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Health Services Students' Knowledge of Sexually Transmitted Diseases

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Abstract

Background: The rising incidence of sexually transmitted diseases (STDs) among young people is a significant public health issue. This study aims to assess the level of knowledge of sexually transmitted diseases among students at a vocational health school.

Methods: A descriptive study was conducted at a university in eastern Turkey from January to June 2024. The sample consisted of 621 students who agreed to participate. Data were collected from a sociodemographic form and the Sexually Transmitted Diseases Knowledge Questionnaire.

Results: Knowledge was higher among males, second-year students, those in the emergency and disaster management program, those with previous education about STDs, and those familiar with prevention methods ($p < 0.05$). Human immunodeficiency virus/AIDS was the most commonly recognized disease (64.3%), and 61% of students reported having received information about sexually transmitted diseases at school.

Conclusion: The mean total score of the students was 7.11 ± 5.94. The level of knowledge of sexually transmitted diseases is low. Effective educational interventions are essential for future healthcare providers to improve health education and implement preventive measures.

Keywords: level of knowledge, sexually transmitted diseases, students, Türkiye

INTRODUCTION

Sexually transmitted diseases (STDs) cause significant public health problems worldwide, placing a significant burden on health services. According to the World Health Organization (WHO), 376 million STDs are recorded worldwide each year.[1,2] Bacteria, viruses, and fungi can cause these infections. The most common are chlamydia, gonorrhea, genital herpes, human papilloma virus (HPV), syphilis, and human immunodeficiency virus (HIV).

Worldwide, STDs are on the rise among young adults, which is a cause for concern. The effects of STDs on young people and their tendency to spread create significant burdens on health systems and societies.[3] Young adults are exposed to environments in which they can engage in risky sexual behaviors because of the normal process of psychosexual development and the influence of peers and digital culture. This makes them more vulnerable to STDs than the elderly population.[4,5] Young people aged 15–24 are the most at risk.[6,7] The period of university education coincides with this age group. In this process, significant sociocultural changes in the lifestyles of students and the impact of these changes make them more susceptible to risky sexual behaviors and the risks this entails.[8–11] In this sexually active period, not having enough information about STDs and not getting information from the right sources create misunderstandings among young people and difficulties in the fight against these diseases.[12,13] Considering the results of many international studies, the WHO states that there is a lack of education and awareness about STDs.[1] In this context, emphasizing the prevalence of STDs is critical to raising awareness among young adults. Young people's knowledge of this issue can enable them to play an active role in prevention and treatment processes.[3] Studies have reported that most university students have low levels of knowledge about STDs.[13–15] The situation is similar in Turkey. In a systematic review investigating university students' level of knowledge about STDs, it was reported that the level of knowledge among the majority of students was insufficient.[16] In order to prevent STDs, it is important to provide comprehensive education and information about the types of infections, the diseases they cause, their signs and symptoms, and the fact that some types may be asymptomatic. It is also important to prioritize health promotion programs in this regard.[1,17]

Tackling STDs in young adults is a daunting task for health professionals in most countries. If future health care providers are not well equipped with sound knowledge,

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good attitudes, and good practices, it will be more difficult to solve STD-related medical and social problems. University students, especially medical and health science-oriented students, are recognized as future healthcare providers who may be in a position to promote health education about STDs and implement appropriate preventive measures for the general public.[18] The aim of this study is to determine the level of knowledge about sexually transmitted diseases among students at a vocational health school to provide solutions based on the results.

METHODS

The population of this descriptive study consisted of students (N = 1040) enrolled at the Erzincan Binali Yıldırım University Vocational School of Health Services in the eastern region of Turkey during the spring semester of academic year 2023–2024. No sampling was used in the study as the objective was to reach all the students. The study concluded with 621 (59.71%) students who volunteered to participate and completed the data collection instruments. The data were collected by the researchers between January and June 2024.

Approval was obtained from the Erzincan Binali Yıldırım University Human Research, Health, and Sports Sciences Ethics Committee on December 29, 2023, registered under number E-88012460-050.04-332980-12/04. Permission was obtained from both the institution where the research was conducted and the authors of the scale. Students were informed about the research and gave their written consent to the use of their answers for the purposes of the study.

The data for the study were collected using a sociodemographic form and the Sexually Transmitted Diseases Knowledge Questionnaire (STD-KQ). The sociodemographic form was developed by the researchers. It consisted of 10 questions about age, sex, educational program, type of school completed, longest place of residence, education about STDs, knowledge of STD prevention methods, knowledge of STDs, and sources of information. The STD-KQ was developed by Jaworski and Carey in 2007. This scale measures and assesses young adults' knowledge of the six STDs (chlamydia, genital herpes, gonorrhea, hepatitis B, HIV, and HPV) that pose the greatest health threat to the population.[19] The test of the scale for Turkish validity and reliability was conducted by Dilcen *et al*. It was reported that the total Cronbach's alpha coefficient of this scale was 0.843, which indicates high reliability, and that it was valid and reliable according to Turkish culture for assessing individuals' knowledge and awareness of STDs.[20] The scale consisted of 25 items and six subscales (general knowledge, treatment and protection, transmission and protection, agent, symptom, cause and effect). The possible responses to the items were "true," "false," and "don't know." "Correct" answers to each item in the scale were worth 1 point, and "incorrect" or "don't know" answers were worth 0 points. The highest possible score that could be obtained from the scale is 25 and the lowest is 0. The items with correct answers when the "correct" option was selected in the scale were 2, 3, 5, 7, 8, 10, 11, 12, and 25. The items with correct answers when the "wrong" option was selected were 1, 4, 6, 9, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24. In this study, Cronbach's alpha was 0.902.

Statistical Package Social Sciences for Windows (SPSS) 22 was used to evaluate the data. The suitability of the data for normal distribution was determined by the Kolmogorov–Smirnov test. The descriptive data of the study were expressed as number (n), percentage (%), mean, and standard deviation (SD). The Mann–Whitney U and Kruskal–Wallis tests were used to compare variables that did not fit the normal distribution. $p < 0.05$ was accepted as the threshold of statistical significance.

RESULTS

Table 1 shows the mean age of the students was 20.35 ± 2.57 (minimum: 18, maximum: 44), 76.3% were female, 15.3% were studying in a first and emergency aid program, 52.8% were first-year students, 78.4% graduated from a high school other than a health vocational high school, and 48.1% lived mostly in the provinces. It was found that 59.3% of the students did not receive any education about STDs, 57.5% of them knew the methods of protection from STDs, 64.3% of them reported that the STD they were most familiar with was HIV/AIDS, and 61.0% reported that their source of information about STDs was school.

Table 2 shows the mean scores of the STD-KQ and its subscales. When the mean scores of the STD-KQ and its subscales were analyzed, it was found that the mean score of general knowledge was 1.44 ± 1.61, the mean score of treatment and protection was 1.37 ± 1.26, the mean score of transmission and protection was 0.76 ± 0.94, the mean score of agent was 1.14 ± 0.98, the mean score of symptom was 1.01 ± 1.21, the mean score of cause and effect was 0.54 ± 0.80, and the mean score of the total score was 7.11 ± 5.94.

Table 3 shows the total mean scores of the STD-KQ compared by students' sociodemographic characteristics. A statistically significant difference ($p < 0.05$) was found between the total mean score of the STDs knowledge scale and students' sex, study program, year, type of high school completed, status of receiving education about STDs, and knowledge of STD prevention methods.

TABLE 1. Sociodemographic characteristics of students (N = 621)

Variable	N	%
Sex		
Female	474	76.3
Male	147	23.7
Grade		
1st Grade	328	52.8
2nd Grade	293	47.2
Training program		
First and Emergency Aid	95	15.3
Anesthesia	84	13.5
Emergency and Disaster Management	71	11.4
Oral and Dental Health	56	9.0
Child Development	45	7.2
Home Care Services	74	11.9
Medical Imaging Techniques	63	10.1
Medical Documentation and Secretariat	78	12.6
Pharmacy Services	55	8.9
Type of high school graduated		
Health High School	134	21.6
Other	487	78.4
Place of longest residence		
Village	158	25.4
District	164	26.4
Province	299	48.1
Training in STDs		
Yes	253	40.7
No	368	59.3
Knows STDs prevention methods		
Yes	357	57.5
No	264	42.5
Information about STDs*		
HIV/AIDS	399	64.3
Gonorrhea	112	18.0
Frengi	28	4.5
HPV	26	4.2
Hepatitis	84	13.5
Genital Herpes	63	10.1
STDs information sources*		
School	379	61.0
Family	140	22.5
Friends	231	37.2
Health personnel	142	22.9
Internet	370	59.6
Television	91	14.7
Social media	280	45.1
Book/magazine	90	14.5

*Participants gave more than one answer

TABLE 2. Mean scores of students' STD-KQ knowledge scale and subscales

Scale	Med (Min–Max)	Mean ± SD
Total score of STD-KQ	6.00 (0–25)	7.11 ± 5.94
General Information	1.00 (0–6)	1.44 ± 1.61
Handling and protection	1.00 (0–4)	1.37 ± 1.26
Contamination and protection	0.00 (0–3)	0.76 ± 0.94
Agent	1.00 (0–3)	1.14 ± 0.98
Symptom	1.00 (0–4)	1.01 ± 1.21
Cause and effect	0.00 (0–3)	0.54 ± 0.80

Med: Median; Min: Minimum; Max: Maximum; SD: Standard Deviation

DISCUSSION

STDs are a major health problem affecting young people in both developed and developing countries such as Turkey. The group most vulnerable to these infections are young adults because of lack of knowledge and risky practices. Information on this topic is very important for preventing negative outcomes in reproductive health of young adults. The WHO states that studies on STDs show that there is a lack of education and awareness in this area.[13] This study provides information to determine the level of knowledge about STDs among health services students and offers solutions in line with the results.

In the study, the total STD-KQ score of the students was 7.11 ± 5.94, and their level of knowledge was low. Previous studies have reported that university students have low levels of knowledge about STDs.[13-16] This situation can be explained by the lack or inadequacy of awareness about STDs and training programs at universities. It is believed that students have a low level of knowledge despite receiving health education that effective educational interventions need to be developed, that information about STDs is important for preventing their spread, and that more research on this topic is needed. Training should be provided on the types, symptoms, risk factors, routes of transmission, prevention methods, and treatment methods of STDs. It should also include information on healthy sexual behavior. For this purpose, training programs supported by group discussions, role plays, case studies, videos, animations, and visual materials should be used. Training materials should be constantly renewed to keep up with current information. Questionnaires, tests, and feedback methods should be organized to evaluate the effectiveness of the training. Training programs should be improved. In addition, students should be informed about clinics and counseling lines where more information and support can be obtained. Continuity of trainings should be ensured. Informative materials in schools, seminars, and informative content services on social media and other digital platforms are also important in this regard.

This study found that male students had a higher level of knowledge about STDs than female students. Similar to these results, another study reported that males had better knowledge of STDs.[13] Another study found that females had a higher level of knowledge than males,[18] while a third study found that the sex of the respondent did not affect the level of knowledge about STDs.[21] In our society, boys are raised more freely than women in terms of sexuality, while girls are generally under pressure and

TABLE 3. STD-KQ mean scores by student sociodemographic characteristics

Variable	Mean ± SD	*p*
Sex		
Female	6.75 ± 5.75	0.015*
Male	8.25 ± 6.40	
Grade		
1st Grade	5.73 ± 5.44	0.000*
2nd Grade	8.65 ± 6.11	
Training program		
First and Emergency Aid	7.02 ± 6.30	0.000*
Anesthesia	8.32 ± 6.46	
Emergency and Disaster Management	9.52 ± 5.17	
Oral and Dental Health	8.71 ± 5.99	
Child Development	2.77 ± 4.12	
Home Care Services	7.60 ± 4.92	
Medical Imaging Techniques	6.74 ± 6.78	
Medical Documentation and Secretariat	5.48 ± 4.97	
Pharmacy Services	6.27 ± 5.76	
Type of high school graduated		
Health High School	8.97 ± 5.79	0.000*
Other	6.59 ± 5.89	
Place of longest residence		
Village	7.04 ± 6.12	0.818
District	6.84 ± 5.58	
Province	7.29 ± 6.05	
Training in STDs		
Yes	10.10 ± 5.68	0.000*
No	5.05 ± 5.20	
Knows STDs prevention methods		
Yes	9.31 ± 5.73	0.000*
No	4.12 ± 4.81	

*p< 0.05; SD: Standard Deviation; Mann–Whitney U test and Kruskal–Wallis test were used accordingly.

control and are raised according to more conservative and traditional expectations.[22] Analyzing the cultural or social factors that affect this situation will be useful in this sense.

This research found that the level of knowledge about STDs was higher among second-year students. Another study reported that first-year university students had insufficient knowledge of STDs and their prevention.[23] Other studies have reported that students have better knowledge about STDs as their years of study increase.[13,18] This study found that students trained in emergency and disaster management had higher levels of knowledge about STDs than students trained in other programs. This can be explained by the fact that students' course content on infectious diseases is more extensive than in other programs.

The study found that levels of knowledge about STDs were higher among students who had graduated from a health school. Previous studies have reported that students who graduated from health science colleges had higher levels of knowledge about STDs and infections[24] and that health science students had higher levels of knowledge about STDs than students who graduated from non-health science colleges.[7,18] In the present study, the level of knowledge about STDs was higher among students who had received education about STDs and among students who knew about prevention methods. Another study reported that having received SRH education at school was an important factor that influences knowledge of STDs.[14] In this regard, it is clear that the inclusion of topics on infectious diseases, including STDs, in educational curricula and the provision of education on these topics are effective in influencing these outcomes.

The study found that HIV/AIDS was the STD most commonly known by students (64.3%). Previous studies have also shown that HIV is the most common STD.[14,18] In this regard, current sex education programs could be strengthened by providing more information about not only HIV but also other STDs.

The study found that students get most of their information about sexuality from school (61%), followed by the Internet (59.6%) and social media (45.1%). With regard to sources of information in the studies, it was reported that the Internet was the main source of information for students (77.3%) and that more than half of the students obtained this information through the faculty curriculum.[18] In another study, it was reported that students obtained information from three main sources:

the Internet (41.3%), courses at school or university (27.8%), and health professionals (16.7%).[14] Health education and easy access to health educators, the Internet, and social media are important means for raising awareness among the masses. However, the reliability of these sources and their impact on the quality of information should be assessed. The spread of misinformation from Internet sources and the timeliness of materials are important factors that affect the quality of information. In future research, studies should be carried out to assess the reliability and impact of these sources. The results of the research are not representative of the general student population as they reflect only the level of knowledge of the students who agreed to participate.

CONCLUSIONS

This research reveals that the level of knowledge of students who receive education in the field of health is low. In this regard, there is a critical need to reevaluate the current sexual education program content and teaching methods. STDs training for students should be increased, and health screenings and treatment at universities should be made available for students. It is thought that these steps will also affect awareness and knowledge in other university programs that do not include health education. Without these actions, it will be difficult to train good healthcare providers in STDs in the future. Future research could be conducted with larger sample groups and focus on areas such as changes in knowledge over time or the effectiveness of specific training programs.

CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest.

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