



HIV/AIDS Education for Adolescents – An experiment in a rural setting in Udupi Taluk of Karnataka, India

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RESEARCH

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Abstract

Background

Among adolescents, girls are particularly vulnerable not only because they are more likely to be coerced for unprotected sex but also because they are more susceptible biologically to sexually transmitted diseases (STDs), including HIV infection. This study was carried out to determine the effectiveness of an educational intervention programme aimed at girls focusing on knowledge of and attitude to HIV/AIDS.

Method

An educational intervention study was carried out among 791 rural girls (16-19 years) randomly selected using stratified cluster sampling from coastal villages in Udupi Taluk, Karnataka, Southern India. They were educated regarding HIV/AIDS and their awareness levels were evaluated immediately and one month following intervention.

Results

Around 35-50% of the girls had misconceptions regarding the modes of transmission which significantly reduced to about 8 % after intervention (95% CI of difference in

proportion = (9.2, 17.9); $p < 0.001$). However, there was no change in their attitude regarding caring for people living with AIDS.

Conclusion

The data suggest that the educational programme can lead to a change in the knowledge of HIV/AIDS but more intensive sessions may be needed to bring about a change of attitude about caring for people with AIDS.

Key Words

Effectiveness; HIV/AIDS; Health education programme; Knowledge and attitude; Adolescents

Background

Adolescence is an important and sensitive period of one's life. World Health Organization (WHO) Expert Committee has considered adolescence as the period between 10 and 19 years, the second decade of life.¹ Adolescents comprise 20% of the world's total population with one out of every five being an adolescent². Out of 1.2 billion adolescent's worldwide, about 85% live in developing countries³. In India, there are 190 million adolescents comprising 21% of India's total population⁴.

Among adolescents, girls are particularly vulnerable to sexually transmitted infections (STIs), including HIV infection not only because they are more likely to be coerced invariably for unprotected sex than boys, but they are more susceptible biologically to sexually transmitted infections (STIs), including HIV infection⁵.

As a consequence, the risk of unwanted pregnancy, induced abortion, reproductive tract infections (RTIs) and STIs including HIV/AIDS has increased significantly for adolescents.

The factors responsible for these risks are an apparent trend of declining age at menarche, an increase in age at marriage, change in cultural values brought about by rapid socio-economic changes such as globalization, urbanization, widespread availability and use of communication



technology, high migration rates and decline in the prevalence of the extended family system. As a result, the period between sexual maturity and marriage has increased the risk of unsafe sexual behaviour⁶.

Thus, in order to lead healthy, responsible and fulfilling lives and protect themselves from reproductive health problems, youth like adults need to be knowledgeable about themselves and the people they relate to, and have access to sound information about the physical, psychological and social changes that take place through childhood and adolescence⁷.

The objectives of the study were two-fold. Firstly to assess the knowledge of adolescent girls regarding cause, transmission and prevention of STIs including HIV/AIDS. Secondly to study the effect of health education programmes in terms of improvement of knowledge and change in their attitude.

Method

Institutional ethics committee clearance was obtained to carry out this study. It was conducted among the Pre-university colleges in a coastal area of Udupi Taluk, Karnataka, Southern State in India. A stratified cluster sampling technique was employed to select the study subjects.

A total of 4,227 female students studying in 29 pre-university colleges (synonymous to 11th and 12th standard of conventional 10 + 2 schools) of Udupi Taluk in the Arts, Commerce and Science streams formed the sampling frame. Students were thus stratified into six strata based on the year of study (first or second year) and also by the course (i.e., arts, commerce and science). There were several divisions under each course conducted for the first year and second year students. Each division in a stratum was taken as a cluster. Thus the sampling frame comprised of a total of 126 clusters belonging to 29 colleges.

Expecting a dropout rate of 10% and a design effect of 2, a sample size of 391 was arrived at. However, considering the feasibility and the beneficial aspect of the study a total of 791 students were selected. It was observed in the pilot study that a cluster of 40-60 students would be suitable for the educational intervention. Hence the 791 students were formed into clusters of size 40-60, amounting to 16 clusters selected randomly selected from the 34 clusters in the sampling frame.

Willingness to participate in the study was obtained by a verbal consent from the students after explaining the objectives of the study. Care was taken to ensure privacy and confidentiality. The participants were made comfortable by maintaining anonymity in the questionnaire administered to them. The questionnaire was administered under supervision of the investigator to prevent the participants from sharing the responses.

Pre-test

A total of 791 students participated in the pre-test assessment. The pre-tested questionnaire included baseline characteristics of the study population, questions related to causation, transmission and prevention of HIV/AIDS, types of other STDs and RTIs and their symptoms and complications.

Intervention

A pilot study was conducted in a rural college to assess the knowledge of female adolescents regarding STIs including HIV/AIDS. Based on the results of the pilot study, a comprehensive health education programme was developed and tested for its feasibility, acceptability and effectiveness. The health education was delivered by the investigator for all the batches.

In the present study, the educational intervention was delivered in two sessions on two consecutive days, each of two hours duration. The first session focussed on causes, signs and symptoms, modes of transmission, misconceptions and prevention of HIV/AIDS with emphasis on abstinence. The second session included causes, signs and symptoms, modes of transmission, treatment and prevention of STIs. The sessions were through didactic lectures, use of audio visual aids such as chalk and blackboard, posters and video films followed by interaction by the participants. Students clarified their doubts during these interactive sessions.

Post-test

Evaluation was carried out immediately (post-test 1) and one month following intervention (*post-test 2*) to evaluate not only their baseline knowledge and retention of knowledge after one month of intervention but also changes in their attitudes if any.

The data was analysed using the Statistical Package for Social sciences (SPSS) Version 11. The data was analysed using proportions and percentages. Chi-square test was used to test the improvement in knowledge and change in their attitude.

Results

Of the 791 students enrolled into the study, 778 were available for immediate post-test and 779 one month following intervention for the final analysis (response rate, 98%). Majority of the students 87% of the students were in the age group of 16-17 years with a mean age of 16.47 years (Table 1). 83.4% of the students were Hindus. Majority of the parents (88.9%) of the students were literate. Almost 35% of the fathers worked as unskilled workers, while majority (71.3%) of their mothers were housewives.

Table 2 shows that during pre-test even though students had good knowledge regarding modes of transmission, they had some misconceptions about its spread and this significantly improved after the intervention ($p < 0.05$). Knowledge regarding various modes of HIV transmission such as transfusion with infected blood, use of unsterile



instruments, sharing of needles and syringes and trans-placental transmission increased significantly after intervention ($p < 0.05$).

As shown in Table 3, students had a good knowledge of risk involved in having multiple sexual partners and the advantages of avoidance of sexual intercourse during adolescence and the educational intervention further improved their knowledge. 53.4% students knew that an individual may be infected with HIV and can look and feel healthy. This significantly improved to around 94% during post-test 1 and 88.4% during post-test 2.

It was observed that students did not have knowledge regarding STI/RTI (Table 4). 79.5% students knew that AIDS is an important STI but they were ignorant about gonorrhoea and syphilis. Their knowledge increased to around 60-75% during post-test 1 and dropped down to around 40% during post-test 2. This could be due to their inability to remember these names as these are infrequently used terms in the school curriculum or in any health education programme. Knowledge regarding signs and symptoms of RTI was very low during pre-test (24-30%) However after intervention it improved to around 85% during post-test 1 ($p < 0.0001$) but dropped down to around 65-75% at post-test 2.

It was observed that there was no significant improvement regarding the attitude of students towards HIV infected patients even after intervention (table 5). Majority of the students (78.6%) felt that AIDS patients should not be socially isolated (during post test 1) which improved to 94.1% (post-test 2). But they had lot of reservations regarding looking after an AIDS patient and their attitude did not change even after intervention.

Discussion

Literature shows that there exists a gap between knowledge of HIV/AIDS prevention strategies and their practice. This reflects the need for some intra- and interpersonal dialogue among teachers and students on these issues. In the absence of a cure for AIDS, education is the most important means of preventing this infection in youth⁸.

This study has examined the effect of health education on students' knowledge and attitude regarding STDs including HIV/AIDS. Greater changes were observed regarding knowledge as compared to attitude after the intervention. It was observed that the girls had a reasonably good knowledge regarding HIV/AIDS even before intervention. This is probably due to the better literacy rate that is seen in this area in spite of being rural. The programme stressed that abstinence is the only way to guarantee protection from HIV, though adolescents need to learn ways to protect themselves.

Post test responses showed a remarkable improvement over the pre-test and this improvement can best be attributed to the educational programme. Similar observations were noted by other authors⁹⁻¹⁸. Five RCT

evaluating education programmes conducted in developing countries have demonstrated an increase in knowledge following the educational programme.

A study conducted in rural Maharashtra by Sureender S et al¹¹ revealed deficient knowledge among girls regarding HIV/AIDS, contrary to the findings of the present study. This may be because the sample consisted of students in the age group of 14-16 years^{9, 10, 12, 18, 19}.

Studies conducted in developed countries have shown that girls have a good knowledge regarding HIV/AIDS. The results of this study concur with observations of other studies which have demonstrated that health education has been effective in improving the knowledge of the adolescent girls^{13, 15}.

The suggestions of the students reflected the benefits received from the educational programme. They felt that it provided a good opportunity to equip themselves with factual information on HIV/AIDS. They suggested that schools should play a significant role in preventing HIV infection by educating the students to abstain from sexual intercourse and also adopt safer sexual practices. The students opined that health professionals would be appropriate for such educational programmes rather than their own teachers. Teachers also expressed their reservations about discussing such topics with their students. A limitation of the present study was lack of assessment of the long term effect of intervention after 3 or 6 months of intervention.

Conclusion

The results of this study suggest that health education can play a major role in improving the knowledge and attitude of the adolescent girls with reference to reproductive health including HIV/AIDS. The initiative to educate school children under the National AIDS Control programme about HIV/AIDS is a step in right direction. As evident from the present study, such measures need to be intensified to protect the health of the adolescents. Researchers can carry out studies to estimate the prevalence of STI among the adolescents and plan out studies with intervention for behavioural changes. There is a need for evolving information, education and communication strategies to focus on raising awareness on adolescent reproductive health. Family life education should be incorporated in the curriculum.

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PEER REVIEW

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CONFLICTS OF INTEREST

The authors declare that they have no competing interests.

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Nil



Tables

Table 1: Age distribution of the students

Age	No.	(%)
15 - 15 years 11mths	61	7.7
16 - 16 years 11mths	336	42.5
17 - 17 years 11mths	354	44.7
18 - 18 years 11mths	38	4.8
19 - 19 years 11mths	2	0.3
Total	791	100.0

Table 2 : Knowledge regarding transmission of HIV/AIDS

Questions	Correct Response					
	Pre-test (n=791)		Post-test 1 (n=779)		Post-test 2 (n= 778)	
	No.	%	No.	%	No.	%
AIDS spreads from one person to another by						
Contaminated food and water (no)	661	83.6	744	95.5 ^a	753	96.8
Blood transfusion (yes)	730	92.3	762	97.8 ^a	760	97.7
Sharing of needles and syringes (yes)	768	97.1	773	99.2	771	99.1
Unprotected sexual intercourse (yes)	742	93.8	764	98.1 ^a	763	98.1
Sharing of shaving blade (yes)	726	91.8	756	97.0 ^a	741	95.2
Infected mother to Baby (yes)	664	83.9	764	98.1 ^a	749	96.3
Mosquito bite (no)	520	65.7	752	96.5 ^a	717	92.2
Shaking hands (no)	673	85.1	765	98.2 ^a	762	97.9
Sharing toilets (no)	582	73.6	750	96.3 ^a	760	97.7
Sharing towels (no)	538	68.0	756	97.0 ^a	743	95.5
Sharing food/room (no)	611	77.2	765	98.2 ^a	762	97.9
Hugging/kissing (no)	425	53.7	704	90.4 ^a	704	90.5

^a Comparison of pre-test and post-test 1, post-test knowledge improved significantly (p<0.05)



Table 3: Knowledge regarding cause and prevention of HIV/AIDS

Questions	Correct Response					
	Pre-test (n=791)		Post-test 1 (n=779)		Post-test 2 (n= 778)	
	No.	%	No.	%	No.	%
AIDS is caused by (virus)	562	71.0	762	97.8 ^a	745	95.8
AIDS is a deadly disease but totally preventable (agree)	318	40.2	654	84.0 ^a	617	79.3
People who are infected with HIV/AIDS look and feel healthy (agree)	422	53.4	732	94.0 ^a	688	88.4
There is no cure for AIDS (disagree)	474	59.9	656	84.2 ^a	586	75.3
The risk of HIV/AIDS increases if one has multiple sexual partners (agree)	717	90.6	755	96.9 ^a	753	96.8
A very good reason to avoid sexual intercourse during adolescence is to prevent the risk of getting HIV/STD and pregnancy (agree)	629	79.5	736	94.5 ^a	732	94.1

^a Comparison of pre-test and post-test 1, post-test knowledge improved significantly (p<0.05)

Table 4: Knowledge regarding STDs and RTIs

Questions	Correct Response					
	Pre-test (n=791)		Post-test 1 (n=779)		Post-test 2 (n= 778)	
	No.	%	No.	%	No.	%
Enumerate 3 Important STDs						
AIDS	629	79.5	758	97.3 ^a	751	96.5
Syphilis	3	0.4	473	60.7 ^a	331	42.5
Gonorrhoea	8	1.0	590	75.7 ^a	382	49.1
Symptoms of RTIs are	273	34.5	704	90.4 ^a	630	81.0
Complications of RTIs are						
Abortions	239	30.2	668	85.8 ^a	620	79.7
Still births	189	23.9	674	86.5 ^a	577	74.2
Infertility	216	27.3	638	81.9 ^a	508	65.3

^a Comparison of pre-test and post-test 1, post-test knowledge improved significantly (p<0.05)

Table 5: Attitude towards people living with HIV/AIDS

Statements	Attitude of the students					
	Pre-test (n=791)		Post-test 1 (n=779)		Post-test 2 (n= 778)	
	No.	%	No.	%	No.	%
AIDS patients should be socially isolated (disagree)	622	78.6	733	94.1 ^a	721	92.7
Would you feel comfortable caring for someone who has AIDS (agree)	374	47.3	401	51.5	358	46.0

^a Comparison of pre-test and post-test 1, post-test attitude improved significantly (p<0.05)