in the campus, and establishing network among girls clubs.

Having said so, the chairperson opened the floor for comments and questions.

COMMENTS

➢ A heartfelt appreciation was expressed to BSE for organizing this workshop, taking the lead to initiate sensitization and mobilization of girl students to fight against HIV/AIDS, and bringing girl students from different campuses together and inviting them to discuss on their burning issues and share their experiences. It has also been mentioned that BSE has contributed to realize the goal of strengthening/establishing girls club in the campuses.

➢ It has been mentioned in the presentations that condom has a great advantage to prevent the transmission of HIV. However, its promotion on ETV is usually shot after beer advertisements. This trend tends to reflect a message of encouraging condom use for arrogant sexual activity and breaking abstinence and faithfulness. Therefore, it is good if BSE can make effort to revert the modes of condom promotion.

➢ The advertisements of condom on ETV have very special and attractive artistic presentation. It can be captured easily and can be remembered as a good and only solution to prevent STD transmission. This by essence will rise sexual desire and encourage the people for sexual intercourses. The promotion should be made in a way that the use of condom is just to minimize the transmission risk but that cannot protect one from being infected. The risks must be made clear in each advertisement.

➢ Sexual desire is clearly a natural feeling, but the most severe way of HIV transmission can be caused by exposed sexual activities. If we fail to respect the first two options (i.e. abstinence and be-faithful), then the use of condom is recommended only as a third option. From different publications and media announcement, the use of condom is clearly indicated as a strategy for the prevention of STD and HIV, it has also advantage in the prevention of unwanted pregnancy. However, failure in condom use has been observed in male partners. This workshop or any means of training must be conducted to teach males on the proper use of condoms.
In both the Muslim and Christian religions, it is clearly emphasized to be married and remain faithful to the spouse. Sexual activity before marriage is strictly forbidden and all should respect it as a daily life directive. Rather than talking about condom and investing in condom, it is wise and safe to follow the Holy Books (Holy Bible and Koran) to refrain from sex before marriage and remain faithful to the loved ones after being married. Therefore, there is a strong objection of condom introduction and promotion for use. It is also not a good idea to tell us about condom use as an option for prevention. The idea of condom use should be rejected completely!

Here in Ethiopia, like other developing countries, there is poor economic condition and unemployment in the population. These factors are the leading social and economic causes for the higher HIV transmission. Most of us here in this auditorium are students and must focus on how we can be employed and contribute for the development of our country after graduation. To achieve our best goal and help ourselves, please unite your effort and concentrate on your study, and disregard sexual activities before marriage.

All the ABC strategy needs genuine consensus to be implemented. We need to accept the very fact of condom use rather than bringing irrelevant and endless issues for discussion. What we need at this point should be to understand the message addressed on each poster and TV advertisement. How many of us can understand the message of each poster? It has been seen also that ladies have encouraged male partners for sex by wearing seductive clothes and showing unnecessary exposures. Ladies go out simply for sex as a means of getting money and other kind of gift from male. First, let us fight this epidemic rather than blaming male partners and ridiculing condom use! We do not need to give it time.

It has been said so many times that females are the one who encourage males for sexual desire. However, to be clear that we females have a right to dress any type of clothes. For that matter, males also dressed in a manner-less fashion too. It is rather good to teach them to behave themselves rather than blaming females.

In these days, the transmission of HIV in our setting is rampant. The basic reasons are due to neglecting or underestimating certain social and economic aspects. The following eight points are the major ones and if they can be corrected, the transmission rate will definitely be reduced.

1. Underestimating Marriage,
2. Healthy environment and society are not given value,
3. Artistic presentation of films and dramas that arose sexual desire,
4. Alcohol and drug use are not strictly forbidden,
5. Acceptance of commercial sex work as a means of income for living,
6. Manner-less and seducing appearance and clothing of females,
7. Gathering of females and males in one confined area (bus and school room), and
8. Very poor education on condom use.

QUESTIONS RAISED AND THEIR RESPONSES

➢ The prevalence rate of HIV in Ethiopia looks relatively high. In the presentation, it has been indicated that the prevalence rate is higher in Amhara Region as compared to the Southern Nations Nationalities and Peoples Region (SNNPR). What can be the reason for this significant variation in prevalence rate? How about the prevalence in urban and rural parts of the country? What was the basis for comparison of HIV prevalence in the two regions (Amhara and SNNPR)? Are other parameters like population size, culture, economic status, and population movements considered correctly?

➢ Different findings indicate that HIV prevalence can vary from place to place. Available evidence on the prevalence of HIV in urban parts of Ethiopia suggests that of the major 5 regions, Amhara Region was the most affected region, followed by Addis Ababa, Oromia, Tigray, and SNNPR. Homogeneity in the spread of HIV in the rural areas has been observed. The same study on male army recruits showed the prevalence rate in SNNPR as 4.3% and 10.5% higher in Amhara Region. Actually the most specific reasons are not articulated in the work, nor have the population size, culture, economic status of the regions have been considered. However, as it is indicated in different works of other places, the most likely factors for the uneven spread of HIV among regions might be socio-economic, cultural, demographic factors, sexual behavior patterns and the prevalence of STIs.

• Proper use of Condom is recommended as an option for the prevention of HIV. What is the efficiency of condom in the prevention of HIV? Is the rumor about the transmission of HIV by the condom itself true?

➢ Nowadays all condoms are made from latex and the quality is electronically tested before marketing. Here in Ethiopia, all imported condoms are tested by Drug Administration and Control Authority. So far there is no scientific evidence presented on the probability of transmission of HIV by the condom itself. Other than such rumors, there is no side-effect or complaint.

• It has been observed that condoms are shelved in kiosks, shops, bars and hotels at different places and within poor quality containers; consequently, exposure to sun, heat, wind and other conditions. Does this have any effect on the efficiency of condom?

➢ It is recommended to keep condoms in safer places, otherwise its quality will be in question mark. Care should be given when condoms are purchased, i.e.
the package MUST be intact, there should not be any physical damage on it, and it should not be used beyond the expiry date.

- The percentage of HIV transmission is different between males and females. However, it has been reported that there is discordant infection. What is the main reason for the discordance and how often does it happen?

  The number of HIV infected students in Queens' College has increased from year to year, and more of the victims are female students. Based on this information, is it possible to say that students from private colleges are highly infected (because it has been once mentioned in one new paper)?

- Biologically, females are more vulnerable for HIV infection as compared to the male partner. In most discordant cases, the couples might not have been tested for HIV before they start sexual intercourse and could not assure how one of them became infected. At any rate, for the transmission of HIV to take place there are certain factors like higher viral load, advanced disease stage and STI. There are cases where one naturally gets deletion of the viral receptive part of the immune cells, in which case they are mostly not infected. One good example for such kind of non-infection is the prostitutes in Kenya who have been on commercial sex work but remain uninfected for long period of time.

- Regarding the increment of HIV infection in private Colleges, there is no scientific justification; it is entirely based on personal observation. This area needs to be addressed in the future!

- Why did you (BSE) not invite the government officials who can take our comments, raised questions and other information to be addressed with special emphasis?

- BSE has consecutively invited different governmental official to participate in these sensitization workshops, but most of them declined to be involved, other than EHNRI and Family Planning. Addis Ababa HAPCO is a good example that cannot show up for participation. However, our effort will continue to bring such officials to the workshops. At this point, we have to appreciate the concern and support given by UNFPA.

- There are people whose status becomes worse and their symptoms aggravated even if they have started treatments with ART. How is this happening to them and can we say that the drug is not effective for these people?

- There are various reasons for such cases – the development of TB, cancer, drug resistance and poor adherence – where the drug has no effect to minimize the viral load and rebuild the immune system. In a very poor country like Ethiopia, drug resistance and sensitivity tests cannot be done and in most cases the administered drug could not have the appropriate effect on the virus strains. Treatment with monotherapy has a higher probability of developing drug resistance. On the other hand, higher doses of drug to overcome resistance level lead to increased risk of side effects. Nutrition, treatment for other infections and prophylaxes for OIs along with HART (combination therapy) is
the most reliable and effective means of treating HIV/AIDS patients and prolonging their life.

- BSE has organized such workshops for girl students in the universities and colleges, what is the plan/effort to organize workshops for high school students?

  BSE has planned to launch these workshops in phases – the first phase is for university/college students, and the second one will be for high schools. Since the number of high schools is tremendously high in the capital, it is not possible for logistic purpose to make it at the same time. Other than high schools, there is a plan to undertake such workshops in the other universities/colleges outside Addis Ababa, but the experience we got so far will help us to implement it in a very coordinated way. One main advantage of such workshop is to get girl students together and discuss on their basic needs. Such valuable information will help for the more successful implementation of the next steps.

- Why doesn’t BSE arrange for educating girl students on how to prevent pregnancy and family planning in general?

  FP is pleased to be invited to participate in such workshops, and provide valuable information to the targeted audience – like girl students in this case. FP believes that every human has a right to get information and equal service. Family planning clinics are established in different parts of the country based on this fact and are giving services to all freely and equally. There are different posters and written materials (in local languages) distributed among the population to provide information to have a planed family structure, prevent unwanted family crises and produce healthier generation. Family planning based study in Gondar University has indicated that there is a high rate of abortion and a study in Jimma University shows a high prevalence of HIV infection among the students. At this point, there is a need to prevent the transmission of HIV and avoid unwanted pregnancy by coordinating FP with VCT. FP highly promotes condom for prevention of infections and unwanted pregnancies. Whether someone rejects or accepts the promotion of condom; since scientific evidences are supporting the use of condom as a third option for safe sex, FP will advocate for that, and distribute condoms. There is a plan for extending FP services in the universities/colleges.

- What strategies did Uganda used to fight the HIV/AIDS epidemic in the country? What lessons can we learn from their strategy to fight HIV/AIDS?

  After observing the catastrophic death of most residents in one area, the government officials started to work very hard. Governmental officials have internalized the problems and mobilized the public to fight the pandemic. The good example is that the President visited all the affected people, undertook voluntary test publicly, and made a speech that was aired on the national radio
on a daily basis. They have established VCT at a district level and all services are given freely. Campaign to avoid stigma and discrimination, provision of intensive free care and treatment of HIV/AIDS patients at home, clinic and hospital-based service also played a great role. The main success in the reduction of HIV transmission is achieved by serious implementation of ABC strategies, public education on the mode of HIV transmission and its prevention.

CLOSING REMARKS BY THE V/PRESIDENT OF AWOLIYA COLLEGE

Dr. Abdela Kedir

- The best of protection is attack and intensive fight against the cause of a problem,
- Religion plays a great role in the fight/control,
- Practice the lessons learnt from Uganda and other nations on the fight against HIV/AIDS,
- Cleaning ourselves and our surroundings for the well-being of the population,
- Educating the next generation for more protection and more peaceful world, and
- Finally, appreciated the efforts of BSE, organizers, presenters, and all the audience.
Publish Your Manuscripts in the

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EJBS Vol. 4 No. 1 and Vol.4 No.2
THE BIOLOGICAL SOCIETY OF ETHIOPIA

OBJECTIVES

- Create awareness on environment and development issues in the formal and informal education sectors and amongst the general public;
- Promote biological research and encourage biologists to strive for professional excellence;
- Contribute to the growth and development of biological education and give technical support and encouragement particularly to biology teachers;
- Enable biologists to interact with their local as well as international counterparts through seminars, workshops, symposia, publications, etc.;
- Popularize biological science through publications and the mass media;
- Provide consultancy services and conduct collaborative investigations on issues that require biological expertise;
- Publish scientific journals and other documents as media for communication among its members and the general public.

ACTIVITIES

- Organize conferences, workshops, seminars, panel discussions and film shows;
- Support the existing environmental education school clubs and encourage the establishment of others;
- Publish background reading materials on biological topics in English and the main local languages to improve the understanding of biological issues for students, teachers, and the general public;
- Create networks with sister societies and organizations at national and international levels on matters of common interest;
- Seek for funds to support the society's activities.

ORGANIZATION

The Society is governed by an officially registered constitution and is managed by an Executive Committee elected for a period of two years by the General Assembly. The Executive Committee consists of President, Vice president, Secretary, Treasurer, Editor-in-Chief, Public Relations Officer and three ordinary members. In addition, it has a Programme Coordinator to run the Society's activities.

MEMBERSHIP

There are four types of membership:

Regular - those who have a diploma or higher qualifications in biology or those who have studied biology for at least two years at university level;

Associate - Biology teachers or persons engaged in biological research who do not fulfill the requirement for regular membership;

Institutional - institutions wishing to support and benefit from some of the activities of the Society;

Student - those registered in higher education institutions and who are majoring in biology.

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A Few Messages about the Sensitization Workshops

SENSITIZED GIRLS = HEALTHY GENERATION  
(From the Biological Society of Ethiopia)

Ethiopia is currently facing a major health problem, that of HIV/AIDS, which is severely affecting the life, economy and social interaction of the victims, their families and the society at large. Recent efforts to create awareness and reduce the spread of the disease do not seem to have given satisfactory results. News and data that are released every other day demonstrate this fact. As with many other social and economic issues, women in general and girls in particular are easily vulnerable to the pandemic.

Females have a higher chance of being infected with HIV during unprotected sexual intercourse. Women and girls usually take the responsibility of caring for AIDS patients in the family, and may suffer economically when the husband dies of AIDS. For these and other cultural reasons, usually girls are the ones who are deprived of the opportunity to go to school. Those girls who have joined higher education institutions are the ones that got the chance to break through these barriers. However, these groups also face the risk of being infected with HIV. That is because they belong to the age group of females (15-24) that have a higher prevalence for HIV/AIDS than their male counterparts. The worst part is that the status of college girls with respect to prevalence and impact of HIV/AIDS is not evidenced to date.

Girls at higher learning institutions need be a point of focus in the fight against AIDS; they are the models and educated mothers of future Ethiopia. The Biological Society of Ethiopia (BSE), therefore, organized successive sensitizing workshops for these target groups under the main theme "Sensitized Girls = Healthy Generation". This is believed to be a contribution to the World AIDS Campaign 2004 that has a thematic focus on Women, Girls, HIV and AIDS. The outputs of the Workshops could be of benefit to college girls, their families and the society as a whole.

CAMPUS GIRLS CONFRONT AIDS: REAL VOICES FROM THE REAL WORLD

Twenty years after the first clinical evidence of AIDS, mankind is still dealing with the disease. This scourge has killed infants, children and adults in large numbers. The statistics of mortality and infection are incredible, and they continue to mount by the day. AIDS is one of the No. 1 killers in Africa today. Available statistics
also show that across the continent, there are 3.4 million infections every year and 28 million people living with HIV/AIDS. Life expectancy is gradually declining to 30 years. Despite some good examples in reducing HIV prevalence cases given by some countries like Uganda, Cambodia and Thailand, HIV continues largely to spread uncontrolled. The factors enabling HIV spread are similar worldwide and include poverty, lack of education, economic insecurity, lack of female empowerment, social exclusion, sexual exploitation, and lack of information and/or commodities for self-protection. The case of Ethiopia is not far from this fact. Everyone should understand that it is a necessity to educate on how to make responsible decisions since HIV/AIDS is something one can get and must be aware of.

It's a huge problem, but as a girl, a college girl, we can really make a difference. As has been said by a college student: "How we deal with AIDS and its effects will be the heritage that our generation leaves". We are in the age of having a golden opportunity to do so many meaningful things. *We must... we must be sensitive to do something relevant to the current state of the epidemic*. Let us make an impact with the superior quality we have on ourselves, by making quality decisions in our life and strengthening our attitude towards fighting HIV/AIDS.

Finally we must ask each other: "I care, do you?"

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**HIV INFECTION AND ITS PREVENTION**

*(Contributed by Teferi Mekonen)*

**Course of HIV Infection: typically follows**
- Primary acute infection with a characteristic clinical picture,
- Prolonged period without visible symptoms,
- Severe immunodeficiency resulting in secondary opportunistic infections and tumors

**Modes of HIV Transmission:**
- Sexual intercourse (anal or vaginal)
  The risk of transmission of HIV through sex is higher if the sex involves anal sex or rough sex (rape) that causes lesions, if sexually transmitted infections are present, if the vagina is immature, if the women is menstruating, if the man is uncircumcised, and/or if the HIV-positive person is newly infected or in the late stages of infection.
Contamination with blood
Transfusion of HIV-infected blood and blood products, use of contaminated cutting/piercing, syringes or surgical equipment, and sharing of contaminated needles in drug injection are the ways for HIV infection.

Mother-to-Child Transmission
HIV can be transmitted to an infant during pregnancy, labour and delivery or breastfeeding. Factors that influence the risk of infection are higher viral load of the mother at birth, low CD4 count, Vitamin-A deficiency, presence of STI, sexual activity during pregnancy, and mode of delivery.

Vulnerability to HIV Infection:
- Drunk people - alcohol affects an individual’s ability to make decisions and negotiate or demand safe sex, thereby increasing their risk of acquiring and transmitting the virus.
- Circumstances - that cause vulnerability include poverty, low social status, inequality, discrimination, marginalization, and criminalization.
- HIV infected people – they have less means to live positively with AIDS, because they cannot afford treatment, cannot access care, may lose their jobs and resources (more impoverished), may face increased stigma and discrimination.

Strategy for Prevention and Care:
- Apply the ABC-rules (A- abstinence, B- be faithful, C- use condom)
- Use of antiretroviral drugs
- Safe delivery practices, and breast milk substitutes
- Disinfection and sterilization of instruments (needles, cutting and piercing materials, surgery and dentistry equipments)
- Transfusion of screened blood
- Protect health care workers
- Mobilizing and building human capacity to respond to, cope with, and overcome the effects of HIV/AIDS (e.g. education)
- Make available (accessible) voluntary counselling and testing services
- Investment in future technologies (e.g. Vaccines and microbicides)
- Intensifying poverty reduction and improvement of social services as well as behaviour change
  - Family planning
  - Good nutrition
  - Social, spiritual, psychological and peer support
  - Respect for human rights
  - Reduction of the stigma associated with HIV/AIDS

For more information on HIV diagnostics, visit: http://www.who.int/bct/
SENSITIZE GIRLS = HEALTHY GENERATION

Participation at the Great Ethiopian Run 2004 and 2005
The Biological Society of Ethiopia
Available Booklets

The Biological Society of Ethiopia publishes the *Ethiopian Journal of Biological Sciences (EJBS)* and proceedings of the Society's conferences. The following booklets are available for subscription or can be collected for free at the Secretariat Office.

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