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Using Peer-based Education to Increase the Knowledge Level of Vocational High Students About Sexually Transmitted Diseases

Meslek Lisesi Öğrencilerinin Akran Temelli Eğitim ile Cinsel Yolla Bulaşan Hastalıklar Hakkındaki Bilgi Düzeyinin Artırılması

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ABSTRACT

Introduction: Sexually transmitted diseases (STDs) are one of the major health problems affecting especially young people. While the number of newly infected cases with human immunodeficiency virus (HIV), one of the STDs, is decreasing all over the world, unfortunately, it continues to increase in Turkey. Therefore, it is important to educate young people on this topic through effective methodologies. The aim of this semi-experimental study was to evaluate the effectiveness of peer-based education on increasing the knowledge levels of vocational high school students about STDs.

Methods: In this study, a peer-based training was provided to 2000 volunteer vocational high school students. Pre- and post-test questionnaire forms prepared by the researchers were filled by the students before and after the training. Of the 2000 volunteer students, the data of 620 students who completed the questionnaire forms were evaluated.

Results: The average age of the participants was 16.58±1.01 years and 61.4% of them were female, of which, 14.5% were in the 9th grade, 46.0% in the 10th, 26.5% in the 11th and 13.1% in the 12th. Moreover, 67.4% of them had not received any education on STDs before. A meaningful relationship was found between the results of the pre- and post-tests applied to the students, and the provided training was proven effective in increasing the students' knowledge levels.

Conclusion: The results of this study showed that a peer-based education model can be effective in raising awareness about STDs among youth and in creating a positive behavioural change in them.

Keywords: Sexually transmitted diseases, peer-based education, adolescence

ÖZ

Amaç: Cinsel yolla bulaşan hastalıklar (CYBH) özellikle gençleri etkileyen önemli sağlık sorunlarından biridir. CYBH'den biri olan insan bağışıklık yetmezliği virüsü (HIV) ile yeni enfekte sayısı tüm dünyada azalırken, ne yazık ki ülkemizde artmaya devam etmektedir. Bu nedenle gençleri etkili yöntemlerle eğitmek çok önemlidir. Bu yarı deneysel çalışmanın amacı, akran temelli eğitimin meslek lisesi öğrencilerinin cinsel yolla bulaşan hastalıklar konusundaki bilgi düzeylerini artırmadaki etkinliğini değerlendirmektir.

Yöntemler: Bu çalışmada, gönüllü 2000 meslek lisesi öğrencisine akran temelli eğitim verilmiştir. Araştırmacılar tarafından hazırlanan ön test ve son test soru formu, öğrencilere eğitim öncesi ve sonrasında uygulanmıştır. Veriler toplandıktan sonra, anket formunu dolduran 620 öğrencinin verileri değerlendirmeye alınmıştır.

Bulgular: Araştırmaya katılan öğrencilerin yaş ortalaması 16,58±1,01 olup, %61,4'ünün kız, %14,5'inin 9. sınıf, %46,0'ının 10. sınıf, %26,5'inin 11. sınıf ve %13,1'inin 12. sınıfta olduğu, %67,4'ünün cinsel yolla bulaşan hastalıklar konusunda daha önce hiç eğitim almadığı belirlenmiştir. Öğrencilere uygulanan ön test ve son test arasında anlamlı bir ilişki bulunmuş ve verilen eğitimin öğrencilerin bilgi düzeylerini artırmada etkili olduğu saptanmıştır.

Sonuç: Çalışma sonuçlarımız akran temelli eğitim modelinin gençlerin cinsel yolla bulaşan hastalıklar hakkındaki bilgi düzeyinin artırılmasında ve gençlerde olumlu davranış değişikliği oluşturulmasında yararlı olduğunu göstermektedir.

Anahtar Kelimeler: Cinsel yolla bulaşan hastalıklar, akran temelli eğitim, adölesan

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Introduction

Adolescence is an important transitional period between childhood and adulthood, when the growth and development of a child is swift and the cognitive and psychosocial developments commence (1,2). In Turkey, according to the 2018 Address-based Population Registration System results, out of the total population of 81,867,223, 12,725,029 people were found to fall within the age group of 10-19 years and 6,402,806 within the 15-19 years (3). Adolescents comprise about one-sixth of the world's total population and about one-fifth of Turkey's. They are an important part of society and are most affected by any social reform or change; however, no special attention on any such accounts is paid to them (4).

The physiological and psychological changes during this transitional period can lead to behavioural changes and cause psychosocial problems among adolescents. Adolescents naturally desire to be independent and seek new environments for themselves, and in doing so, they emotionally distance themselves away from their family. This situation can bring many problems together with new experiences. Some of the common risky behaviours observed among adolescents are substance use, sexually transmitted diseases (STDs), accidents, suicides, violence and adolescent pregnancies (5).

The theme of the World Population Day 2014 was set as "Investing in Young People" by the United Nations Population Fund. And drawing attention to the sexual and reproductive health of adolescents, they stated that very little progress was made in preventing adolescent pregnancies, unsafe abortion, mother deaths, STDs and human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS), and that there are important deficiencies about access to comprehensive sexual education and services and about the quality and availability of this education and these services for the young (6).

STDs are one of the most common and dangerous among infectious diseases. The most frequent STDs are gonorrhoea, syphilis, chlamydia, genital herpes, hepatitis B and HIV/AIDS. According to the WHO data, more than one million people are infected by STDs daily. Each year, 357 million new infections occur with one of the four STDs (chlamydia, gonorrhoea, syphilis and trichomoniasis); besides that, more than 500 million people have genital herpes simplex virus (HSV), and more than 290 million women have human papilloma virus (HPV) infection (7).

According to the United Nations Programme on HIV/AIDS, 36.9 million people were predicted to have HIV/AIDS in 2017; of those, 35.1 million were adults and 1.8 million were children aged under 15. People newly infected with HIV were 1.8 million in 2016, and about 940,000 people died of AIDS and AIDS-related diseases in the same year (8). While newly infected HIV/AIDS cases decrease worldwide, the number continues to rise in Turkey (9).

The insufficiency of sexual education curriculum at schools, unavailability of education to those who do not/cannot go to school, sexuality being regarded as a taboo because of sociocultural reasons, sexuality going down to early age and not knowing about or/and not applying the protection methods are some of the reasons that lead to the risky behaviours observed among adolescents in our country (10). These negligent behaviours pose a risk to their lives in terms of HIV infections and other STDs via unprotected sex or intravenous drug use. This is why educating the youth at high school age about the types of STDs and the precautions to take and using a peer-based education to do so are important. Peer education-based on social learning theory-is established on the fact that young people interact with their peers and identify with each other (11). The classical education is generally teacher-centred, where knowledge is one-way process from the educator to the student. On the other hand, in the peer education, children use similar language and influence each other creating a more positive and interactive learning environment (12). Therefore, in our study, we aimed to determine the effect of peer-based education on the knowledge levels of students about STDs.

Although, in recent years, much awareness on the topic has been created through social media, sexuality and related topics are still regarded as taboo and are not given place in education, yielding the awareness attempts on the topic so far as inadequate. Since STDs affect the age group of 15-24 the most, educating young people is especially important. However, the fact that young people do not have sufficient information about STDs at that age, that they do not obtain information from right sources and that they are misinformed cause difficulties in fighting against these diseases. It was identified through different studies in our country that students have insufficient information about STDs, and that they do not want to get information about STDs (13-17).

Mersin is a cosmopolitan tourist city with high migration rate and has been exposed to sociocultural changes since a long time. In our country, vocational high school students settle in schools with the lowest grades and their education includes mostly vocational knowledge. These students, who have more free time, are at risk for substance use and STDs. The results of our former study on this group showed that students do not have sufficient information about STDs.

Methods

This study was conducted semi-experimentally using the pre- and post-test forms in order to determine the effect of peer-based education on students' level of knowledge about STDs. A total of 20,961 students studying between the 9th and the 12th grade of 22 vocational high schools were included in this study. The sample consisted of 2,000 students selected from these vocational high schools through random sampling method. Before starting to work, ethical approval was obtained from the Clinical Research Ethics Committee of Mersin University and the other necessary permissions (governorship approval, ministry of education permission slip) were taken from related institutions.

In the first stage of the study, all 2,000 students were asked to fill a questionnaire in order to determine their level of knowledge about STDs. After that, the structure of the peer-based education, including the modes of transmission, their symptoms and prevention, was planned. Then, the educational materials (power point presentation, brochure, etc) were prepared.

In the second stage, approximately 50 university students were trained by specialists about STDs. These university students (peers) were mostly nursing department students at a university or students of other faculties who had taken lessons on STDs before.

In the third stage, a peer-based training about STDs was given to the 2,000 participating high school students by the 50 university students under the leadership of 16 researchers. Peer-based trainings on STDs were delivered in a 45 mins-long single session to groups of 20-50 students in the conference halls of the schools. Data were collected using the pre- and post-test forms prepared by the researchers. Students were asked to fill the pre-test form before and post-test form after the session. In addition, at the end of the session, students were given leaflets with information about STDs. Descriptive characteristics information form and STDs information form, prepared by the researchers in line with the literature, were used for data collection. The demographic information form included questions about the students' age, gender, school, department, and class. The STDs information form included questions about STDs, the modes of transmission of the diseases, symptoms and consequences, treatment and prevention. There were 51 questions in the survey together with their subgroups.

Finally, after the data were collected, the data of only 620 students who completed the questionnaire forms were evaluated. The data obtained were analysed using a statistics package program in computer environment. Percentage, arithmetic mean, standard deviation values, and chi-square test were used for data analysis. The results were evaluated as between 95% confidence interval and $p<0.05$ was considered as significant.

Results

The average age of the students was 16.58±1.01 years and 61.5% of them were female, of which 14.5% were in the 9th grade, 46.0% in the 10th, 26.6% in the 11th and 12.9% in the 12th. Department wise, 20.6% of the students were in child development, 20.2% in accounting, 9.2% in graphics, 8.1% in electrics-electronics and less in other departments; 67.4% of the students stated that they had not received any education about STDs.

When the pre- and post-test results of the knowledge of the students about STDs was compared, it was found that there was a statistically significant difference between before and after the education, and that the knowledge level about STDs increased after the education. The increase in the number of students who were aware of HIV/AIDS, hepatitis B, hepatitis C, syphilis, trichomoniasis and others as forms of STDs after the education was found to be statistically significant ($p<0.05$). Likewise, the number of students who knew about the different modes of transmission of STDs before and after the training increased significantly ($p<0.05$) (Table 1).

Table 1. Comparison of the pre- and post-test results of the knowledge of the students regarding the different modes of transmissions of STDs

	Pre-test n %		Post-test n %		p
Transmission through sexual intercourse					
Yes	533	86.1	578	93.8	0.001
No	11	1.8	12	1.9	
Do not know	75	12.1	26	4.2	
Transmission through cheek kissing					
Yes	148	23.9	229	37.0	0.001
No	295	47.7	335	54.1	
Do not know	175	28.3	55	8.9	
Transmission through respiration					
Yes	263	42.7	295	47.7	0.001
No	170	27.6	249	40.0	
Do not know	183	29.7	76	12.3	
Transmission through some commonly used tools (injector, razor, manicure set, etc)					
Yes	395	63.9	471	76.2	0.001
No	72	11.7	79	12.8	
Do not know	151	24.4	68	11.0	
Transmission from mother to baby during pregnancy and breastfeeding					
Yes	299	48.2	469	75.8	0.001
No	116	18.7	76	12.3	
Do not know	204	33.0	74	12.0	
Transmission through blood and organ transfusion (HIV/AIDS, hepatitis B/C)					
Yes	285	36.6	473	76.3	0.001
No	60	14.4	58	9.4	
Do not know	304	49.0	89	14.4	
Total	620	100	620	100	

p: chi-square test was used, HIV/AIDS: human immunodeficiency virus/acquired immune deficiency syndrome, STDs: sexually transmitted diseases

When the knowledge levels of students regarding the symptoms and results of STDs before and after the training were compared, it was found that their knowledge levels increased significantly after the training ($p<0.05$) (Table 2).

When the knowledge levels of students regarding the treatment of STDs before and after the training were compared, it was found that their knowledge levels increased significantly after the training ($p<0.05$) (Table 3).

As shown in Table 4, when the knowledge levels of the students related to the precautions to be taken to protect themselves against STDs before and after the training were compared, it was found that the increase in the knowledge levels after the test was statistically significant ($p<0.05$).

Table 5 shows the knowledge levels of students about vaccination against STDs before and after the training, and it was found that the increase in the knowledge levels after the training was statistically significant ($p<0.05$).

Discussion

The biggest risk that unsafe sexual life can bring is an STD. Protection is the most essential step in prevention of STDs. However, this can only be achieved if the younger population is educated on the issue and has a positive outlook towards using protection. While there are many methods of imparting education, peer-based education can be particularly effective in societies where STD is considered as a taboo. In our study, the effect of peer-based education on the knowledge levels of vocational high school students about STD was researched.

Students' knowledge on the different types of STDs increased significantly after the peer-based training. While trichomoniasis (16.5%) and Chlamydia infections (18.7%) and gonorrhoea (27.9%) were among the least known STDs before the training, a significant rise was seen in these rates after the training. Similarly, in a study of nursing school first grade students by Aşcı et al. (17), it was found that the rate of defining STDs among the risks sexual life can bring increased significantly among the participants after a peer-based training. While the rate of students viewing STDs as a risk was 67.2% before the education, it increased to 87.9% after the education. In the same study, the rate of those who knew the names of STDs other than HPV, HSV, Chlamydia and Trichomonas infections increased after the training. Furthermore, in a study by Jones et al. (18) with university students including nursing school students in the United States, an increase in the knowledge level of students about STDs was determined after a peer-based training. Also, in several other studies with university and high school students, a significant difference was found in the knowledge levels of students about STDs before and after peer-based education (19-22).

After the literature review, it was found that the studies conducted in many different countries concentrated mostly on HIV/AIDS, and that peer-based education interventions were done (23-29). A Malaysian research among medical and health school students studied the effect of peer-based education on the knowledge, attitude and risky health

Table 2. Comparison of the pre- and post-test results of the knowledge of students about the symptoms and results of STDs

	Pre-test n %		Post-test n %		p
May cause stinky secretion in sexual organs					
Yes	403	65.3	537	86.9	0.001
No	17	2.8	11	1.8	
Do not know	197	31.9	70	11.3	
May cause pain in groins					
Yes	384	62.1	518	83.8	0.001
No	19	3.1	30	4.9	
Do not know	215	34.8	70	11.3	
May cause infertility					
Yes	307	49.8	492	79.9	0.001
No	31	5.0	25	4.1	
Do not know	279	45.2	99	16.1	
May cause premature births/abortions					
Yes	315	50.9	498	80.7	0.001
No	28	4.5	36	5.8	
Do not know	276	44.6	83	13.5	
May cause death					
Yes	340	54.9	509	82.5	0.001
No	27	4.4	29	4.7	
Do not know	252	40.7	79	12.8	
Total	620	100	620	100	

p: chi-square test was used, STDs: sexually transmitted diseases

Table 3. Comparison of the pre- and post-test results of the knowledge of students about the treatment of STDs

	Pre-test		Post-test		p
	n	%	n	%	
HIV/AIDS					
Has treatment	170	27.6	217	35.6	0.001
Does not have treatment	164	26.7	297	48.7	
Do not know	281	45.7	96	15.7	
Hepatitis B					
Has treatment	218	35.4	260	42.8	0.001
Does not have treatment	82	13.3	246	40.5	
Do not know	316	51.3	101	16.6	
Hepatitis C					
Has treatment	172	28.1	245	40.4	0.001
Does not have treatment	77	12.6	237	39.0	
Do not know	364	59.4	125	20.6	
Syphilis					
Has treatment	104	17.0	291	47.8	0.001
Does not have treatment	54	8.8	119	19.5	
Do not know	453	74.1	199	32.7	
Trichomoniasis					
Has treatment	81	13.7	217	35.7	0.001
Does not have treatment	37	6.0	102	16.8	
Do not know	94.4	80.7	289	47.5	
Gonorrhoea					
Has treatment	138	22.3	293	47.3	0.001
Does not have treatment	45	7.3	102	16.5	
Do not know	429	69.2	213	34.4	
Genital wart (HPV)					
Has treatment	135	21.8	274	44.2	0.018
Does not have treatment	49	7.9	129	20.8	
Do not know	429	69.2	206	33.8	
Genital herpes					
Has treatment	141	22.7	269	43.4	0.001
Does not have treatment	47	7.6	102	16.5	
Do not know	425	68.5	238	38.4	
Chlamydia					
Has treatment	81	13.1	217	35.0	0.040
Does not have treatment	37	6.0	102	16.5	
Do not know	434	79.7	289	46.6	
Total	620	100	620	100	

p: chi-square test was used, HIV/AIDS: human immunodeficiency virus/acquired immune deficiency syndrome, STDs: sexually transmitted diseases, HPV: human papilloma virus

behaviours related to HIV, and it was found that the knowledge level of the group who received the education increased significantly compared to the control group (26). In the study of Jahanfar et al. (24), an increase in the knowledge level of the group that was given peer-based education about HIV/AIDS was found. In similar studies in Iran, after the peer-based education was given to adolescents, knowledge and attitude points of the group receiving the training on HIV/AIDS were found to increase significantly compared to the control group (27,28,30). In randomly controlled studies of Bulduk and Erdogan (31) and Calloway et al. (23), a significant increase in the HIV/AIDS knowledge levels of the group that received the training was detected.

In our study, when the knowledge levels of the students related to the modes of transmissions of STDs before and after the peer-based training was compared, the knowledge levels of students was found

Table 4. Comparison of the pre- and post-test results of the knowledge of students about the precautions to be taken against transmitted STDs

	Pre-test		Post-test		p
	n	%	n	%	
Maintaining monogamy in sexual intercourse					
Yes	301	48.5	488	79.3	0.001
No	48	7.7	37	6.0	
Do not know	271	43.7	90	14.6	
Using condom					
Yes	225	36.3	473	77.0	0.001
No	65	10.5	36	5.9	
Do not know	329	53.2	105	17.1	
Avoiding intercourse with risky people (sex workers, homosexuals)					
Yes	347	56.1	505	82.4	0.001
No	31	5.0	25	4.1	
Do not know	241	38.9	83	13.5	
Avoiding common use of tools like razor, injector, nail clipper					
Yes	386	62.7	487	79.4	0.001
No	38	6.1	46	7.5	
Do not know	195	31.5	80	13.1	
Total	620	100	620	100	

p: chi-square test was used, STDs: sexually transmitted diseases

to increase after the training ($p<0.05$). This finding matches to similar studies conducted by using peer-based education (17,22). The results obtained from our study also matches with similar studies conducted by using peer-based education (15,18). In Aşçı et al. (17) study, the number of students knowing modes of STD transmission other than vaginal intercourse increased significantly when compared with before the education. In the study of Ali et al. (29) in Sudan, the rate of the correct answer given to the question of modes of transmission of HIV increased after the peer-based education from 75.5% to 83.2%.

When the knowledge levels of students related to the symptoms and results of STDs in our study were examined, it was seen that the knowledge levels of students related to the symptoms and results of STDs increased after receiving the training. Similarly, in the study of Aşcı et al. (17), the number of students knowing the symptoms of STDs was found to increase significantly after the education compared to before the education, and the difference was found to be statistically significant.

In our study, the knowledge levels of students related to the precautions that should be taken to be protected from STDs increased significantly after the education. In the study of Kırmızıtoprak and Şimşek (22) with young people, the answers given about safe sexual intercourse as avoiding sexual intercourse, monogamy and condom usage in protection from STDs changed positively after the peer-based education. While 77%-79.9% of students did not know the precautions stated before the education, the rate of students who did not know decreased to 4.7%-6.1% after the education. In the same study, the rate of students who knew condom as the most reliable method increased significantly after the education from 31% to 60.3%. In a study by Miller et al. (25) in Kenya with university students, a significant decrease in the number of students stating that condom use is not safe in protection from HIV was detected after a peer-based education. In another study, the rate of correct answers given by students with respect to having more than one sexual partner would increase HIV/AIDS risk increased from 47.5% to 83.5% after receiving the peer-based education (29). In the study of Adeomi et al. (32), while the rate of the correct answers about the ways of protection from AIDS showed an increase in the group who was given education, the same result was not seen in the control group.

In our study, the knowledge levels of students about vaccination and treatment of STDs increased after receiving the education. In comparison of the before and after the education, a statistically meaningful difference was observed. Similar to our study, in the study of Adeomi et al. (32), the knowledge level of students about the treatment of AIDS increased compared to the control group after the education.

However, like every study, there are some limitations to this study. The study was conducted only in vocational high schools in Mersin and included students who were present in the school on the day of training and volunteered to participate in the research. Due to the large number of students and the problem of time, all students could not be reached to check the pre- and post-test forms.

Table 5. Comparison of the pre- and post-test results of the knowledge of students about the vaccination against STDs

	Pre-test		Post-test		p
	n	%	n	%	
HIV/AIDS					
Has vaccination	144	23.8	202	34.9	0.001
Does not have vaccination	79	13.1	198	34.3	
Do not know	381	63.1	178	30.8	
Hepatitis B					
Has vaccination	203	33.6	370	63.4	0.001
Does not have vaccination	43	7.1	77	13.2	
Do not know	358	59.3	137	25.5	
Hepatitis C					
Has vaccination	164	27.2	229	39.4	0.001
Does not have vaccination	46	7.6	164	28.2	
Do not know	393	65.2	188	32.4	
Syphilis					
Has vaccination	74	12.2	150	25.8	0.001
Does not have vaccination	38	6.3	153	26.3	
Do not know	493	81.5	278	47.8	
Trichomoniasis					
Has vaccination	41	6.8	126	21.7	0.001
Does not have vaccination	45	7.4	135	23.3	
Do not know	519	85.8	319	55.0	
Gonorrhoea					
Has vaccination	75	12.1	138	22.3	0.001
Does not have vaccination	46	7.4	151	24.4	
Do not know	486	78.4	290	46.8	
Genital wart (HPV)					
Has vaccination	83	13.4	203	32.7	0.018
Does not have vaccination	50	8.1	119	19.2	
Do not know	473	76.3	261	42.1	
Genital herpes					
Has vaccination	62	10.0	139	22.4	0.001
Does not have vaccination	57	9.2	143	23.1	
Do not know	489	78.9	298	48.1	
Chlamydia					
Has vaccination	49	7.9	129	20.8	0.001
Does not have vaccination	38	6.1	138	22.3	
Do not know	519	83.7	315	50.3	
Total	620	100	620	100	

p: chi-square test was used, HIV/AIDS: human immunodeficiency virus/acquired immune deficiency syndrome, HPV: human papilloma virus, STDs: sexually transmitted diseases

Conclusion

In our study, the increase in the knowledge levels of knowing the names of STDs, their symptoms and results, vaccination and treatment after the education shows that the young people do not have sufficient information related to STDs, and that the peer-based education is efficient. Especially among adolescents, who are generally under the influence of their peers in many ways including in terms of positive and negative health behaviours. Young people tend to obtain and share information about sexual health-one of the taboo topics in our society from and among individuals who are in a similar developmental stage as them (22). This is why peer-based education, where they can have comfortable sharing without being judged that can enable their knowledge levels about STDs, is an educational approach that has

been frequently used in recent times (19). We believe that peer-based education model would be beneficial in educating young people about STDs and in creating positive behavioural changes in them. It would be useful to implement and spread peer-based training in schools to prevent HIV/AIDS and STDs.

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Ethics

Ethics Committee Approval: Ethical approval was obtained from the Clinical Research Ethics Committee of Mersin University and the other necessary permissions (governorship approval, ministry of education permission slip) were taken from related institutions (decision no: 78017789/050.01.04/348, date: 09.10.2015).

Informed Consent: In addition, permission was obtained from students before the questionnaires were applied.

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