



IMPACT OF AN EDUCATIONAL INTERVENTION PROGRAM ON KNOWLEDGE AND PERCEPTIONS OF COLLEGE STUDENTS TOWARDS HIV/AIDS IN ANAND

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ABSTRACT

Introduction: An estimated 5.4 million young people aged 15-24 were living with HIV and 780,000 were newly infected with HIV in 2012. Rapid modernization coupled with the fact that comprehensive sex education is practically non-existent among youth makes them quite vulnerable.

Objective: To assess the impact of an educational intervention program on the knowledge and perceptions about HIV/AIDS among students.

Methods: The study was conducted in four colleges in Vallabh Vidhyanagar, Gujarat. A pre-tested structured proforma based on Adolescent AIDS Knowledge Scale was used to assess the knowledge & perceptions regarding HIV/AIDS before and after the educational intervention. Descriptive statistics were used to depict the perceptions and paired t test was used to estimate the impact of the intervention.

Results: Total of 510 (63.7% females, 36.3% males) students from 4 different streams participated in the study. The mean(SD) post-test (12.78[0.93]) HIV/AIDS knowledge score was significantly higher than pre-test (8.98[2.71]) score ($p < 0.001$). The perceptions were restrictive and solutions perceived were extreme. Linkage between HIV and immoral conduct was not highly perceived by the students.

Conclusion: A simple interactive educational intervention can improve understanding of HIV/AIDS among students. Similar models with appropriate cultural adaptation should be implemented to empower youth regarding HIV/AIDS.

Key words: HIV/AIDS, educational intervention, college students, knowledge and perceptions

INTRODUCTION

With 1.8 billion adolescents and youth contributing to almost a quarter of the world's population, the current decade is witnessing largest generation of young people. India, in particular, is witnessing a demographic dividend. Youth is an asset and key partner in holistic societal development.¹

In 2012, an estimated 780,000 youth aged 15-24 were newly infected with HIV, with 97% of the new infections occurring in low and middle in-

come countries.² There has been a 32% reduction in the estimated number of new HIV infections among young people (15-24) from 2001 to 2012 globally.³ There has been 28% decline in incidence across south East Asian countries. An estimated 5.4 million young people aged 10-24 were living with HIV in 2012.³

Despite the impressive reduction in incidence of HIV infection, the number of AIDS-related deaths among adolescents increased by 50%, while the

overall number of AIDS-related deaths fell by 30% between 2005 and 2012.² There is rise in AIDS-related deaths among young people.³ This is partly due to increase in the total number of young people living with HIV but also ascribable to less concern for adolescents in national plans for scale-up of HIV prevention, testing and treatment services.⁴

The 2007 report of WHO pointed towards pockets of higher prevalence of HIV especially in high risk groups.⁵ With rapid modernization of the society coupled with the fact that young people are more prone to risky behaviour of all kinds, HIV epidemic may grow exponentially unless we act proactively.

Education is one strong sector with well built synergies to the HIV response and gender equality. Provision of comprehensive and appropriate sexual education that is gender responsive, evidence-based and culturally sensitive is a critical component of HIV prevention.¹ Youth can be actively involved by empowering them about various aspects of HIV/AIDS that will enable more informed choices and reduce their risks and vulnerabilities.⁶

Vallabh Vidyanagar today has emerged to be an active educational hub in the western part of India. Empowering youth to correct knowledge of HIV/AIDS is an important component of this intervention. With this background, the present study was conducted to assess an impact of an educational intervention regarding HIV/AIDS among college students.

MATERIAL & METHODS

Four colleges of different streams viz. engineering, pharmacy, commerce and medical technology were selected from Vallabh Vidyanagar town in Anand district of Gujarat, India.

The principal of each college was contacted and permission was sought from them to conduct the educational session after explaining them the purpose and contents of the intervention. Some minor rectifications were made in the contents as per their suggestions to make the education culturally acceptable. A written informed consent was obtained from the principals after all of them were comfortable with the final version of the contents.

The students were approached in their class rooms and were explained about the purpose of the study. They were also explained about the various measures taken to ensure privacy and confidentiality of the data. Written informed consent was obtained from all the students before conducting the educational session.

Red Ribbon Club (RRC) is a voluntary on-campus intervention programme for students in educational institutions. The club is proposed to be established in every school and college to provide youth with access to information on HIV/AIDS and voluntary blood donation. The club also works towards promotion of life skills to bring about behavioural change among the youth. The activities are closely monitored by state AIDS Control societies.⁷ The Gujarat State AIDS Control Society conducted 'Training of Trainers' to provide contextual and culturally sensitive education in colleges through RRCs. One of the authors pursued the master training of HIV/AIDS in December 2009 by Gujarat State AIDS Control Society at Ahmadabad. All sessions were conducted by the author trained as master trainer in a standardized way in the four colleges based on master training under Red Ribbon Club program.

Educational intervention session was conducted for two hours comprising of power point presentation, group discussion and different games. It was followed by 'question-answer session' to address participant's pertinent and contextual queries. The students were administered a knowledge and attitudes questionnaire before and after the educational intervention. The students responded to the questionnaires anonymously.

A pre-tested structured proforma based on Adolescent AIDS Knowledge Scale was used to assess the knowledge & perceptions regarding HIV/AIDS.⁸ Pilot testing of proforma was done by using it among other college students during HIV/AIDS education program. The proforma had 23 items. First fourteen questions were related to HIV/AIDS knowledge like modes of HIV transmission (e.g., sexual transmission), low or no-risk behaviours (e.g., sharing household utensils), transmission of human immunodeficiency virus (HIV) without clinical AIDS, availability of HIV testing and treatment facilities etc. Last nine questions were related to their perceptions and attitudes. For examples, people who lead immoral life will get HIV, if someone tested positive, with whom person should share, HIV protection measures like use of condom and HIV testing (if exposed to any high risk condition). Principal Investigator had received master training on HIV/AIDS education conducted by Gujarat State AIDS Control Society in 2009.

The study was conducted over a period of 3 months from 1st December 2013 to 31st March 2014. It was approved by Human and Research Ethical committee of HM Patel Centre for Medical Care and Education.

For calculating the knowledge score (14 questions), 1 mark was awarded for every correct response.

The impact of the educational intervention was assessed by comparing total knowledge score before and after the intervention. As the students responded anonymously, independent sample t-test rather than paired t-test was applied. Descriptive statistics [mean(SD), frequency(%)] were used to depict the characteristics of the study population as well as the perceptions and attitudes of the participants. The analysis was performed using STATA (14.2).

RESULTS

A total of 510 students [206 (40.4%) from engineering, 152(29.8%) from pharmacy, 100(19.6%) from commerce and 52(10.2%) from medical technology college] were approached. All 510 students participated. The participants have skewed gender representation in favour of females [325(63.7%) females and 185(36.3%) males]. Majority of the students (95.9%) belonged to the age group of 17-22 years. The mean(SD) age of participants was 19.11(1.81)

years. Most of the participants were from urban areas [339(66.5%)] and almost half of them were residing alone or in hostels [240(47.1%)]. The baseline knowledge score was similar across gender ($p=0.29$), but significantly higher in participants from urban areas ($p=0.002$) and engineering college ($p<0.001$).

A significant improvement in percent correct responses was noted in almost all domains related to HIV/AIDS. The mean (SD) post-test [12.78(0.93)] score was significantly higher than pre-test [8.98(2.71)] score ($p<0.001$, mean difference = -3.80, 95% CI of the difference: [-4.05, -3.54]) as shown in (Table-1). The improvement in HIV/AIDS knowledge score was similar across gender [Males: 3.83(3.16) vs. Females: 3.78(2.78)].

The perceptions were restrictive (like avoid disclosing) and solutions perceived were extreme (like banning prostitution). Linkage between HIV and immoral conduct was not highly perceived by the youth as shown in (Table-2).

Table 1: Comparison of HIV/AIDS knowledge among college students before and after an educational intervention

Domains	Pre- test Score (n=510) (%)	Post- test Score (n=510) (%)	p-value (95% CI of the difference)
Knowledge regarding modes of transmission			
Transmission through sexual intercourse	374(73.3)	510(100.0)	<0.001 (22.86, 30.54)
Transmission through blood transfusion	376(73.7)	452(88.6)	<0.001 (10.19, 19.61)
Transmission by sharing needles/syringes	429(84.1)	506(99.2)	<0.001 (11.83, 18.37)
Transmission from mother to child	381(74.6)	496(97.3)	<0.001 (18.67, 26.73)
Misconceptions regarding modes of transmission of HIV			
Transmission through sharing of toilets and bathrooms	344(67.5)	499(97.8)	<0.001 (26.04, 34.56)
Transmission through Mosquitoes bite	370(72.5)	503(98.6)	<0.001 (22.09, 30.11)
Transmission through sharing household utensils	360(70.6)	504(98.8)	<0.001 (24.13, 32.27)
Transmission by shaking hands	440(86.3)	507(99.4)	<0.001 (10.04, 16.16)
Transmission by shaking hands	370(72.5)	461(90.4)	<0.001 (13.26, 22.54)
Knowledge of HIV/AIDS, its diagnoses, treatment and prevention			
HIV and AIDS are the same disease	171(33.5)	432(84.7)	<0.001 (46.05, 56.35)
HIV disease progress can control if diagnosed in early stage	120(23.5)	146(28.6)	0.07 (-0.28, 10.48)
Availability of HIV treatment at free of cost at government hospitals	195(38.2)	483(94.7)	<0.001 (51.86, 61.14)
Confidentiality of HIV testing at ICTC centre	226(44.3)	507(99.4)	<0.001 (50.74, 59.46)
Having multiple sexual partners increases the risk of HIV transmission	423(82.9)	510(100.0)	<0.001 (13.83, 20.37)
Total Score out of 14 : mean(SD)	8.98(2.70)	12.78(0.93)	<0.001(-4.05,-3.54)

Table-2: Perceptions regarding HIV/AIDS before an education intervention

Perceptions regarding HIV/AIDS	Yes (%)	Don't Know (%)
Only people, who live immoral life, get HIV infection.	50 (9.8)	154 (30.2)
HIV infected people should be stay in isolation from community for safety of others	128 (25.1)	116 (22.7)
Banning prostitution can control the transmission of HIV infection.	207 (40.6)	182(35.8)
HIV patients should be rejected (isolated) by the community	78 (15.3)	77 (15.1)
Person with HIV infection should share his/her status with life partner	135 (26.5)	-
You will remain loyal to your partner in sexual life.	351 (68.8)	134 (26.3)
Use of condom to prevent HIV infection	374 (73.3)	127 (24.9)
If he/she will feel at risk of getting HIV, go for testing	354 (69.4)	86 (16.9)

DISCUSSION

Majority of students (>70%) were aware about major routes of HIV transmission like sexual intercourse, blood transfusion, mother to child and sharing of syringes & needles. Similar findings were noted in recent studies by Sudha Yadav et al.⁹ as well as Yazdi CA et al.¹⁰ On the contrary, older studies by P Lal et al. among senior secondary school children of Delhi¹¹ and Chatterjee C et al. among secondary school students in Kolkata reported lack of knowledge regarding major routes of HIV transmission.¹²

Unfortunately, majority of the students were not aware of exact definition of HIV and AIDS, its diagnosis and treatment options. Further appreciable fraction of students reported misconception regarding mode of transmission like sharing of toilets or bathrooms, household utensils, mosquito bite and shaking hands. It is worrying that such misconceptions reported in India¹³ and China¹⁴ almost a decade ago still prevail.

It is heartening to note the improvement in basic knowledge regarding HIV/AIDS over a decade, hopefully ascribable to joint efforts by various stakeholders. However, mean (SD) knowledge score at baseline coupled with prevailing misconceptions points towards urgent need to scale up the efforts. Despite these improvements, challenges in HIV/AIDS education especially in developing countries should not be overlooked.

In our study, Majority (77.8%) of students had a favourable attitude towards People Living with HIV/AIDS (PLWHA). Majority (79%) of the students felt that HIV positive person should be accepted and understood by community so that person doesn't feel left out because of HIV. About 75% students responded that HIV patients should continue their routine schedule as other normal individuals in society. Similar findings were observed in study conducted by P Lal et al in Delhi.¹¹ Again the studies conducted a decade ago by Chatterjee C et al in Calcutta¹² reported sensitive attitude and in contrast, SK Ganguli et al. in Maharashtra¹³ noted much insensitive attitude of students towards (PLWHA).

Only 9.8% of students perceived that people who live immoral life get HIV. While 83% students believed that the individual with multiple sexual partners is at high risk of getting HIV. 73% students were aware about the role of condom in HIV transmission prevention. Similar findings were observed in study conducted in Jamnagar by Sudha Yadav et al.⁹

Majority of students mentioned to remain loyal to their partner (69%), use of condom during sex to prevent HIV transmission (73%) and go for HIV

testing if they are at risk (70%). About 41% students believed that banning prostitution can control the transmission of HIV.

HIV/AIDS knowledge score improved significantly after the educational intervention. Impact of such programme was noted in a school-based AIDS education programme for secondary school students in Nigeria¹⁵ almost 17 years back. A recent study from South Africa not only reiterated the impact of such programme but also demonstrated its long term effect.¹⁶ Further, a review of 83 studies that measured the impact of curriculum-based sex and HIV education programs on sexual behavior and mediating factors among youth under 25 years worldwide found that two thirds of the programmes significantly improved one or more sexual behaviours.¹⁷

It should be noted that young people is not a homogeneous group and any HIV/AIDS education programme must be culturally sensitive to address personal attributes and environmental factors such as age, sex, religion, socioeconomic status, marital status and domestic arrangements etc. as described in guidance note 2014 on HIV prevention, treatment, care and support for adolescents and youth by UNAIDS.¹⁸

Scaling up the educational programme is challenging in a country like India and some innovative approaches should be sought to improve coverage of such intervention. School teachers may be involved in such activities effectively after training followed by supportive supervision. C. Mathews¹⁹ et al. demonstrated the value of teacher training and school policy formulation and also the value and importance of interventions that go beyond a sexual health agenda, focussing on broader school development to improve school functioning and school climate. Further, majority of the youth in India, does not get opportunity to pursue higher education. A community based training model as demonstrated by Deshpande K²⁰ et al. may be tried to cater to this potential vulnerable population.

The high percentage of students living alone/in hostels coupled with the fact the age of menarche has decreased worldwide, early introduction of HIV/AIDS education in youth required albeit it has to be sugar coated with the phrase like 'Health Education'.

CONCLUSIONS

A simple interactive educational intervention improved understanding of HIV/AIDS. Felt need areas of HIV/AIDS education are mode of HIV transmission, stigmatizing attitude towards HIV/AIDS people, availability of facilities for HIV

testing & treatment and preventive measures for HIV disease. The findings in the present study emphasize on comprehensive HIV/AIDS education programme among youth as early as possible.

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