The Effect of Education Given to University Students on Knowledge of Sexually Transmitted Diseases

Üniversite Öğrencilerine Verilen Eğitimin Cinsel Yolla Bulaşan Hastalıklar Bilgisi Üzerine Etkisi

Araştırma
Research

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Geliş/Received: 30.08.2024
DOI: 10.17942/sted.1540925 Kabul/Accepted: 17.03.2025

Abstract

Objective: This study aimed to evaluate the effect of the education given to the students of a university's vocational school of health services on the knowledge of sexually transmitted diseases.

Method: In the quasi-experimental study, the participants were administered the socio-demographic data form and Sexually Transmitted Diseases (STD) Knowledge Test in the pretest. After the pre-test, the STD Knowledge Test was applied to the participants trained in the post-test and the study was completed with 222 participants.

Results: While the STD knowledge score of the first-grade students included in the study was significantly lower than that of the second-grade students ($p<0.05$), no significant difference was found between the classes in the STD knowledge score after the training ($p>0.05$). While there was no significant difference between the marital status and STD knowledge level of the students before the training ($p>0.05$), the STD knowledge score of married students after the training was statistically significantly higher ($p<0.05$). While the mean score of the students who received information about STDs from the university before the training was statistically significantly higher before the training ($p<0.05$), no significant difference was observed after the training ($p>0.05$). The STD knowledge score of the students included in the study increased significantly after the training compared to before the training ($p<0.05$).

Conclusion: As a result, it was determined that the level of knowledge about STDs of the students studying at the vocational school of health services was at an intermediate level **(21.0±8.0)** at the beginning, and this level increased with the education given **(32.4±5.0)**. This result shows that the education given on STDs is effective.

Keywords: STD; health knowledge; attitudes; practice; health services; student

Özet

Amaç: Bu çalışmanın amacı, bir üniversitenin sağlık hizmetleri meslek yüksekokulu öğrencilerine verilen eğitimin cinsel yolla bulaşan hastalıklar bilgisi üzerindeki etkisini değerlendirmektir.

Yöntem: Yarı deneysel olan çalışmada katılımcılara ön testte sosyo-demografik veri formu ve Cinsel Yolla Bulaşan hastalıklar (CYBH) Bilgi Testi uygulanmıştır. Ön test sonrası eğitim verilen katılımcılara son testte CYBH Bilgi Testi uygulanarak çalışma 222 katılımcıyla tamamlanmıştır.

Bulgular: Çalışmaya dahil edilen birinci sınıf öğrencilerinin CYBH bilgi puanı ikinci sınıf öğrencilerine göre istatistiksel olarak anlamlı düzeyde düşükken ($p<0,05$), eğitim sonrasında CYBH bilgi puanında sınıflar arasında anlamlı bir fark bulunmamıştır ($p>0,05$). Eğitim öncesinde öğrencilerin medeni durumları ile CYBH bilgi düzeyleri arasında anlamlı bir fark bulunmazken ($p>0,05$), eğitim sonrasında evli öğrencilerin CYBH bilgi puanı istatistiksel olarak anlamlı düzeyde daha yüksektir ($p<0,05$). Eğitimden önce üniversiteden CYBH hakkında bilgi alan öğrencilerin puan ortalaması eğitimden önce istatistiksel olarak anlamlı derecede yüksekken ($p<0,05$), eğitimden sonra anlamlı bir fark gözlenmemiştir ($p>0,05$). Çalışmaya dahil edilen öğrencilerin CYBH bilgi puanı eğitim sonrasında eğitim öncesine göre anlamlı olarak artmıştır ($p<0,05$).

Sonuç: Sonuç olarak, sağlık hizmetleri meslek yüksekokulunda öğrenim gören öğrencilerin CYBH hakkındaki bilgi düzeylerinin başlangıçta orta düzeyde olduğu **(21,0±8,0)**, verilen eğitimle birlikte bu düzeyin arttığı **(32,4±5,0)** belirlenmiştir. Bu sonuç CYBH konusunda verilen eğitimin etkili olduğunu göstermektedir.

Anahtar Sözcükler: CYBH; sağlık bilgisi; tutum; uygulama; sağlık hizmetleri; öğrenci

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Introduction

The term sexually transmitted diseases (STDs) is used to refer to a variety of clinical syndromes and infections caused by pathogens that can be acquired and transmitted through sexual activity (1). According to the WHO, sexually transmitted diseases include 1 million new cases every day and 376 million new chlamydia, gonorrhea, syphilis, and trichomoniasis infections every year; more than 500 million people have genital herpes simplex virus (HSV) infections; more than 290 million women carry human papillomavirus (HPV); 1.7 million people are infected with HIV (2,3). It is known that 988,000 pregnant women infected with syphilis in 2016 suffered an additional 350,000 adverse labor events, with 200,000 stillbirths and neonatal deaths. In the world, 38 million people live with HIV, and 690 thousand people have lost their lives due to AIDS. According to the 2023 Global HIV and AIDS statistics; in 2023, it was reported that 39.9 million people worldwide were living with HIV, 1.3 million people were newly infected with HIV and 630 000 people died from AIDS-related illnesses. It is reported that 88.4 million people have been infected with HIV since the beginning of the epidemic, 42.3 million people have died from AIDS-related diseases since the beginning of the epidemic, 38.6 million people are 15 years and older, 1.4 million are in the 0-14 age group (children), 53% of people living with HIV are women and girls (3).

According to the 2023 data of our country, the number of syphilis cases reported in our country was 3,646, the most common age groups were 627 people between the ages of 25-29, gonorrhoea 84 people and chlamydia 32 people (4,5). In our country, there are 45,835 HIV positive persons and 2,438 AIDS cases reported with a positive confirmatory test between 1985 and 7 November 2024. Of the total number of HIV and AIDS cases, 81.8% are male, 18.2% are female and 16.1% are foreigners. Cases are most frequent in the age groups 25-29 and 30-34. When analysing the distribution of cases by mode of transmission, 58.9% of the cases reported in our country since 1985, when the first case was seen, had no reported mode of transmission. Of the reported cases, sexual transmission accounted for 94.4%, intravenous transmission for 1.2% and mother-to-child transmission for 1.2%. Multiple routes of transmission were reported in 2.2% of cases (6).

The fact that the symptoms of STDs are so mild that they are not recognized causes the disease to spread rapidly. Therefore, the disease spreads silently in society and affects a large mass of people (7). According to the World Health Organization (WHO), 10-19 years of age is defined as the adolescent period, 20-24 years of age as the youth period, and 10-24 years of age as young people (8). According to TÜİK 2019 data, the young population in the 15-24 age group in our country is 12 million 955 thousand 672 people, constituting 15.6% of the total population (9).

Adolescence is a period of transition due to anatomical, physiological, psychological and social changes. The experience of sexuality becomes more pronounced during this period and often takes the form of unprotected sexual practices, due to a lack of information and communication between family members, certain myths or taboos, or fear of accepting one's own sexuality. Therefore, the search and curiosity for new experiences and the lack of guidance on the changes that adolescents experience make them vulnerable to risky situations, including sexually transmitted diseases (STDs), which may include acquired immunodeficiency syndrome (AIDS) (10).

The reasons for the increase in the prevalence of STDs especially in developing countries include inadequacy of sexual and reproductive health programs, decrease in the age of sexual intercourse in young people, increase in the frequency of premarital sexual intercourse, and the number of sexual partners, wrong contraceptive preferences, and detection of STDs with the development of diagnosis and treatment possibilities with technology (11). The fact that adolescents do not have sufficient information about STDs, have information from wrong sources, and have wrong knowledge and attitudes on this subject makes it difficult to fight against STDs. In studies conducted in our country, it was found that students had inadequate knowledge about STDs and wanted to have information about STDs (8,12).

It is important in terms of public health to determine the level of knowledge of young people about STDs in the early period and to plan services for them, organize training programs, and determine diagnosis-treatment services.

In this study, it was aimed to evaluate the effect

of the education given to the students of the vocational school of health services of a university on the knowledge of sexually transmitted diseases.

Methods

Place and Time of the Research

The data of this quasi-experimental study were applied between March and May 2024. The study was carried out on the students of a vocational school of health services of a university located in the east of Turkey.

Data Collection Tools

Data Collection Tools consisted of two parts: "Socio Demographic Information Form" and "Knowledge Test on Sexually Transmitted Diseases (STD Knowledge Test)", originally named STI/HIV Pre-test. Data were collected face-to-face before and after the training. The questionnaire took an average of 10-15 minutes to complete.

Socio-demographic information form

Socio-demographic Information Form was prepared by the researchers by reviewing the literature (13-19). The questionnaire form, which consisted of a total of 9 questions, included questions such as age, gender, marital status, place of residence, status of receiving reproductive-sexual health counseling, and status of receiving sexual health education before university.

Level of Knowledge on Sexually Transmitted Diseases

It consists of 36 items to evaluate the knowledge level of students about sexually transmitted diseases. The STD Knowledge Test, whose original name is "Sexually Transmitted Infection (STI)/HIV Pre-test", is used in some schools of Canada to measure the level of knowledge of the student in the first year and in the last year after receiving education and to determine the effectiveness of the education (20).

The forty-item test was adapted into Turkish by the researchers and reduced to 36 items by removing four items that were not suitable for Turkish conditions. The test was adapted to Turkish by M. Siyez and Siyez in 2009. The questions are answered as "True", "False", and "I don't know" (21). In the questionnaire; 1 point is given for each suggestion answered correctly, and 0 point is given for each suggestion answered incorrectly and 'don't know' suggestion. A total of 18 items (1,3,5,6,8-10,13,15,18,20,21,23,28,29,32-34,36) in the STD Knowledge Test are reversed items and statements answered as "False" in these questions are evaluated as 1 point and suggestions answered as "True" and "Don't Know" are evaluated as 0 points. The total score to be obtained from STD Knowledge Test is between 0-36. A high score means that the level of knowledge about STDs is high.

Population and sample of the study

The Vocational School of Health Services population consists of 850 students. All of the students were invited to participate, but 260 of them voluntarily participated. Incomplete and inconsistent 38 data forms were excluded and the study was completed with 222 students. In the evaluation made with the G Power package programme after the study, it was determined that an effect size of 0.8 was reached in the 95% confidence interval (alpha: 0.05) of 222 samples.

Inclusion criteria;

- Being 18 years of age and over
- Being a voluntary participant in the research,
- To be studying at the Vocational School of Health Services
- Completed the questionnaire forms totally and consistently

Exclusion criteria;

- Participants who did not fulfill the inclusion criteria were excluded from the study

Research Implementation

The socio-demographic information form and Knowledge Test on Sexually Transmitted Diseases were applied to 260 students who met the inclusion criteria in the study. The pre-test was completed in 2 weeks. After the pre-test, a day was planned on which the students were suitable and training was given to them by demonstration method (slide, video). The content of the training included STDs, transmission routes, prevention routes, and treatment methods. The training lasted for 4 weeks. All of the students were divided into 4 groups, with 65 people in each group, and the training was completed by the researchers in the university lecture theatre with 2 groups in the morning for 1 hour each and 2 groups in the afternoon for 1 hour each. One week after the training, the participants were administered the Knowledge Test on Sexually Transmitted Diseases in the post-test. The study was completed with 222 students by excluding 38 incomplete and inconsistent data forms.

Limitations of the Research

Limitations of the study include the fact that the participation rate is not very high and the distribution between men and women is unbalanced.

Analysing the Data

The data of the study were analysed using SPSS 21 Statistical Package Programme and descriptive statistics (frequency, percentage, arithmetic mean and standard deviation) were used. Independent sample t test and one-way variance (ANOVA) analysis were used to evaluate the effect of socio-demographic characteristics on STDs. Dependent sample t test was applied to determine the test scores before and after the training, and statistically, values with a p value below 0.05 were considered significant.

Ethical Aspects of the Study

Approval (01.03.2024/94289) was obtained from the Ethics Committee of Şırnak University before starting the study. Participants were informed about the subject and purpose of the study and verbal consent was obtained. The study was conducted by the Principles of the Declaration of Helsinki.

Results

It was found that 178 (80.2%) of the students participating in the study were female, and the proportion of students between the ages of 18-24 was 88.7%. 68.5% were 1st year students, 92.3% were single, 46.4% lived in the province and 21 (23.0%) lived in the village (Table 1).

There are three main reasons for defining the age groups as 18-24 years and 25 years and over in our study:

WHO age classification: According to the WHO, young adulthood covers the age range 20-24 years (33). However, as university students usually start their education at the age of 18, it was considered appropriate to include this age group in the same category. As those aged 25 and over are included in the adult group, this distinction was made to take account of developmental differences.

Statistical and sampling distribution: The 18-24 age group is a more homogeneous group, while the 25 and over age group consists of individuals aged 25-46 with different educational backgrounds and experiences. Because of this heterogeneous structure, two separate groups were formed.

Developmental and academic differences: While the 18-24 age group generally consists of individuals who have just started their studies, individuals aged 25 and over may have interrupted

Table 1. Descriptive Characteristics of the Students Participating in the Study (n=222)

Descriptive Characteristics		n	%
Gender	Woman	178	80.2
	Male	44	19.8
Age	18-24 age	197	88.7
	Over 25 years old	25	11.3
Class	1	152	68.5
	2	70	31.5
Marital status	Single	205	92.3
	Married	17	7.7
Longest place you have lived	Province	103	46.4
	District	68	30.6
	Village	21	23.0
Counseling on reproductive-sexual health	Family (Mother, father, sibling)	112	50.5
	Other (Friends, teachers)	79	35.5
	Both	31	14.0
Previous sexual health education at the University	Yes	62	27.9
	No	160	72.1

their education, gained work experience or continued their academic life with different motivations. Such a grouping was preferred in order to analyse these differences.

While the STD knowledge score of the first grade students included in the study was significantly lower than that of the second grade students ($p<0.05$), no significant difference was found between the classes in the STD knowledge score after the training ($p>0.05$). While there was no significant difference between the marital status and STD knowledge level of the students before the training ($p>0.05$), the STD knowledge score of the married students after the training was statistically significantly higher ($p<0.05$). While the mean score of the students who received information about STDs from the university before the training was statistically significantly higher before the training ($p<0.05$), no significant difference was observed after the training ($p>0.05$) (Table 2).

There was no statistically significant difference between the STD knowledge score of the students before and after the training and the variables of gender, age, longest residence and counselling about reproductive and sexual health ($p>0.05$) (Table 2).

Table 2. Factor Affectings STD Knowledge Level Before and After Training

Descriptive Characteristics		Pre-Training		Post-Training	
		$\bar{x}$	S.D	$\bar{x}$	S.D
Gender	Female (n:178)	21.4	8.0	32.7	4.6
	Male (n:44)	19.6	9.2	31.5	6.9
Test Values		t:1.302; p:.194		t:1.389; p:.166	
Age	18-24 age (n:197)	21.1	8.1	32.3	5.4
	Over 25 years old (n:25)	20.4	9.5	33.8	0.6
Test Values		t:0.435; p:.664		t;-1.372; p:.172	
Class	1 (n:152)	19.5	8.5	32.1	5.8
	2 (n:70)	24.4	6.6	33.1	3.0
Test Values		t:-4.349; p<0.001		t:-1.252; p:.212	
Marital status	Single (n:205)	20.9	8.2	32.3	5.3
	Married (n:17)	22.4	9.1	33.9	0.2
Test Values		t:-0.716; p:.475		t:-4.330;p<0.001	
Longest place you have lived	Province (n:103)	21.4	8.2	32.5	5.3
	District (n:68)	22.2	8.5	32.7	3.7
	Village (n:51)	18.7	7.8	32.0	6.4
Test Values		F:2.769; p:.065		F:0.290; p:.748	
Counselling on Reproductive-Sexual Health	Family (Mother, father, sibling) (n:112)	21.5	8.0	32.2	5.5
	Other (Friends, teachers) (n:79)	20.4	8.8	32.1	5.5
	Both (n:31)	21.1	7.7	34.00	0.00
Test Values		F:0.404 ; p:.668		F:1.691; p:.187	
Previous sexual health education at university	Yes (n:62)	25.0	7.2	32.7	3.6
	No (n:160)	19.5	8.1	32.4	5.6
Test Values		t:4.629; p<0.001		t:0.405; p:.686	

t: Independent Sample t Test; F: One-Way Analysis of Variance; p: Significance Value

Table 3. Evaluation of STD Knowledge Level Before and After Training				
n (222)	**Pre-Training**		**Post Training**	
Test Values: t:-19,440; p<0.001	$\bar{x}$	**S.D.**	$\bar{x}$	**S.D.**
	21.0	8.2	32.4	5.1
t: Dependent Sample t test; p: Significance Value				

The STD knowledge score of the students included in the study increased significantly after the training compared to before the training (p<0.05) (Table 3).

Discussion

The rapid increase in the young population in our country, as in the world, leads to incomplete or incorrect information about sexuality. The decrease in the age of sexual experience and unwanted pregnancies causes an increase in STDs. Especially students who are educated in health-related fields and who will serve society as health educators in the future are expected to have sufficient knowledge about STDs (13).

It was determined that 178 (80.2%) of the students participating in the study were female, 88.7% were between the ages of 18-24, 68.5% were first-year students, 92.3% were single, 46.4% lived in the province and 21 (23%) lived in the village. When similar studies in the literature were examined, it has been seen that the majority of the participants' genders were female, their age ranges were between 17-24 years old, they were first-year students, single, and their longest place of residence was the province (13, 21-24). The findings of the study were similar to the literature findings.

In our study, there was no statistically significant difference between the STD knowledge score of the students before and after the training and the variables of gender, age, longest living place, and counseling about reproductive-sexual health (p>0.05). According to this result in our study, it showed that sociodemographic data did not affect the knowledge levels of the participants about STDs. However, in our study, while there was no significant difference between the marital status of the students before the training (p>0.05), the STD knowledge score of the married students after the training was statistically significantly higher (p<0.05). This showed that the training increased the knowledge level of students who were married and had a sexually active life. In the study conducted by Sarı et al. (2023), there was no statistically significant difference (p>0.05) between the mean total score of the students' STD test and sociodemographic characteristics (13). Literature findings support the findings of the study. Karasu et al. (2017) found that there was no statistically significant relationship between students' marital status and their correct answers to the knowledge test (p 0.05) (18). The result of this study coincided with the result of our study before the training was given. However, unlike the findings of this study, there were studies in the literature in which sociodemographic data affected the mean scores of the STD knowledge test. Youssouf (2023) found a statistically significant difference (p<0.05) in the knowledge levels of STDs of students according to age groups (F=7,293, p<0.05), gender (t=2,810, p<0.05), marital status (t=-4,293, p<0.05), and longest place of residence (X^2=13,892, p<0.05) (19). Again in the literature, studies were showing that there was a significant difference between gender and the mean STD knowledge score of students (14-17). It was thought that the difference between our study and the findings in the literature might be due to the sociocultural and behavioral characteristics of the students and the differences in the regions where the studies were conducted.

In our study, while the STD knowledge score of the first-grade students was significantly lower than that of the second-grade students (p<0.05), no significant difference was found between the classes in the STD knowledge score after the training (p>0.05). It is thought that the reason why the knowledge level of the second grade before the training was higher than that of the first grade was because they took the infectious diseases course in the second grade. While the STD knowledge levels of the pre-training classes were at medium level, the fact that there was a significant difference in the knowledge levels of both class levels after the training shows that

they reached a high level of knowledge thanks to the training. The fact that there was no difference between the two class levels after the training and the knowledge levels increased shows the effectiveness of the training given. In the literature, as in our study, it was seen that there was an increase in knowledge levels as the course on sexual health iwas given and the grade level of the students increases (13,18, 25-28).

In our study, while the mean score of the students who received information about STDs before the university was statistically significantly higher before the training ($p<0.05$), no significant difference was observed after the training ($p>0.05$). This might be thought to be because there was an infectious diseases course in the curriculum in the departments where the students studied or that they received sexual health education before university. Looking at the literature studies, Youssouf (2023) found the mean score of the students who received information about STDs statistically significant ($X^2=151,421$, $p<0.05$) (19). Siyez et al. (2009) found that the mean scores of those who received sexual health education before university were higher than those who did not ($t=2.10$, $p<0.01$) (21). Gündüzalp (2018) found a difference between the students who received training on sexually transmitted diseases before and those who did not ($t=8.367$, $p<0.01$) (22).

Since adolescence is a period in which health habits and sexual behaviors begin to take shape in the transition from childhood to adulthood, it is a period in which information and education on sexual and reproductive health (SRH) issues are important (29). Since university students in adolescence and young adulthood constitute an important segment of society that is at risk in terms of STDs, STD education and services should be made widespread so that young people can spend this period and their future lives healthy. Young people must start to receive education on sexually transmitted diseases before adolescence, acquire sexual health behaviors, and access the most accurate information in the way they want. Informing young people about sexually transmitted diseases using the right sources and providing complete information is important in terms of protecting the health of individuals and society and preventing transmission (22).

In our study, there was no statistically significant difference between the reproductive-sexual health counseling variables and the STD knowledge score of the students before and after the training ($p>0.05$). In our study, students answered family (mother, father, sibling) to the question of whom do you consult/share reproductive-sexual health issues (n:112, 50.5%). This rate was surprisingly higher than in similar studies. It might be assumed that this might be due to the positive attitude of the parents towards sexual health. In similar studies in our country, Sarı et al. (2023) (31.3%) and Karasu et al. (2017) (17.9%) gave a low rate of family response (11,16). In studies conducted in other countries; in a study conducted in Malaysia (13.8%) (30), Albanian and Italian students; it was observed that 44% of Albanian students could talk to their families and received education on sexual health issues, while in Italian students, it was determined that the student's level of knowledge about STDs was low because talking about sexual health issues with the family was considered a taboo and they did not receive health education about sexuality (31). In general, it is known that in countries and groups where Islam is widespread, sexual health issues are not discussed with the family. Education on sexual health should start first in the family and then in institutions. The fact that sexuality is seen as taboo due to religious and cultural influences and is not discussed causes young people to have insufficient knowledge about the subject and to obtain wrong information about sexuality due to incomplete information. As a result, young people who access this misinformation from peers, friends, and social media exhibit sexually risky behaviors (13).

In our study, the STD knowledge score of the students after the training increased significantly compared to before the training ($p<0.05$). In line with this result, it was determined that the training given was effective. The fact that the knowledge level of the students about STDs was at an intermediate level (21.03 ± 8.23) before the training was given and that this level increased significantly after the training (32.43 ± 5.13) is an indication that the training given was effective ($t:-19.440$; $p<0.001$). In a systematic review of similar studies, 12 articles were examined and according to the results of

the studies, the mean of the STD knowledge test was between 25.20±5.11 and 16.64±7.00 (25,32) and in the literature it was reported to be between 25.00±5.09 and 11.60±8.78 (21). The highest score that can be obtained from the STD knowledge test is 36, and these results show that the knowledge level of the students is medium or low (32). While the findings of the study were similar to the literature findings before the training and the level of STD knowledge was moderate, the fact that the post-training level was higher than the literature findings again reveals how important it was to provide education on sexual health issues.

Conclusion

As a result, it was found that the level of knowledge about STDs among the students of the Vocational School of Health Services was at an intermediate level at the beginning (21.03±8.23) and that this level increased with the education received (32.43±5.13). This result shows that the education given on STDs is effective. In our study, it was observed that the sociodemographic data of the students did not affect the level of knowledge of the participants about STDs. Unlike the findings in the literature, it was observed that half of the students (50.45%) could discuss reproductive-sexual health issues with their families. Considering that sexual health should start from the family first and then continue to be given in institutions, this result can be seen as an indication that this result is encouraging and that young people can be prevented from reaching wrong information and exhibiting sexually risky behaviors.

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