Towards ICT-based Education and Counseling Support System for HIV/AIDS Prevention in Uganda

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Abstract

Today a number of approaches are being used to create HIV/AIDS awareness campaigns in Uganda; these include dramas, public rallies, school assemblies, radio programs, newspaper articles and ICT-based education. There is a clear need to design and develop ICT solution to compliment other initiatives for preventive actions against HIV/AIDS in Uganda in particular and sub-Saharan Africa in general. This paper examines the existing software features for HIV/AIDS preventive education and counseling services in order to identify gaps in these practices, recommend features to address the existing problems. The paper also identifies cutting-edge technologies that can be used to promote communication and interaction among all the stakeholders in the fight against the spread of HIV/AIDS to the school children in Uganda.

1. Introduction

The purpose of this paper is to analyze the existing ICT solutions to HIV/AIDS preventive education in order to identify the gaps in the existing practices. The knowledge of the existing software features and the user requirements can be used to develop a novel web-based HIV/AIDS educational support system for Ugandan youth. ICT can be used as a tool for HIV/AIDS education and counseling services support in Ugandan schools. Computer literacy has continued to expand from urban schools to rural schools since the introduction of computer literacy in Ugandan schools by development partners in 1996. Very little emphasis has been put on using ICT as a tool for promoting HIV/AIDS education in secondary schools. HIV/AIDS epidemic has caused a lot of havoc to sub-Saharan African countries. The young people have never known a world without HIV/AIDS with millions already dead and yet the epidemic among youth remains largely invisible [4]. The fight against HIV/AIDS requires comprehensive strategies with focus on youth if the epidemic is to be contained. Ikoona (2006) acknowledged that Sub-Saharan Africa which has only 10% of the world’s population is home of more than 60% of people living with HIV and AIDS. Among young people aged 15-24 years an estimated 6.9% of women and 2.2% of men were living with HIV/AIDS by the end of 2004 [3]. In 2005, 40.3 million people were living with HIV, and of these 4.9 million got infection in 2005, and there were also 3.1 million people who died of AIDS in 2005. Table 1 provides some epidemiological trends for HIV/AIDS in Uganda.

Table 1: HIV/AIDS epidemiological trends in Uganda [9]

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982</td>
<td>The first HIV/AIDS case was identified in the country along the shores of lake Victoria. The epidemic progressed very fast to all parts of the country</td>
</tr>
<tr>
<td>1992</td>
<td>The national prevalence rate was estimated 18.3% with some centers registering rates above 30%</td>
</tr>
</tbody>
</table>
| 2002 | • The prevalence rate dropped to 6%, this is attributed to favorable prevention policies.  
• New infections were 73,830  
• 75,290 AIDS deaths |
| 2005 | • 132,500 new infections occurred  
• 76,000 AIDS deaths  
• 915,400 adults and children were living with HIV/AIDS  
• Prevalence rate was 6.7% |

In this paper we analyze how existing preventive solutions could be improved by using modern information technologies and provide recommendations for functional requirements for a comprehensive HIV/AIDS education support...
system. In chapter 2 we discuss about the effect of HIV/AIDS epidemic in society together with different types of media that have been used for preventive education support in Uganda. In Chapter 3, we present a selection of existing ICT-based practices for HIV/AIDS preventive education and counseling support in Uganda and in other countries. In Chapter 4, we analyze the existing ICT solutions from the perspective of providing HIV/AIDS education for Ugandan youth and provide recommendations for the design of HIV/AIDS prevention software for Ugandan youth. Finally, in Chapter 5 we conclude the results of the paper.

2. Impact of HIV/AIDS epidemic on Ugandans

Ikoona (2006) identified the following problems with HIV/AIDS in Uganda: death of 1.6 million Ugandans with 2.6 million already infected since the detection of the first HIV cases in 1982 (UAC), labor and human capital is severely affected; time lost by civil servants due to frequent illness to HIV/AIDS and absenteeism to care for the sick with AIDS; increased number of orphans (2.1 million); bed occupancy in hospitals by AIDS patients in medical wards (75%); increase in drug purchase for the treatment of opportunistic infections and other related illnesses; and increase in workload for few health workers [3].

Ikoona further stated that one of the major interventions in fight against HIV/AIDS is Information and Educational Communication (IEC) that focuses on awareness, knowledge and behavior change. The approaches used to implement HIV/AIDS preventive actions include social mobilization of the community using mass media campaigns on FM radios, TVs, newspapers, and community mobilizations at grassroots through drama; film shows meetings, and health education. United States Agency for International Development (USAID) recommended IEC materials development and distribution to the districts. However, the above intervention is still inadequate and there is need to scale up ongoing interventions and scale up new ones.


In this chapter, we present a selection of ICT – based solutions for HIV/AIDS preventive education and information sharing. We start by presenting the cases in Uganda followed by cases from other countries.

3.1 On-line counseling services for Ugandan Schools

The World Bank and other development organizations are establishing innovative ways to educate children and adults about HIV/AIDS [1]. For instance, in Uganda a new online counseling program for kids has been implemented. Selected students get educated on reproductive health and HIV/AIDS and serve as online counselors to their peers. The students get information they need in anonymous way. An on-line counseling service was launched in May 2003 for three school-based telecenter sites; this was followed by training of teachers and student-peer counselors at Rider Hotel, Seeta, Uganda. The purpose of these centers was to help young people appreciate reproductive health problems and how they relate to HIV/AIDS infection. Through the above initiative, the teachers and students acquired basic counseling skills; developed basic ICT skills required for online counseling, and designed actions plans for the project. The online counseling service was initiated jointly by SchoolNet Uganda, ICT for education program of World Bank Institute and Straight Talk Foundation. While Uganda made reasonable progress in the fight against HIV/AIDS, the overall rate of new infections and reproductive health problems remained among the young people [1].

3.2 World Links and the AIDSWEB Project

Since early 2002, World Links and its project partners have been running the AIDSWEB project in secondary schools in Africa using ICT solutions to promote HIV/AIDS education and prevention activities. The early results from the project suggest that technology could play a complementary and useful role in helping combat HIV/AIDS [2]. The overall HIV prevalence rate among African youth showed the continued need for HIV/AIDS educational prevention activities specifically for uninfected youth.

AIDSWEB project was designed as the initial online collaborative project on HIV/AIDS prevention and care. In early 2000, fifteen schools in Ghana, South Africa, Uganda and Zimbabwe participated in the project using the ICT resources and training available at the World link’s Internet learning and community centers established in each of these four countries [5]. In 2001, twenty-five schools with 200 teachers and students participated in the project; in 2002, over thirty schools with about 300 teachers and students enrolled in the project to exchange questions, answers and discussions via the project’s
moderated e-mail listserv. The participants walked through five educational goal activities in the project; cultural exchange, basic facts about HIV/AIDS, the importance of HIV/AIDS, the challenge of HIV prevention, and social action. Furthermore, teachers and students explored myths and misunderstandings of the disease and conducted research how they could prevent HIV in their own lives and communities. The social action component was an important part of the project. Students and teachers were able to develop an HIV/AIDS action plan through which the students could make an attempt to impact on their community. Some of the social action plans included working with Parent-Teacher Associations, establishing income generating projects for the youth, and inviting testimonies from people living with HIV/AIDS. One of the priorities in the project was to get more and better HIV/AIDS educational materials into schools. World Link worked on two fronts to provide appropriate information to project participants. First, a CD-ROM with relevant HIV/AIDS websites was produced and disseminated for schools with slow or no Internet connections. The content of the CD-ROM was created from existing online materials (e.g., UNAIDS, CDC, WHO). Secondly, high quality and locally produced print-based HIV/AIDS educational material was adapted for electronic dissemination via CD-ROM and website. From Namilyango College in Uganda, after the challenge of HIV prevention online project activity, the students went out in their communities and interviewed various authorities’ mostly elderly people to find out their views about HIV and they exchanged productive information regarding preventive measures [5].

3.3 Practices of HIV/AIDS preventive education in other countries

3.3.1 ePresence Software

ePresence web-based software was developed for people with HIV/AIDS to learn about treatment issues. Initial research indicated that, for instance message forums or web-based documentation abilities were seen as an effective way to reach persons with HIV/AIDS. Video had also shown promise as a technology to aid consumer health education. However, no research had been published for investigating the impact of web-based environments combining these components in an educational workshop format [6]. A research was designed to investigate how a web-based resource that included computer mediated communication, video and support documents could be used by HIV/AIDS community members. The above objective was operationalized with the ePresence software that combined the workshop, message forum, and web site. The ePresence software was available, collectively to participants at all the time. The ePresence system did not achieve its implementation objectives as most users who started using the software abandoned it for a number of reasons including: Poor interface and lack of added value because the content was not easily transformed into offline. The developers of ePresence concluded that more research is needed to investigate the ways in which treatment information are being met by HIV/AIDS community members and how technology fits in this process before investing large amounts of money into web-based interventions [6].

3.3.2 ICTs and the fight against HIV/AIDS in India: the SAATHII Experience

SAATHI facilitated dialogue among the diverse sectors involved in the fight against HIV/AIDS in India. The activities of SAATHI include a range of capacity-building initiatives including facilitation of network formation, mapping of resources and services, information dissemination and technical assistance to service providers. SAATHI was among first NGOs that used ICT as a tool in HIV/AIDS area. It worked to bridge information, networking and other capacity gaps using three approaches:

i. Creation the listserv (saathia@yahoogroups.com) for timely information delivery

ii. Publication of directories for HIV/AIDS organizations at http://www.saathii.org/stapps/searchindex.jsp. This directory allowed the public to find HIV/AIDS resources including drop-in centers, counseling, treatments, and testing centers within their vicinity.

iii. Creation of web site www.saathii.org for HIV/AIDS educational resources, HIV-related conferences, workshops and preventive issues [7].

3.3.2 Indian Mobile Games to fight HIV/AIDS in Africa


ZMQ developed games across a range of mobile platforms and technologies such as
WAP, SMS, J2ME, BREW, Symbian, Flash Lite 1.1, Pocket PC and Palm OS. The games were designed for a variety of devices from basic Java Phones to Smart phones and pocket PCs. The methodology for designing a game included user interactivity, flexibility, competition, excitement, reality, and usability [8].

4. Analysis of existing ICT-based HIV/AIDS education solutions

In this chapter we identify the shortcoming of software solutions presented in Chapter 3 to fight against HIV/AIDS with Ugandan youth.

4.1 Applicability to youth

The ePresence web based environment for HIV/AIDS information dissemination and treatment mainly applies to adults and places little or no emphasis on children. The Indian mobile games for HIV/AIDS awareness creation can be an effective tool for HIV/AIDS education support in Uganda. However, this will likely favor adult population more than the school children who have little or no access to mobile phones. The mobile phone approach is not interactive and does not promote communication between the children, teachers and HIV/AIDS counselors.

4.2 Address the real needs of the users

The ePresence software environment was not successfully implemented as it failed to add new values to the clients’ expectations. The software had rich interface but failed to address user needs, implying that users were not involved in requirements gathering process and this resulted in software rejection by them as it did not address their needs.

4.3 Bias towards certain types of users

The Indian mobile game initiative seems very promising solution in any developing country, since the use of mobile phones is widespread in many areas. However, in Uganda, the rural areas remain poorly connected; this means access to mobile games will favor urban population. Other approaches of ICT based HIV/AIDS awareness creation need to be explored to reach majority of the population both urban and rural. The existing ICT based approaches do not target children in high school; we need to come up with approaches that can be available and cheaply to school children in Uganda.

4.4 Use of modern technologies for appropriate communication

AIDSWEB project focused on production of educational content on CD-ROM with relevant educative websites for HIV/AIDS preventive education but did not establish online interaction between students and counselors, students and students, students and teachers. There is a need to make use of current web tools that allows social networking among the stakeholders. The present online counseling has no features for professional HIV/AIDS counseling services support but only gives provision for students’ peer-to-peer anonymous counseling on reproductive health. All of the existing tools are more or less focused on HIV/AIDS information dissemination to the stakeholders but do not promote communication among them.

5. Conclusion and discussion

ICT has been used for HIV/AIDS online preventive education and provision of treatment information for opportunistic diseases. The approaches used for service delivery include CD-ROM information, online services, and mobile computing. Some of the online services are for AIDS patients while others provide preventive education to healthy people. ICT has potential to offer more services to AIDS patients and healthy people in terms of counseling and preventive education. The design of software environment for HIV/AIDS education and counseling support services should be tailor made to accommodate the needs of different age groups in societies or schools. The design of web-based HIV/AIDS education support should enable users to contribute content online so that they feel part of the system and they can effectively use the system for counseling and education support. Web 2.0 is good platform for encouraging social networking in HIV/AIDS education support environment.

6. References


