Application of ICT in building up HIV/AIDS awareness among adolescent students in India

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Abstract
Information and Communication Technology (ICT) is a diverse set of technological tools and resources used to communicate and to create, disseminate, store and manage information. ICT has become an essential part of all sectors and even everyday life. The National Curriculum Framework 2005 (NCF 2005) has highlighted the importance of ICT in school education. The present generation is a multimedia generation. It is known to all how computer and internet have brought revolutionary development in the world of communication. With the use of it one can move across the world not literally but virtually by being in front of the computer table. The use of ICT can boost up the teaching learning process. On the other hand, lack of proper knowledge about HIV/AIDS, its mode of transmission and ways to avoid infection, are major challenges in India. National Council of Education Research & Training (NCERT) involved in development of school curriculum package for integration of HIV/AIDS into school education (extra-curricular activities). Information and Communication Technology can offer key opportunities in building up HIV/AIDS awareness among school students, especially the adolescent students. Adolescence is shrouded in myths and misconceptions about sexual health and sexuality. During the last decade, there has been an increasing realization of the importance of adolescent behaviour.
The present paper aims to discuss the use of ICT in spreading awareness of HIV/AIDS among adolescent students in India. Data were taken from some probe reports and some Government agencies and NGOs. All the data were collected by survey and information was used as secondary data.

Keywords: ICT, HIV/AIDS, Adolescent students, Computer, Internet, Smartphone

1. Introduction
Information and Communication Technology (ICT) is used for information storage and retrieval. The ICTs have rapidly evolved since mid-20th Century. ICT has significant impact on all areas of human activity (Brakel and Chisenga, 2003) [2]. In developed countries, ICT plays a pivotal role in ensuring timely and speedy diagnosis as well as in improving and securing the quality of health care in most medical disciplines. ICT also offers the option of remote, distant delivery of an increasing number of public health care services, despite physical distances and time zones existing between patients and health care providers. A similar statement can be made for education: advancements in ICT made the application of new educational concepts for distance learning, problem oriented learning, self-assessment, awareness raising and mass education possible (Geers and Page, 2007) [3].

India is a large population with a low literacy level which leads to a low awareness of HIV/AIDS. The disease is posing a threat on the public health scenario (Singh and Jain, 2009) [8]. At the same time, discussing sex has been a taboo in Indian societal set-up. There are still several myths and misconceptions about puberty, masturbation, night emission, sexual intercourse, safe sex, reproductive health, sexually transmitted diseases (STDs), etc. Unprotected sexual practice among young adults can cause serious consequences, particularly in adolescent girls. Moreover, immature reproductive tracts of young people make them more susceptible to HIV/AIDS. Only during the last decade, there has been an increasing realization of the importance of adolescent behaviour. The challenge lies in developing programme to induce behavioural changes among the young as well as the adult population (Singh and Jain, 2009) [8]. ICT enhances access to and communication on HIV/AIDS information. Recent advancements in ICT in relation to public health, education and public (Internet based) networking provide a growing arsenal of instruments (in terms of ICT based interventions) for combating HIV/AIDS and for mitigating the effects of the epidemic (Ghosh, 2007) [5].

The last two decades have witnessed a revolution caused by the rapid development of Information and Communication Technology (ICT). ICT increases the flexibility of delivery of education so that learners can access knowledge anytime and from anywhere. HIV/AIDS has had a great impact on society, both as an illness and as a source of discrimination. The awareness of HIV/AIDS in India is still low. This study will try to find out the use of ICT in spreading awareness among adolescent students in India.

2. Objectives of the Study
The objectives of the study are:-
1. To find out the role of ICT in education.
2. To find out the role of ICT in building up HIV/AIDS awareness among adolescents.

3. ICT in Education
Why do we need ICT in school education? It is not that education was not taking place before computers came into existence. Is this paradigm shift necessary? The shift is necessary because it is the age of information and technology. But, unfortunately, in India Information and

Communication Technology is associated with the use of computers and internet. The use of ICT tools like Radio, television, teleconferencing, video conferencing, etc. are the date back introduction of ICT tools in education. And along with all these, the radical development of computers and internet in the field of information and communication has almost brought a revolution in the field of education. Since 1992, the access of email left behind the concept of geographical distance of common people. ICT is used as a supportive educational tool enabling the students 'learning by doing'. With the help of ICT teachers engage students in self-paced, self-directed problem-based or constructive learning experiences. ICT is not merely to provide information but to interact, share, and learn (George, 2012) [4].

The strength of ICTs can be jotted up as follows from the studies of several researchers:

i) **Individual Learning:** ICT opens options for all individual to learn as individual rather than homogenous group.

ii) **Huge Information Resource:** There is easy access to huge information resources throughout the world.

iii) **Interactivity:** A learner can start at any point depending upon the prior learning instead of always in a sequential way.

iv) **Quality Education:** Uniformity of quality is better maintained by using ICT in teaching learning system.

v) **Distance and Climate Insensitive:** In a country like India, where the variety of climate can be compared to the world as it does not matter where the learning process takes place or what is the state of the climate at that place.

vi) **Low per capita Cost:** With the help of ICT the cost of per person for education is lowered by a certain considerable rate.

vii) **Time Saving:** Use of ICT in education is a time saving factor for receiving and sending information.

viii) **Access to Large Number of Audience:** With the use of ICT in education huge number of audience living in different geographical place and time can be addressed.

There are weaknesses of ICT in education too. Sometimes, the strength appears to be weakness. The weaknesses are as follows:

i) **Huge First Time Investment:** A huge one time investment is necessary for ICT tools, which is appeared to be a problem.

ii) **Coping up with the New Updates:** Everyday, technology is being developed. To cope up with the pace of the development creates financial pressure and increases e-waste which is harmful for the environment.

iii) **Hard to Access, Digital Divide:** At every part of the nation, it is not possible for all the people to have access to ICT always. Digital divide is another big problem for using ICT in education.

iv) **Lack of Orientation and Practice of the Trainers:** The trainers or the officers who prepare ICT tools used in education need huge practice and orientation for the proper time-to-time development of the tools. But there is the lack in this system of their Practice and orientation.

v) **Attitudinal Problem:** There are still a number of educators and learners who are not interested in ICT.

With the use of ICT, a teacher becomes a learning facilitator, who helps students as the actively engage with information and materials to construct their own understanding. By this, students know how to learn not just what to learn.

ICTs in the developing world have the potential to enhance the education experience for children who:
- Live in rural and remote-rural locations.
- Have special learning needs.
- Have physical disabilities constraining their access to schools.
- Have dropped out and/or have kept themselves out of school for various reasons.
- Aim for excellence and fail to get satisfied in the current system.

In India, various ICTs have been employed over the years to promote primary and secondary education. These include radio, satellite based, one-way and interactive television, and the Internet. The Government of India has taken several policies to equip the schools in India with ICT.

4. HIV/AIDS: history, current scenario, awareness status in India

AIDS is a spectrum of condition caused by infection with HIV. HIV/AIDS has had a great impact on society, both as an illness and as a source of discrimination. The disease has also become subject to many controversies involving religion. There are many misconceptions about HIV/AIDS such as the belief that it can be transmitted by casual non-sexual contact. It has attracted international medical and political attention as well as large-scale funding since it was identified in the 1980s. Since its discovery, AIDS has caused an estimated 36 million deaths worldwide (as of 2012). HIV is considered as pandemic –a disease outbreak which is present over a large area and is actively spreading. As of 2013, 35 million people are living with HIV and as of 2014, over 2 million adolescents are living with HIV. So, it is quite clear that the situation is still alarming.

Genetic research indicates that HIV originated in west-central Africa during the late 19th or early 20th century. AIDS was first recognised by the United States Centre for Disease Control and Prevention in 1981 and its cause- HIV infection was identified in the early part of the decade. In 1986, the first known case of HIV was diagnosed by Dr. Suniti Solomon amongst female sex workers in Chennai, Tamil Nadu. Later that year, sex workers began showing signs of this deadly disease. At that time foreigners in India were travelling in and out of the country. It is thought that foreigners were the ones responsible for the first infections. Since its discovery, AIDS has caused an estimated 36 million deaths worldwide (as of 2012).

According to National AIDS Control Organization of India, the prevalence of AIDS in India in 2013 was 0.27, which is down from 0.41 in 2002. While the National AIDS Control Organization estimated that 2.39 million people live with HIV/AIDS in India in 2008-2009. A more recent investigation by the Million Death Study Collaborators in the British Medical Journal (2010) estimates the population to be between 1.4-1.6 million people. The last decade has seen a 50% decline in the number of new HIV infections. According to more recent National AIDS Control Organization data, India has demonstrated an overall reduction of 57 percent in estimated new HIV infections (among adult population) from 0.274 million in 2000 to 0.116 million in 2011, and the estimated number of people living with HIV was 2.08 million

in 2011. In 2014, India's AIDS prevalence rate stood at approximately 0.26% - 90th highest in the World. The spread of HIV in India is primarily restricted to the southern and north-eastern regions of the country and India has also been praised for its extensive anti-AIDS campaign.

Yadav, *et al.* conducted a study in 2011 [10] in India among rural youth where out of a total of 1,237 subjects who participated in survey, 60% knew something about HIV. Of those who had heard of HIV, more than 90% subjects knew the modes of transmission and more than 80% were aware of modes of prevention of HIV/AIDS. One fifth of the subjects had misconceptions in relation to HIV/AIDS. Basic knowledge of HIV/AIDS is still lacking in two fifths of the rural youth. Literacy and media exposure are factors that determine awareness of HIV among them and can be helpful to raise their knowledge regarding this matter.

Gupta, *et al.* conducted a study in Lucknow, India, among secondary school students in 2013, where 215 boy and girl students were enrolled in the study. It was observed that the knowledge of the school students was quite satisfactory for most of the variables like mode of transmission, including mother-to-child transmission of the disease. However, schools should come forward to design awareness campaign for the benefit of the students.

Bolla, *et al.* conducted a study in Andhra Pradesh, India, among secondary school students in 2013, where about 92.6% of students had heard of HIV/AIDS and written correct full forms of HIV and AIDS, and 78.90% knew that causative agent of HIV/AIDS as virus. 75.43% of the students knew that HIV/AIDS status can be confirmed by blood test. 56.38% of participants knew that hugging and shaking hands with HIV/AIDS infected person will not transmit HIV. 72.13% students knew that infected blood transmission will spread HIV.

5. Using ICT to spread HIV/AIDS awareness among adolescent students

ICT can play a major role in spreading HIV/AIDS awareness among adolescents. Adolescence is the most crucial phase of any human's life. Most of the time, their queries are not properly answered by the parents and the teachers as they feel embarrassed to discuss issues related to reproductive health and sexual behaviour. Most adolescent students, on the other hand, actually want information about these topics (Jagannathan, 2008) [7]. The World Bank has prepared a special section online with useful information regarding HIV/AIDS in South Asia. One can learn more about latest data and analysis on HIV/AIDS, the state of the epidemic in Afghanistan, Bhutan, Bangladesh, India, Maldives, Nepal, Pakistan, and Sri Lanka and also World Bank efforts to fight HIV/AIDS in the region.

NACO (2010) approved the Teach-AIDS curriculum for use in India, an innovation which represented the first time that the HIV/AIDS education could be in a curriculum which did not need to be coupled with sex education. Later that year, the Government of Karnataka approved the materials for their state of 50 million and committed to distribute them in 5000 Government schools.

HIV/AIDS is still a disease of concern. Education sector is not fully equipped with both human and non-human resources (Trivedi, 2014) [9]. HIV/AIDS is still a stigma to many people. Basic information is given in schools but need

to put more efforts in secondary schools. Library is identified as a place of information. Topic can be taught in conjunction with other subjects. Teachers need to be more positive while delivering lectures on HIV/AIDS related issues. The use of ICT can enhance the awareness and attitude of adolescent students towards HIV/AIDS.

Bangalore Medical Services Trust & Research Institute has served the community in health awareness in various ways. This included training of teachers for life skill based, HIV/AIDS programmes in schools and colleges. This organization provided a self-learning CD which contained basic information regarding HIV/AIDS, its origin, cause, impact and prevention in a dialogue form in between two animated characters, mother HIV virus and her kid.

There are lots of evidences in African countries where ICT has played a major role in generating awareness. In India, programmes are being initiated by National and regional level by NACO, State AIDS societies, several NGOs as well as international organizations many of which are spreading awareness. The programme of 'Heroes', an NGO which is trying to get radio, TV and other media to include HIV/AIDS awareness as part of their everyday programme.

6. Conclusion and recommendations

Despite the problem of digital divide, ICT can generate and spread information through people. The youth of this society can strengthen the process if they get enlightened. Trained peer educators from school and colleges have taken the initiatives of spreading awareness through street-play etc. at the grass-root community level. Awareness can be built up, if not directly, but indirectly through ICT. But the main problem is the lack of coordination and co-operation among the various organizations and also between private initiatives and government initiatives. Proper coordination and sharing of experiences and resources can make ICT initiatives more successful. However, ICT are not a 'silver bullet' in the fight against HIV and AIDS, they must be combined with relevant programmes and policies to support HIV prevention, care and treatment. ICT can contribute to building the necessary platforms for communication and information exchange required. Planned and ongoing projects on HIV/AIDS are coordinated by national HIV/AIDS policies and plans (specifying the role of the actors involved), sector policies (e.g. health care, education and telecommunications) and priorities of funding agencies and NGOs.

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