A peer education example on HIV/AIDS at a high school in Ankara

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SUMMARY: Özcebe H, Akın L, Aslan D. A peer education example on HIV/AIDS at a high school in Ankara. Turk J Pediatr 2004; 46: 54-59.

Adolescence is a transition period between childhood and adulthood in which physical, sexual and psychosocial changes occur. Sexually Transmitted Infections (STI) are the most common reproductive health problems adolescents face. Peer education is a very useful method in adolescents' education, especially on risk factors and risk taking behaviors. This peer education intervention study, including two base line studies (one before and one after the intervention), was conducted in four classes of an Anatolian high school in Ankara in 2000. The aim of the study was to evaluate the success of the peer education model. There was a significant difference in the general scores of the students before (29.52; SD=4.38) and after (31.89; SD=4.96) education by peer educators (p=0.000). This study might have assisted the study population in establishing safe sex practices for a healthy sexual future.

Key words: HIV/AIDS, peer education, adolescent, Turkey.

Adolescence is a transition period between childhood and adulthood in which physical, sexual and psychosocial changes occur. Generally in developing countries, adolescents' knowledge about sexuality and methods of preventing sexually transmitted infections (STIs) is not sufficient. Therefore, young people are at high risk of STIs in the event of unsafe sex[1-3].

Sexually transmitted infections are the most common reproductive health problems adolescents face. One in every 20 teens has one STI every year, most of which remain undiagnosed, causing chronic and serious complications, whereas HIV/AIDS can have life-threatening results[4].

In Turkey, age of sexual initiation tended to be earlier, similar to in that seen other countries of the world. According to some of the studies carried out in Turkey, the age of sexual initiation was found to be around 18-20 years, and only the half of these teens was reported as using a contraceptive method[5,6]. The source of sexual information has been shown to be newspapers, magazines, books, family and friends, although the content and quality of this information was not clarified[7,8]. There has not been a purposeful, sufficient and systematic sexual education program for adolescents, who comprise one fourth of the population.

Peer education is a very useful method in adolescent education, especially on risk factors and risk taking behaviors. The previous studies which aimed to determine the knowledge of high school students on HIV/AIDS and to evaluate the success of the peer education program, nevertheless contained limited information on HIV/AIDS[9-15].

Material and Methods

The study was conducted at an Anatolian high school with 1,910 students in 24 classes in 2000. The study population consisted of eight classes and 369 second year students.

The base line study, which aimed to evaluate the knowledge of the students about HIV/AIDS, especially means of infection and of prevention, was conducted in December 2000. The questionnaire also aimed to asses students' responses by using a HIV/AIDS case. Two students, one male and one female, were selected as peer educators from each class.

An education program was scheduled every week and included the following discussion subjects: male and female anatomy-physiology of the reproductive system; types of STIs; etiopathology, progress and treatment of HIV/AIDS; preventive precautions against sexually

transmitted diseases and HIV/AIDS; family planning methods; and communication skills. The researchers gave the prepared texts to the peer educators one week before the discussion.

One male and one female researcher trained peer educators through lectures and by moderating discussions together. After a basic training of 10 weeks, the peer educators discussed and organized their activities. They prepared several posters about the situation of HIV/AIDS in the world, the symptoms of AIDS, means of infection and of prevention of the disease, and the feelings of the patients with AIDS, etc. These posters were placed on billboards in the school corridors.

Every peer educator voluntarily prepared at least one poster on HIV/AIDS and they changed the posters every week. The peer educators gave some short presentations on HIV/AIDS in the classrooms and they had small group discussions on HIV/AIDS with their classmates.

After the peer educators' activities, the second base line study was carried out. The questionnaire used in this study was the same as the one used in the previous study. Four of the eight classes were chosen as samples. The same students participated both in the first and the second base line studies. The maximum knowledge score that a student could receive was 35. The statistical test for paired groups was used in analysis.

There were 148 students interviewed in the first and second base line studies (total 296).

The distribution of the students by class, sex and age is shown in Table I. Of the 148 students, 54.1% were female and 45.9% male. The median age was 16 years (83.8% were 16 years old).

Table I. Students by Age, Sex and Class (June, 2001)

	Number	%
Classes		
Science A	27	18.2
Science E	43	29.1
Math B	41	27.7
Math C	37	25.0
Sex		
Female	80	54.1
Male	68	45.9
Age		
15	17	11.5
16	124	83.8
17	7	4.7
Total	148	100.0

The mean score of the students on HIV/AIDS (31.89±4.96) in the second base line study was higher than their mean score in the first base line study (29.52±4.38), and there was a statistical difference between the two studies. A statistical difference was found both between sexes and between classes (Table II).

Table II. Students' Scores on HIV/AIDS Before and After Peer Education (December 2000-June 2001)

Parameters	Scores of knowledge		P*
	First base line study	Second base line study	
Total score	29.52 (SD=4.38)	31.89 (SD=4.96)	0.000
Sex			
Female	29.78 (SD=4.30)	31.72 (SD=4.99)	0.002
Male	29.21 (SD=4.47)	32.07 (SD=4.96)	0.000
Classes			
Science A	29.88 (SD=4.55)	32.34 (SD=4.51)	0.020
Science E	29.73 (SD=4.37)	31.53 (SD=4.59)	0.020
Math B	30.41 (SD=3.73)	32.91 (SD=4.31)	0.000
Math C	28.18 (SD=4.73)	30.97 (SD=6.10)	0.000
Poster			
Read	29.48 (SD=4.48)	31.88 (SD=5.84)	0.000
Did not read	29.96 (SD=4.03)	32.15 (SD=4.10)	0.000
Short class presentation			
Yes	29.66 (SD=4.46)	31.84 (SD=5.62)	0.000
No	29.66 (SD=4.11)	32.06 (SD=4.46)	0.000
Small group discussion			
Yes	30.02 (SD=4.01)	32.20 (SD=5.38)	0.000
No	28.75 (SD=4.58)	31.34 (SD=4.32	0.000
Self assessment of the students about their knowledge on AIDS			
Good	30.34 (SD=3.37)	33.72 (SD=3.52)	0.000
Mediocre	30.29 (SD=3.79)	32.64 (SD=4.18)	0.000
Inefficient	26.71 (SD=5.42)	27.92 (SD=6.12)	0.300

* The statistical test for paired groups was used for analysis (n=140).

The peer educators actively conveyed their knowledge about various issues regarding HIV/AIDS such as characteristics, route of transmission and preventive methods of the diseases by presenting posters on the billboard in the school, giving lectures in their classrooms, and through discussions among their peer group. Table III summarizes the means by which students received information. Only 37.8% of the students stated that they had read the posters prepared by the peer educators whereas the others said that they had never seen any poster at the school. More than half of the students (58.1%) participated in small group discussion.

Table III. Means by Which Information on HIV/AIDS was Conveyed According to the Students (June, 2001)

	Number (n=148)	%
Read the posters	56	37.8
Contributed to the small group discussion	86	58.1
Listened to the short class presentations	40	27.0

The topics of the billboards and small group discussions as recalled by the students are given in Table IV. Among the students who read the posters, 75.0% mentioned that they had read the characteristics of AIDS and 87.5% recalled reading about the means of transmission. Students participating in small group discussions on HIV/AIDS with the peer educators accounted for 58.1% of the study group. The topics found more interesting were means of (80.3%) and prevention methods (62.8%). Twenty-seven percent of the students mentioned that they had listened to the short class presentations given by peer educators. 80.3% of them indicated that the topic was on means of transmission, and 62.8% of the students underlined prevention methods; 24.0% expressed means of transmission as the most interesting topic.

It is noteworthy that the percentage of family members, friends and magazines mentioned as a source of information on HIV/AIDS declined after the intervention, while the frequency of teacher and school sessions increased (Table V). In addition, 41.1% of the participants mentioned the AIDS club, 20.3% mentioned the girl peer educator and 21.9% mentioned the boy peer educator in their class.

Table IV. Topics of the Billboards and Small Group Discussions as Recalled by the Students (June, 2001)

Billboards	(n=56)
Characteristics of HIV	57.1
Characteristics of AIDS	75.0
Means of transmission of AIDS	87.5
Preventive measures against AIDS	87.5
Behavior and attitudes against AIDS patients	53.6
Small Group Discussions	**(n=86)**
Characteristics of HIV	19.7
Characteristics of AIDS	52.3
Means of transmission of AIDS	80.3
Preventive measures against AIDS	62.8
Behavior and attitudes against AIDS patients	37.2

Table V. Sources of Information on HIV/AIDS (December 2000-June, 2001)

Source of information	First Base Line study (n=140)* %	Second Base Line study (n=148) %
Mother-Father	37.1	39.1
Sister	5.0	5.7
Brother	5.1	5.7
Radio, TV	88.5	70.3
Newspaper-magazine	86.4	80.7
Book	41.4	38.0
Computer-Internet	31.5	31.4
School classes	25.0	45.3
Teacher	8.2	27.6
Health personnel	17.1	27.6
Girlfriend	18.5	21.4
Boyfriend	18.3	21.4
The AIDS club of the school	—	41.1
Girl peer educator in the class	—	20.3
Boy peer educator in the class	—	21.9

* Some students did not answer this question.

Discussion

Today, there are nearly 35 million HIV/AIDS cases in the world. By now 18.8 million people around the world have died of AIDS and 3.8 million of these were children. In 1999, alone, 5.4 million people were infected with HIV. It is estimated that there are 420,000 AIDS cases in Eastern Europe and Middle Asia, and 220,000 cases in the Middle East and North Africa[16]. Worldwide, the HIV epidemic is spreading at a rate of over 6,000 new infections per day. Data show a steady rise in HIV rates among those 13 to 19 years of age. Approximately three

million teenagers contract a sexually transmitted disease (STD) each year, and teens account for one quarter of the 12 million STD cases estimated annually. Roughly 25% of sexually active adolescents become infected with an STD every year[17].

In Turkey, there have been 1,325 cases reported to the Ministry of Health since the first case in 1985. The numbers of HIV/AIDS cases have been continuously increasing, and the epidemiology of HIV/AIDS changing. The percentage of young people with HIV has increased in the last 10 years[18]. Also, there is some evidence from recent studies that the age at first sexual intercourse is decreasing. According to the local studies, the age of sexual initiation is around 18-20 years, and only half of the teens in Turkey reported that they had used a contraceptive method[5,7,19]. According to the Turkish Demographic and Health Survey, almost one-third of husbands aged 25-29 had begun to have intercourse by the age of 18. It is obvious that there is an increase in the frequency of sexually active people among youth compared to their older cohorts[20].

In most of the previous studies, it was emphasized that high school and university students have limited knowledge about HIV/AIDS and STDs[21-26]. The source of sexual information has been mentioned as newspapers, magazines, books, family and friends, although the content and quality of this information was not clarified[7,8]. In Turkey, there has not been a purposeful, sufficient and systematic sexual education program for adolescents, who comprise one fourth of the population. Therefore, improvement in their correct knowledge and development of safe sex practices against STDs and AIDS through intervention studies are required.

The peer education model is not a new approach. It has been applied toward various topics for years. Recently, it has been used for protecting adolescents from STIs, especially HIV/AIDS. Furthermore, it has been used to inform high school and university students on some important health topics, including sexual health, by NGOs in Turkey[27].

In this study, peer group education was used to improve the knowledge of high school students about HIV/AIDS. The results were successful and encouraging. Most of the students who thought that their level of knowledge was insufficient received higher scores after the peer education intervention.

Peer education has been used widely and very effectively in the developed countries; the results of the studies show that the peer education model is successful, and peers enjoy learning from each other in school-based studies[9-15]. Also, the peer educators were found to be more successful than adult trainers in some studies.

All peer educators prepared billboards; some organized short class presentations and some had conversations with their friends about HIV/AIDS. They stated that their friends were eager to learn about HIV/AIDS. The most interesting topic was mentioned as means of prevention. Although family planning methods were not included in the curriculum of the intervention program, the students expected to hear more about "safe sex". In the routine curriculum of high school students in the first grade, there is only one session regarding health topics so important during their lives. This session should be expanded to cover the areas where the students have insufficient information.

The scores of the students who read the billboards about HIV/AIDS versus those who did not were found significantly different. Similar findings were valid for the groups who participated in the other activities compared to the ones who did not. The number of the students who did not participate in any type of activity was 25. There was also a statistically significant difference between the scores of these students in the two base line studies. There might have been an information bias where in students did not give correct information about their activities. It can be assumed that there were discussions on these subjects between the students. Mere physical presence at school was sufficient for a student to obtain information on HIV/AIDS.

Although students declared television, radio and magazines as the sources of information in both of the studies, AIDS club, teachers and discussion sessions were more emphasized as the source in the second study. Nevertheless, as there was no official lecture about HIV/AIDS in the second year high school program, this intervention most likely raised students and teachers' attention to HIV/AIDS. In the education system the teachers are not only

lecturers on specific topics but they may be also a guide or a counselor for the students on various issues. This study demonstrated that teachers could play a role as a resource for students in establishing healthy life styles, such as prevention from acquiring STI/HIV.

Lack of a control group is a limitation for this study. We had no control group for ethical reasons. The intervention in this study was planned to improve adolescent students' sexual health status. During the intervention period, there was no other special program on this issue except the peer education program. It was not ethical to not inform a subject of the students on HIV/AIDS, as the information might protect them from the disease. The results seem to confirm that the peer education program caused the statistical difference between the scores of the students in first and second base line studies.

Another and probably more important limitation of the study was the absence of information about the sexual practice of the participants. However, high school students in metropolitan areas may have sexual intercourse before 17 years, as mentioned in some local studies. The most important objective of the peer education is to encourage and establish correct behavior, using condoms during sexual intercourse. It is very important to support safe sex practices among young people to have a healthy generation in the future. The results of numerous peer education studies have stated that peer education was also successful in changing teens' behaviors safely[28-30].

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