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Sexually transmitted diseases-related knowledge levels of midwifery students studying at two different universities: A comparative study

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Abstract

This study aimed to compare the knowledge levels of midwifery students from two universities in eastern and western Turkey regarding sexually transmitted diseases (STDs). A descriptive, comparative study was conducted with midwifery students from both regions.The average score on the STD Knowledge Test was 14.49±3.83. Students from the western university scored 14.63±3.60, while those from the eastern university scored 13.98±4.58. Among western university students, knowledge scores were significantly associated with factors such as year of study, place of residence, and prior sexual health education. For eastern university students, significant factors included age, year of study, social security status, and university-based sexual health education ($p<0.05$). It is recommended that educational programs be strengthened to enhance students' knowledge and improve access to accurate, reliable information. *(Afr J Reprod Health 2025; 29 [7]: 48-58).*

Keywords: Sexually transmitted diseases; Midwifery; Knowledge; Student

Résumé

L'étude visait à comparer les niveaux de connaissance des étudiants sages-femmes de deux universités situées l'est et à l'ouest de la Turquie sur les maladies sexuellement transmissibles. Cette étude descriptive et comparative a été menée auprès d'étudiants des départements de sages-femmes de deux universités différentes situées dans les régions de l'est et de l'ouest de la Turquie. Le score moyen obtenu par le test de connaissances sur les maladies sexuellement transmissibles était de 14,49±3,83. Alors que le score moyen obtenu par « les participants fréquentant l'université de l'ouest de la Turquie était de 14.63±3.60, le score moyen obtenu par » les participants fréquentant l'université de l'est de la Turquie était de 13.98±4.58. Alors qu'il y avait une relation statistiquement significative entre les scores moyens obtenus au test de connaissance des maladies sexuellement transmissibles par les étudiants de l'université de l'ouest et les variables telles que l'année scolaire, le lieu de résidence, l'éducation à la santé sexuelle au lycée, l'éducation à la santé sexuelle à l'université, et la connaissance des maladies sexuellement transmissibles, il y avait une relation statistiquement significative entre les scores moyens obtenus à la même échelle par les étudiants de l'université de l'est et les variables telles que l'âge, l'année scolaire, la sécurité sociale, l'éducation à la santé sexuelle à l'université ($p<0,05$). Le niveau de connaissance des étudiants sur les maladies sexuellement transmissibles est insuffisant; il est donc recommandé que les étudiants participent à des activités éducatives pour améliorer leur niveau de connaissance sur les maladies sexuellement transmissibles et pour leur permettre d'accéder à des sources précises et fiables. *(Afr J Reprod Health 2025; 29 [7]: 48-58).*

Mots-clés: Maladies sexuellement transmissibles; profession de sage-femme; connaissances; étudiants

Introduction

Sexually transmitted diseases (STDs) are infections spread primarily through vaginal, anal, and oral sexual contact. The microorganisms responsible can also be transmitted via skin contact, blood products, and tissue transfer. STDs pose significant public health concerns due to complications such as pelvic inflammatory disease, infertility, newborn blindness, cancer, ectopic pregnancy, and even death.[1,2] Adolescents, experiencing rapid physical and hormonal changes, may face issues like unintended pregnancies and early childbirth due to early sexual activity. Furthermore, engaging in sexual intercourse at a young age can lead to problems including AIDS, intentional miscarriages, other STDs, or even death.[3] Adolescents and young adults are more sexually active, making them particularly vulnerable to STDs.[4] University students, especially those aged 15–29, are among

the highest-risk groups. This risk is elevated in countries with predominantly young, urban, and single populations.[5] According to 2023 data from the Republic of Turkey Ministry of Health, between 1985 and 2023, 39,437 HIV-positive individuals and 2,295 AIDS cases were recorded, with nurses and midwives playing an active role in their detection.[6] However, it is reported that in 2024, 45,835 individuals were identified as HIV positive and 2,438 AIDS cases were detected.[7] Midwifery students, as part of this young population, are expected to guide society on STDs and contribute to disease prevention efforts after graduation. Hence, assessing their knowledge of STDs is crucial.

Studies in the literature largely assess university students' knowledge of STDs, but few address regional differences.[8,9] In one study comparing midwifery and nursing students, midwifery students had higher knowledge levels due to their more intensive education in women's health.[10] Another study found that students who received education on sexuality scored higher in STD knowledge.[11] In Turkey, many students prefer universities near their families.[12] As a result, despite geographic diversity at universities, students often remain close to their cultural roots. This may cause regional differences in STD awareness, as traditions and taboos about sexuality vary. For instance, Yaşar et al. reported that students from rural areas were less likely to consider sexuality a family taboo compared to those from metropolitan areas.[13]

In regions where sexuality is a taboo subject, lack of information and misinformation about STDs is more prevalent.[14] The literature also highlights a scarcity of studies focusing specifically on midwifery students and their regional backgrounds. In Turkey, although midwifery education follows a standardized national curriculum, the sociocultural characteristics of each region may influence students' access to sexual health education and shape their perceptions of these issues. Therefore, this study was conducted with students from two universities located in different regions of Turkey—one in the east and one in the west—that differ in terms of sociodemographic, geographic, economic, and population characteristics. The selection of these institutions was intentional, as they represent distinct cultural and socioeconomic contexts. This comparison aims to reveal how regional and institutional factors may influence students' understanding of sexual health despite receiving similar academic training. In light of these factors, the present study aims to compare the STD-related knowledge levels of midwifery students attending universities in eastern and western Turkey.

Methods

This descriptive, comparative type study was conducted between March –May 2023 with students studying in the midwifery departments of two different universities in the Eastern and Western Regions.

Population

The study population consisted of midwifery students attending the aforementioned universities. Of them, 470 who wanted to participate in the study were included in the sample of the study without using a sample selection method.

The number of midwifery students in the university located in the West in the 2022-2023 academic year was 497. Of them, 369 participated in the study. The participation rate was 74%. The number of midwifery students in the university located in the East in the 2022-2023 academic year was 182, and 101 of them participated in the study. The participation rate was 55%.

Measures

Data Collection Tools: The Descriptive Information Form prepared by researchers based on the literature and the Sexually Transmitted Diseases Knowledge Test were used as data collection tools.

Descriptive Information Form: The form, prepared by the researchers in line with the literature, consists of thirteen items questioning variables such as age, sex, education status, year at school, whether or not the participants have had sexual intercourse, whether or not they have used protection during sexual intercourse, and whether or not they have received education on sexual health in high school and university.[13,15]

Sexually Transmitted Diseases Knowledge Test: This knowledge test was published by Alberta Health Services (2012). Pretest used to assess students' knowledge levels about STDs before and after the sexual health education provided in schools in Canada.[16] The test was adapted into Turkish by Siyez in 2009 based on the Sexually Transmitted

Infection (STI)/HIV. While the original test has 40 items, the Turkish version has 36 items because the four items removed from the test were considered not appropriate for Turkey's conditions and Turkish students. The items numbered 1, 3, 5, 6, 8, 9, 10, 13, 15, 18, 20, 21, 23, 28, 29, 33, 34, and 36 are reverse-coded. The items are answered as 'True (1 point)', 'False', and 'I don't know (0 point)'. The minimum score of the scale is 0, and the maximum score is 36.[15]

Data collection

Study data were collected using an online questionnaire via Google forms. Participation in the study was voluntary. The questionnaire was shared with the students after the purpose and method of the study was explained to them. It took the participants approximately 15 minutes to answer the online questionnaire.

Ethical issues

Before the study was conducted, ethical approval was obtained from Munzur University Non-Interventional Human Research Ethics Committee (Number: 2023/04-06).

The students who were invited to the study were informed about the purpose of the study. They were told that the data obtained from the study would be kept confidential and would be used only for scientific purposes, that they could withdraw from the study at any time, that participation in the study would not have any effect on their life. Then, after their informed consent was obtained, they were included in the study. All the stages of the study were carried out in accordance with the ethical standards established in the Declaration of Helsinki.

Data analysis

The data was analyzed using the SPSS (Statistical Package for the Social Sciences) version 25. In the analysis of the data, descriptive statistics (numbers, percentages, arithmetic mean and standard deviation) were used. Kolmogorov-Smirnov test was used to check whether the data were normally distributed. Mann Whitney U test and Kruskal Wallis analysis were performed for data analysis. Bonferroni correction was performed to determine the difference in multiple comparisons. In the analysis, confidence interval was 95%. p values less than 0.05 was considered significant.

Results

Descriptive characteristics of the students participating in the study were determined. The mean age of the students was 21.09±1.93 and the mean age of the students studying in the West Region (20.95±1.97) was lower than the students of the Eastern Region (21.58±1.66). The mean age group of the Western Region midwifery students 53.1% were in the age group of 21-23 years, 27.1% were first year students, 47.4% lived in a city. The mean age group of the students Eastern Region midwifery students 64.4% were in the age group of 21-23 years, 30.7% were first year students, 42.6% lived in a district. The mean score obtained from the Sexually Transmitted Diseases Knowledge Test by all the students participating in the study was 14.49±3.83. Given that the maximum achievable score on the knowledge test is 36, the results obtained in the study indicate a knowledge level below moderate. There was no statistically significant relationship between the universities and the mean scores the participating students obtained from the Sexually Transmitted Diseases Knowledge Test ($p>0.05$) (Table 1). Data on whether the participating students had received training on sexual health before were determined (Table 2). Accordingly, in the Western and Eastern region, while the rate of the participating students having received education on sexual health in high school was low (34.7%), the rate of the participating students receiving education on sexual health in university was high (Western Region 83.5%-Eastern Region 73.3%). The rate of those who were knowledgeable about STDs was 95.1%-96.0%.

A statistically significant difference was observed between the western university students and eastern university students in terms of the responses they gave to the items 1, 2, 8, 17, 18, 19, 23, 25, 26, 30, 33 and 35 in the Sexually Transmitted Diseases Knowledge Test (Table 4). While the rate of the correct responses given to the items 1-8-18-23 and 33 was higher in the eastern university students, the rate of the correct responses given to the items 2-17-19-25-26-30 and 35 was higher in the western university students (Table 3).

Table 1: Comparison of the Mean Scores Obtained from the Sexually Transmitted Diseases Knowledge Test by Universities

	University in the Western Region X ± SD	**University in the Eastern Region X ±SD**	**All of Student X ±SD**	U	p
Sexually Transmitted Diseases Knowledge Test	14.63±3.60	13.98 ± 4.58	14.49±3.83	17414.00	0.310
	***p<0.05, U= Mann Whitney U test**				

Table 2: Receiving education on sexual health before

Variables		**University in the Western Region**		**University in the Eastern Region**	
		n	**%**	**n**	**%**
Receiving Education on Sexual Health in High School	Yes	128	34.7	35	34.7
	No	241	65.3	66	65.3
Receiving Education on Sexual Health in University	Yes	308	83.5	74	73.3
	No	61	16.5	27	26.7
Being Knowledgeable about STDs	Yes	351	95.1	97	96.0
	No	18	4.9	4	4.0
Total= **470**		369	100	101	100

Table 3: Distribution of Responses given to the Items in the Sexually Transmitted Diseases Knowledge Test by Universities

Sexually Transmitted Diseases Knowledge Test	**University in the Western Region**				**University in the Eastern Region**				**Test Sig.**	
	Correct		**Wrong**		**Correct**		**Wrong**			
	n	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**χ2**	**p**
1. You can catch HIV/AIDS or other STDs by touching a doorknob, toilet seat, or faucet.	124	33.6	245	66.4	54	53.5	47	46.5	13,294	**.000**
2. Statistics indicate that the vast majority of people infected with (who contracted) sexually transmitted diseases are teenagers or young adults.	288	78.0	81	22.0	69	68.3	32	31.7	4.112	**.043**
3. Among the most serious sexually transmitted diseases are only syphilis and gonorrhea.	35	9.5	334	90.5	8	7.9	93	92.1	.233	.629
4. Symptoms of sexually transmitted diseases may not always be noticed.	324	87.8	45	12.2	86	85.1	15	14.9	.502	.478
5. You do not need to see a doctor when the symptoms of sexually transmitted diseases disappear.	7	1.9	362	98.1	4	4.0	97	96.0	1.477	.224
6. You can contract only one sexually transmitted disease at a time.	58	15.7	311	84.3	23	22.8	78	77.2	2.766	.096
7. There are things you can do (You can take some precautions)	355	96.2	14	3.8	97	96.0	4	4.0	.006	.938

to reduce your risk of contracting sexually transmitted infections.										
8. You must be ≥18 years old to be treated for a sexually transmitted disease.*	30	8.1	339	91.9	17	16.8	84	83.2	6.671	**.010**
9. Once you have contracted a sexually transmitted disease, you cannot contract the same disease again.	13	3.5	356	96.5	6	5.9	95	94.1	1.195	.274
10. You will not contract a sexually transmitted disease if you have sexual intercourse for the first time.	6	1.6	363	98.4	3	3.0	98	97.0	.763	.382
11. If you are being treated for a sexually transmitted disease, you must provide the names of people with whom you have had sexual intercourse.	260	70.5	109	29.5	66	65.3	35	34.7	.976	.323
12. You do not need your parents' permission to be treated for a sexually transmitted disease.	206	55.8	163	44.2	47	46.5	54	53.5	2.755	.097
13. You can always tell if a person has a sexually transmitted disease by looking at his or her genitals.	15	4.1	345	95.9	4	4.0	97	96.0	.002	.962
14. Not treating sexually transmitted diseases can cause infertility.	207	56.1	162	43.9	48	47.5	53	52.5	2.348	.125
15. Clean and meticulous people do not contract a sexually transmitted disease.	21	5.7	348	94.3	8	7.9	93	92.1	.681	.409
16. People who choose sexual abstinence are definitely not susceptible to sexually transmitted diseases.	14	3.8	355	96.2	5	5.0	96	95.0	.273	.601
17. Some of the sexually transmitted diseases can be easily treated*	291	78.9	78	21.1	64	63.4	37	36.6	10.302	**.001**
18. All sexually transmitted diseases can be treated and cured*	19	5.1	350	94.9	16	15.8	85	84.2	13.154	**.000**
19. Using condoms is a highly effective method of protection against sexually transmitted diseases.*	323	87.5	46	12.5	68	67.3	33	32.7	23.155	**.000**
20. Only sexually active adults can contract sexually transmitted diseases.	37	10.0	332	90.0	11	10.9	90	89.1	.065	.799
21. Only gay men contract HIV/AIDS.	11	3.0	358	97.0	5	5.0	96	95.0	.935	.333
22. Sexually transmitted diseases can cause a baby to be born with visual impairment.	159	43.1	210	56.9	46	45.5	55	54.5	.194	.659
23. You can catch HIV/AIDS by touching a person with AIDS*	22	6.0	347	94.0	19	18.8	82	81.2	16.444	**.000**
24. Anyone can contract a sexually transmitted disease.	283	76.7	86	23.3	76	75.2	25	24.8	.092	.762

25. A person who has only one sexual partner has a lower risk of contracting a sexually transmitted disease.	340	92.1	29	7.9	81	80.2	20	19.8	12.111	**.001**
26. If you have more than one partner, your risk of contracting a sexually transmitted disease increases.*	347	94.0	22	6.0	89	88.1	12	11.9	4.140	**.042**
27. If you use someone else's syringe, you can contract a sexually transmitted disease.	298	80.8	71	19.2	73	72.3	28	27.7	3.431	.064
28. It is always safe to get a tattoo or piercing.	12	3.3	357	96.7	5	5.0	96	95.0	.656	.418
29. Sexually transmitted diseases are only transmitted through sexual intercourse.	42	11.4	327	88.6	10	9.9	91	90.1	.177	.674
30. The herpes virus causes cold sores (herpes).*	309	83.7	60	16.3	63	62.4	38	37.6	21.929	**.000**
31. Starting to have sexual intercourse at an early age increases the risk of genital warts, while having more than one partner increases the risk of cervical cancer in women.	320	86.7	49	13.3	80	79.2	21	20.8	3.531	.060
32. Having genital discharge is a normal condition for women.	204	55.3	165	44.7	47	46.5	54	53.5	2.440	.118
33. Birth control pills have a protective effect against sexually transmitted diseases*	28	7.6	341	92.4	15	14.9	86	85.1	5.033	**.025**
34. If you know your partner, you will never contract a sexually transmitted disease.	24	6.5	345	93.5	7	6.9	94	93.1	.023	.878
35. Women who are sexually active should visit the physician and have a smear test regularly. *	350	94.9	19	5.1	87	86.1	14	13.9	9.220	**.002**
36. If a sexually transmitted disease is caused by a bacterium, it cannot be cured.	20	5.4	349	94.6	5	5.0	96	95.0	.035	.852

***p<0.05,** **χ2=** Chi-square test

Table 4: Comparison of the means scores obtained from the Sexually Transmitted Diseases Knowledge Test by Universities

		University in the Western Region			University in the Eastern Region		
Variables		**X±SD**	**U / KW**	**p / Bnf**	**X±SD**	**U / KW**	**p / Bnf**
	18-20 years	14.25±3.50			12.03±6.08		
Age	*21-23 years*	14.94±3.71	1.754	0.416	14.14±3.66	18.725	**0.000***
	≥24 years	14.45±3.10			17.25±2.25		
	1 (1)	13.70±3.87			11.70±5.95		
Year at School	*2 (2)*	14.64±2.19	11.999	**0.007***	13.89±4.39	27.684	**0.000***
	3 (3)	15.13±3.75		1<4	14.38±3.37		1<4
	4 (4)	15.18±4.09		1<3	16.44±1.91		1<3
Social Security	*Yes*	14.53±3.18			14.60±3.89		
	No	14.82±4.23	15470.00	0.668	13.29±5.18	968.00	**0.038***

	Income less than expenses	14.81±3.66			14.20±5.11		
Financial Status	*Income equal to expenses*	14.44±3.37			13.80±3.74		
	Income more than expenses	15.34±4.89	0.554	0.758	12.00±4.58	0.668	0.716
Place of Residence	*City (1)*	15.12±4.06			14.50±5.32		
	District (2)	14.14±2.93	8.963	**0.011***	13.44±4.38	0.647	0.724
	Village (3)	14.32±3.37		1>2	14.11±3.06		
Mother's Educational Status	*Elementary school*	14.76±3.70	0.058	0.971	14.14±4.66	5.725	0.057
	High school	14.28±3.46			14.44±2.12		
	Higher education	14.50±2.37			7.66±3.21		
Father's Educational Status	*Elementary school*	14.78±3.66	0.287	0.866	14.15±4.91	0.502	0.778
	High school	14.54±3.64			13.45±3.57		
	Higher education	14.22±3.14			13.77±4.05		
Receiving education on sexual health in high school	*Yes*	15.18±2.95	16.751	**0.000***	14.77±2.65	933.00	0.111
	No	14.34±3.87			13.50±5.29		
Receiving education on sexual health in university	*Yes*	14.88±3.38	6876.00	**0.001***	14.82±3.51	449.00	**0.000***
	No	13.39±4.36			11.66±6.20		
Being knowledgeable about STDs	*Yes*	14.76±3.32	1963.00	**0.006***	14.19±4.45	71.00	**0.031***
	No	12.11±6.83			8.75±5.05		

*p<0.05 U= **Mann Whitney U test,** KW**= Kruskal Wallis test**

Intra-group analysis revealed that there were statistically significant differences between the mean scores the western university students obtained from the Sexually Transmitted Diseases Knowledge Test in terms of the variables such as year at school, place of residence, receiving education on sexual health in high school, receiving education on sexual health in university, and being knowledgeable about STDs (p<0.05), but that there were no statistically significant differences between their scores in terms of the variables such as age, social security, financial status, and education status of the mother and father (p>0.05). Those who received sexual health education in high school and university obtained higher scores than did those who did not receive such education. The mean scores of those who were knowledgeable about STDs were higher than were the mean scores of those who were not knowledgeable (Table 4).

According to the results of the post-hoc Bonferroni analysis, the 3rd year (15.13±3.75) and 4th year (15.18±4.09) students obtained higher mean scores than did the 1st year students (13.70±3.87). The students whose place of residence was a city (15.12±4.06) obtained higher mean scores than did those whose place of residence was a district (14.14±2.93) (Table 4).

As for the Eastern University Students, intra-group analysis revealed that there were statistically significant difference between the mean scores they obtained from the Sexually Transmitted Diseases Knowledge Test in terms of the variables such as age, year at school, social security, receiving education on sexual health in university (p<0.05), but that there were no statistically significant differences between their mean scores in terms of the variables such as place of residence, receiving education on sexual health in high and education status of the mother and father (p>0.05).Those with social security obtained higher mean scores than did those without social security. Those who received education sexual health in high school and university obtained higher mean scores than did those who did not receive such education. According to the results of the post-hoc Bonferroni analysis, the 3rd year (14.38±3.37) and

4th year (16.44±1.91) students' mean scores were higher than were those of the 1st year students (11.70±5.95) (Table 4)

Discussion

In the present study, students studying in midwifery departments of two universities located in the east and west of Turkey were compared in terms of their knowledge of STDs.

According to the latest data released by the Turkish Statistical Institute (TurkStat), young people comprise 15.2% of the population in Turkey, and the decrease in the age of sexual experience causes an increase in the incidence of STDs.[17]

It is desired that students who are educated in health-related fields and who will serve society as health educators in the future should have adequate knowledge about STDs. The mean score obtained from the Sexually Transmitted Diseases Knowledge Test by all the students participating in the study was 14.49±3.83. While the mean score obtained by the western university students was 14.63±3.60, the mean score obtained by the eastern university students was 13.98±4.58. These scores indicate that their knowledge levels were low. There was no statistically significant relationship between the universities and the mean scores the participating students obtained from the Sexually Transmitted Diseases Knowledge Test ($p>0.05$).

In the present study, while the mean number of correct answers given to the Sexually Transmitted Diseases Knowledge Test was 14.49±3.83, the mean number of incorrect answers was 21.50±3.83. The review of studies conducted with university students in the literature revealed that the mean number of the correct answers was 25.00 in Siyez and Siyez's study, and 26.12±5.85 in Karasu *et al*.'s study conducted with nursing students.[15,18] The comparison of the present study with those in the literature in this respect demonstrated that the correct answer rate was low in the present study. Low level of STD knowledge were also found in study conducted by El Tholoth *et al*. (2018) with young individuals.[19] In another study conducted by Dorji *et al*. (2022) with university students, it was found that 53.2% had good knowledge about sexually transmitted diseases.[20] The rates of students' knowledge of the modes of transmission of STDs vary from one study to another. In Aliyu *et al*.'s study (2013), the rate of those who knew the modes of transmission was 75.4%.[21] In Al-Rabeei *et al*.'s study (2012), 41.5% of the students had incorrect information about how HIV is transmitted.[22] In Dlamini *et al*.'s study (2022), the rate of those who were knowledgeable about HIV and AIDS was high, but they obtained low scores from the questions about the transmission of the disease.[23] The results in the literature differed from those of the present study in this regard, which is probably due to the fact that in the present study, all the undergraduate midwifery students whether they were 1st, 2nd, 3rd, or 4th year students were included, that courses on sexual health were given to the 3rd or 4th year students, and that the number of the 3rd and 4th year midwifery students participating in our study was small. Therefore, it is recommended to determine the knowledge levels of the same year students.

The comparison of the responses given to the items of the Sexually Transmitted Diseases Knowledge Test according to universities demonstrated that there were regional differences. However, midwifery education in Turkey is carried out according to the National Core Education Program, and the course plans are similar. Therefore, it is thought that the participants' having insufficient knowledge about STDs is not due to education. Regional differences in STDs were also observed in other studies.[24] In Li *et al*.'s study, the students' knowledge levels of AIDS were investigated and it was determined that their knowledge levels varied by region.[25] Considering that the participants mostly preferred universities in cities close to their hometowns, it can be concluded that they preferred to go to places where cultures were similar to their own culture, which suggests that the difference in their knowledge levels by region may be due to their cultural value systems, judgments and taboos. However, in the present study, while the correct response rates were high for some items of the Sexually Transmitted Diseases Knowledge Test in the western university students, these rates were high for some other items in the eastern university students. Considering the fact that both universities had a curriculum including courses on sexual health, this difference between them might be due to the differences in the topics emphasized during the courses.

The rate of correct responses given by both university students to the item "Sexually transmitted diseases can cause a baby to be born with visual

impairment" was low. While this rate was not at the desired level in Karasu *et al*.'s study.[18] This difference between the present study and studies in the literature is thought to stem from the differences between the study groups.

In both universities, the students' year at school affected their mean scores for the Sexually Transmitted Diseases Knowledge Test. According to the analysis results, the 3rd and 4th year students in both universities obtained higher men scores from the Sexually Transmitted Diseases Knowledge Test than did the 1st year students. As the year at school increased, the students received courses on STDs; thus, their knowledge levels of STDs increased and this was reflected in their mean scores. In this respect, the results if the present study is consistent with those of the studies in the literature, because in those studies, the level of knowledge of STDs increased as the year at school increased too.[26]

In the western university students, there was a statistically significant difference between the mean scores they obtained from the Sexually Transmitted Diseases Knowledge Test in terms of their place of residence. Of them, those residing in a city obtained higher scores than did those residing in the district, which was probably because those living in a big city can access information and services more easily. In Irmak Vural *et al*.'s study, the mean number of correct answers was higher in those living in a city.[27]

In the eastern university students, there was a statistically significant difference between the mean scores they obtained from the Sexually Transmitted Diseases Knowledge Test in terms of their age. Similarly, in several studies, the participants' knowledge levels about STDs increased with age.[4,18] It is thought that as the participants' age increased, their year at school and sexual experience increased, causing them to search for information about STDs; thus their knowledge level about STDs increased. In a study conducted by Santos et al. in 2016, it was found that university students who were younger in age had higher knowledge scores on sexual and reproductive health.[28]

In the present study, of the participants in both universities, those who received education on sexual health obtained higher mean scores from the Sexually Transmitted Diseases Knowledge Test than did those who did not receive such education. As is reported in several studies, while university students studying in the fields of health and medicine are more knowledgeable about these topics because these topics are included in their curriculum, students studying in fields other than health are not knowledgeable enough about these topics.[15,19]

In the present study, there was a statistically significant difference between the mean scores obtained from the Sexually Transmitted Diseases Knowledge Test by the western university students who received education on STDs in high school, Similarly, in several studies in the literature, those who received sexual health education in high school had higher knowledge levels.[18,27] The results of the present study are consistent those of the studies in the literature in this respect. It was concluded that the lack of a significant difference between the mean scores obtained from the Sexually Transmitted Diseases Knowledge Test by the eastern university students who received education on sexual health was probably because the number of students studying at the university located in the east of Turkey was low.

Results in the literature differ from one study to another, which is thought to stem from the differences between the levels of interaction between the parents and the child within the family according to the parents' educational level. In cases in which sexuality is perceived as a taboo or is not talked about within the family, even if the parents' education level is high, it does not have an effect because parents do not share their knowledge of sexuality with young people. It is thought that the increase in the education level of the parents is important because parents may approach young people more moderately and find answers to their questions.

In the present study, there was a statistically significant difference between the mean scores obtained from the Sexually Transmitted Diseases Knowledge Test by all the participants in terms of receiving education on sexual health in the university. In the literature, knowledge levels of those who receive education on sexual health in the university are higher than are knowledge levels of those who do not receive education on sexual health.[27] Although that the level of knowledge increases with education is a desired and expected result, these findings are not supported in some studies in the literature. In Siyez and Siyez's study, those who received education on sexual health had

a higher level of knowledge about STDs than did those who did not receive such education; however, the difference was not statistically significant.[15] It is thought that including sexual health education in the curriculum of universities would be beneficial for students since currently STDs are rapidly spreading.

Conclusion

In the present study, the students studying in the midwifery departments of two universities located in the east and west of the country were compared in terms of their knowledge of STDs. The results revealed that the rate of the correct responses given to the items in the Sexually Transmitted Diseases Knowledge Test by the participants in both universities was low.

While the western university students gave correct responses to some items in the Sexually Transmitted Diseases Knowledge Test, the eastern university students gave correct responses to some other items.

There were statistically significant differences between the knowledge levels about STDs in all the participants in terms of the variables such as year at school, receiving education on sexual health at university. However, the variables such as age and social security status affected the eastern university students' knowledge levels, whereas the variables such as the place of residence and receiving education on sexual health in high school affected the western university students' knowledge levels.

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