

Identification of the Knowledge of First Grade Students in University about Sexually Transmitted Diseases

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ABSTRACT Young people with no or insufficient knowledge about sexually transmitted diseases are at a risk for these diseases. This study was performed with the aim of identifying knowledge level of first grade students in university about sexually transmitted diseases (STDs). Universe of this cross-sectional and descriptive study was composed of 283 first grade students. For obtaining data, general information form and Knowledge Test of Sexually Transmitted Diseases, which is composed of 36 questions, developed in Canada and translated to the Turkish, were used. Mean knowledge level of students was 18.37 ± 6.87 . According to the cases, conditions causing highest risk of STDs were unprotected sex (72.8%) and presence of multiple partners (61.8%). Knowledge about STDs showed significant difference according to the age, educational status and faculty ($p < 0.05$). Regular education about STD for improving knowledge level of students is suggested.

INTRODUCTION

Female and male students without adequate knowledge are in the risk group because STDs are mostly seen in age 15-35, which is when sexual activity is highest (Serter 2006; Yurdakul et al. 2005; Çoskun et al. 2006; Deniz et al. 2004; Siyez et al. 2009). In various studies performed in the country, the initiation age of sexual activity was found as 17-23 years in girls and 16.5-17.2 years in boys (Yurdakul et al. 2005; Siyez et al. 2009; Aras et al. 2004). In some studies, it was found that rate of sexual intercourses among university students varies between sixteen percent and twenty-seven percent (Çoskun et al. 2006; Deniz et al. 2004; Siyez et al. 2009). In the studies performed with adolescents, these rates also vary between 9.3 percent and 22.1 percent (Kara et al. 2003; Ulu et al. 2014). In various studies performed in other countries, initiation age of sexual intercourses especially varies between 12 and 15 years in Chinese, Uganda, Ethiopia and South Africa (Kleppa et al. 2014; Zhang et al. 2013; Sekirleme et al. 2001; Shiferaw et al. 2011).

Unprotected sex may cause health risks such as STDs, unintended pregnancies and insecure abortions. Sexually transmitted diseases are generally infectious diseases starting with acute signs and symptoms and frequently become chronic. If untreated, STDs may cause a simple eye infection or even infertility and death. However, it has been known that preventing STDs is easier and less expensive than treating STDs. It has been thought that informing individuals about protection from STDs and signs of STDs may increase awareness about this issue and therefore decrease prevalence of STDs (Brown et al. 1987).

University students at the very beginning can experience adaptation problems due to the initiation of a different lifestyle. They are likely to encounter different experiences and insecure behaviors. Sexual behaviors are among these behaviors. Studies performed until today are insufficient for reflecting knowledge level of first grade students in university about STDs. This study was performed with the aim of identifying knowledge level of first grade students in university about STDs.

MATERIAL AND METHODS

Universe of this cross-sectional and descriptive study was composed of first grade students of Uludag University Faculty of Veterinary, Faculty of Arts and Sciences, Faculty of Education,

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Vocational School of Technical Sciences and Vocational School of Health in spring period of the 2012-2013 academic year, whereas the sample of this study was composed of 283 students who were without perception deficits and volunteered to participate. For obtaining data, general information form and Knowledge Test of Sexually Transmitted Diseases, which is composed of 36 questions, developed in Canada and translated to the Turkish by Siyez were used. 36 is the highest score that can be obtained from the knowledge test. Data was examined in SPSS 20.0 program and means, percentages, Pearson's correlation test, Kruskal-Wallis test and Mann-Whitney U test were used for evaluation. Written approval was obtained from deans of faculties and Directors of Vocational Schools for performing the study, and consent was obtained from the Uludag University Ethics Committee.

RESULTS

Mean age of students was 20.67 ± 2.25 years and 72.1 percent of the students were girls. Fifty-eight percent of students were studying for a Bachelor's Degree and 20.1 percent of students were studying history (Table 1). 86.9 percent of students stated that they had adequate information about AIDS and 94.7 percent of students stated that AIDS is transmitted sexually. 58.3 percent of students stated that they have knowledge about sexually transmitted diseases (STDs) (Table 2). 26.1 percent of students stated that they were educated about this issue. 63.6 per-

cent of students stated that they need information about STDs and seventy-seven percent of students told that they will attempt to train themselves about this issue if it is possible. 82.3 percent of cases stated that they could easily visit a doctor if they have suspicion about sexually transmitted diseases. Mean knowledge level of students was 18.37 ± 6.87 (Table 3). Very few of the students were informed about sexually transmitted diseases before. More than half of the students need to get information about it. Students' knowledge on STDs is inadequate.

Most common first signs of STD were vaginal discharge (28.9%), irregular menstruation (23.5%), headache (10.6%) and lower abdominal pain (10.2%). According to the cases, conditions causing highest risk of STDs were unprotected sex (72.8%) and having multiple partners (61.8%) (Table 4). It was found that most common symptoms were vaginal discharge and irregular menstruation in the students. Students have multiple partners and engage in unprotected intercourse, more than half the times.

Knowledge about STDs showed significant difference according to the age, educational status and faculty ($p < 0.05$) (Table 5). Knowledge about STD in cases showed significant difference according to educational status, admitting physician for suspected STDs, knowing transmission ways of STDs other than sexual intercourse, wanting lessons about STDs in university, thinking testing for STDs before marriage as obligation and being aware of protecting from STDs ($p < 0.05$) (Table 6). It was found that there are significant differences among the level of knowledge, level of education, age and attitude.

Table 1: Distribution of socio-demographic features of cases

Name of covariate	n	Percent (%)
Age	20.67 ± 2.25	Range = 18-25
Gender		
Girl	204	72.1
Boy	79	27.9
Educational Level		
License	164	58
Graduate school	119	42
Faculty		
Veterinary	29	10.2
History of Art	33	11.7
Nursery	33	11.7
Sociology	28	9.9
English Teaching	31	11
History	57	20.1
Biology	21	7.4
Food, Graphic Design	51	18

DISCUSSION

The study was performed with 283 patients studying in first grade of four faculties and one graduate school, and willing to participate. Many young people who are sexually active have their first sexual intercourse in early ages with inadequate sexual knowledge. Initiation age to the first sexual intercourse is an important risk factor for having sexually transmitted diseases. Cultural factors in countries affect initiation age of first sexual intercourse. In China, which has an eastern culture like this country, pre-marital sexual relationships are not well accepted. In a study performed in China, twenty-four percent of university students stated that pre-marital sexual relationships are not appropriate, seven-

Table 2: Distributions of features related with knowledge level of cases about sexually-transmitted diseases (N=283)

Name of covariate		n	Percent (%)
<i>Diseases which are known</i>			
AIDS	Not known	37	13.1
	Known	246	86.9
Gonorrhea/Syphilis	Not known	180	63.6
	Known	103	36.4
Syphilis	Not known	215	76
	Known	68	24
Hepatitis B	Not known	131	46.3
	Known	152	53.7
Hepatitis C	Not known	173	61.1
	Known	110	38.9
Genital fungal infection	Not known	154	54.4
	Known	129	45.6
Genital wart	Not known	232	82
	Known	51	18
Genital herpes	Not known	235	83
	Known	48	17
<i>Diseases Which are known as Sexually-transmitted</i>			
AIDS	Not sexually-transmitted	15	5.3
	Sexually transmitted	268	94.7
Gonorrhea/Syphilis	Not sexually-transmitted	184	65
	Sexually transmitted	99	35
Syphilis	Not sexually-transmitted	196	69.3
	Sexually transmitted	87	30.7
Hepatitis B	Not sexually-transmitted	198	70
	Sexually transmitted	85	30
Hepatitis C	Not sexually-transmitted	224	79.2
	Sexually transmitted	59	20.8
Genital fungal infection	Not sexually-transmitted	195	68.9
	Sexually transmitted	88	31.1
Genital wart	Not sexually-transmitted	230	81.3
	Sexually transmitted	53	18.7
Genital herpes	Not sexually-transmitted	225	79.5
	Sexually transmitted	58	20.5
Having knowledge about STDs	Yes	165	58.3
	No	118	41.7
Signs of STDs (n=165)	Not known	90	54.5
	Known	75	45.5
Protection from STDs (n=165)	Not known	51	30.9
	Known	114	69.1
Treatment of STDs (n=165)	Not known	129	78.2
	Known	36	21.8
Ways of obtaining information about STDs	Friends	27	9.5
	Family	15	5.3
	Newspaper, magazines and books	53	18.7
	TV and radio	31	11
	Health care professional	42	14.8
	Other	115	40.6

ty-six percent of students stated that premarital sexual relationships are acceptable, twenty-one percent of students stated that they had sexual intercourse, and forty-five percent of students stated that they are sexually active (Zhang et al. 2013). In this study, 26.5 percent of students considered pre-marital sexual relationships as risky behaviors for STDs. Results of this study showed similarity with results of other studies.

Ways of obtaining information about STDs in students vary according to different cultures. In a study performed in Uganda, most used information source of students were friends, newspapers and educations in schools, respectively (Sekirime et al. 2001). In China, it was found that STD knowledge of students was limited and students mostly use the Internet (76%) as an information source (Zhang et al. 2013). In a study by

Table 3: Distribution of features related with education, thought and behavior of cases about sexually-transmitted diseases (N=283)

Name of covariate		<i>n</i>	Percent (%)
Status of receiving STD education	Yes	74	26.1
	No	209	73.9
Education place (n=74)	School	72	97.3
	Public education center	1	1.4
Education type (n=74)	Student camp	1	1.4
	Lesson	59	79.7
	Seminar	8	10.8
	Conference	7	9.5
Duration of education (day)		2.46±2.68	Range = 1-14
Duration of education(hour)		4.69±5.69	Range = 1-28
Knowing HPV vaccine	Yes	38	13.4
	No	245	86.6
Being vaccinated with HPV	Yes	7	2.5
	No	276	97.5
Need for obtaining information about STDs	Yes	180	63.6
	No	103	36.4
Thinking about attending training about STDs	Yes	218	77
	No	65	23
Admitting to a physician for STD suspicion	Yes	233	82.3
	No	50	17.7
Transmission of STDs from non-sexual ways	Yes	187	66.1
	No	96	33.9
Transfection of STDs by healthy-apparent individuals	Yes	248	87.6
	No	35	12.4
Treatment of STDs	Yes	207	73.1
	No	76	26.9
Lessons about STDs in university curriculum	Yes	243	85.9
	No	40	14.1
Pre-marital testing for STDs	Yes	250	88.3
	No	33	11.7
Protection method from STDs	Being vaccinated	27	9.5
	Using condoms during sexual intercourses	21	7.4
	Both of them	181	64
	I don't know	54	19.1
Knowledge level about STDs		18.37±6.87	Range = 0-30

Akalpler and Eroglu (2015), it was found that the students in the study had received information against STIs. 56.5 percent students stated the first three sources of information for STIs as schools (34.4%), the Internet (31.0%) and television or radio (18.0%). In a study by Kaya et al.(2007), friends were in first rank (69.7%) of information source of students. This was followed by books (56.2%), media (42.4%), family (36.2%), conferences (11.8%) and healthcare workers (7.4%). In a study by Özan et al. (2004), it was identified that first information resources were the students' friends in adolescence, in predominantly female parents, books, newspaper and magazines, in men newspaper, magazines and television. In a study by Akça et al. (2016), 94.2 percent of students reported that they were previously informed about STDs and

information resources were determined to be school (80.8%), Internet (51%) and healthcare personnel (Akça et al. 2016). In this study, information sources of students were newspaper, magazines and books (18.7%), healthcare workers (14.8%) and TV and radio (11%). 97.3 percent of students had received education on STD in school. This study results showed similarities with other study results.

Informing individuals about preventing STDs is essential for facilitating development of positive behavior and habits. Health education is one of the ways for providing this information (Tavoosi et al. 2004). In a study performed by Miller and Downer (1988), it was found that knowledge level about Acquired Immune Deficiency Syndrome (AIDS) increased from thirty-four percent to eighty-two percent with 50 minutes of training after 8 weeks.

Table 4: Distribution of information related with preliminary signs of STDs and conditions causing risk of STD (N=283)

Name of covariate		n	Percent (%)
<i>Signs of STDs</i>			
Fever	Not present	275	97.2
	Present	8	2.8
Dysuria	Not present	277	97.9
	Present	6	2.1
Swelling on groin	Not present	277	97.9
	Present	6	2.1
Nausea	Not present	272	96.1
	Present	11	3.9
Itching in genital area	Not present	257	90.8
	Present	26	9.2
Eruptions in genital area	Not present	276	97.5
	Present	7	2.5
Ulcer in genital area	Not present	282	99.6
	Present	1	0.4
Lower abdominal pain	Not present	254	89.8
	Present	29	10.2
Headache	Not present	253	89.4
	Present	30	10.6
Weight loss	Not present	271	95.8
	Present	12	4.2
Diarrhea	Not present	280	98.9
	Present	3	1.1
Itchy eruptions in genital area	Not present	279	98.6
	Present	4	1.4
Sore throat	Not present	265	93.6
	Present	18	6.4
Genital warts	Not present	278	98.2
	Present	5	1.8
Pain during sex	Not present	277	97.9
	Present	6	2.1
Anal discharge	Not present	280	98.9
	Present	3	1.1
Vaginal discharge (n=204)	Not present	145	71.1
	Present	59	28.9
Irregular menstruation (n=204)	Not present	156	76.5
	Present	48	23.5
Vaginal bleeding (n=204)	Not present	202	99.0
	Present	2	1.0
Penil discharge (n=79)	Not present	74	93.7
	Present	5	6.3
Testicular pain (n=79)	Not present	76	96.2
	Present	3	3.8
<i>Conditions Causing Risk of STDs</i>			
Unprotected sex	Not present	77	27.2
	Present	206	72.8
Insufficient knowledge	Not present	92	32.5
	Present	191	67.5
Rape	Not present	143	50.5
	Present	140	49.5
Random sexual intercourses	Not present	120	42.4
	Present	163	57.6
Pre-marital sexual relationships	Not present	225	79.5
	Present	58	20.5
Extramarital sexual relationships	Not present	208	73.5
	Present	75	26.5
Multiple sexual partners	Not present	108	38.2
	Present	175	61.8

Table 5: Distributions of difference in knowledge STDs according to the sociodemographic features (N=283)

Name of covariate	Mean± SD	Significance
Age		r=0.263** p=0.000
Gender		
Girl	18.02± 6.73	U=9.147.000 Z=1.176 p=0.077
Boy	19.26± 7.18	
Educational Level		
Licence	17.04± 6.51	U=12.404.000 Z=3.898 p=0.000
Graduate School	20.20± 6.96	
Faculty		
Veterinary	21.68± 6.68	KW=86.126 p=0.000
History of Art	17.54± 5.30	
Nursery	26.51± 3.55	
Sociology	18.78± 4.86	
English Teaching	15.77± 6.56	
History	15.73± 7.16	
Biology	18.47± 7.46	
Food, Graphic Design	16.00± 5.34	

detected in three percent of students, however HIV was not observed different from other stud-

ies. In same study, it was reported that most of the students had false information about protection from STDs (Zhang et al. 2013). In a study performed in Uganda, it was identified that university students know about gonorrhea and HIV best (Sekirime et al. 2001). In the study performed by Ozdemir et al. (2003), and the other study performed by Akça et al. (2016), AIDS/ HIV was the most known sexually transmitted disease. In a study performed in Belgium with students of a university, it was found that students in faculties of healthcare have most knowledge about STDs (Degroote et al. 2004). In a study performed by Beydag (2007), knowledge levels about HIV were found through the nursery (15.30±2.09) and health workers (16.50±2.52). These results showed a difference from other studies. This may be related with study sample (healthcare students) of other studies and this study's sample, which consisted of students mostly from non-healthcare schools and first class completely. In a study conducted by Elkin (2015), the students know most about AIDS as a disease (95.7%), syphilis (52.2%), hepatitis B (69.6%),

Table 6: Distribution of difference related with knowledge level about STDs according to the education, thought and behaviour (N=283)

Name of covariate		Mean± SD	Significance
Status of receiving STD education	Yes	22.54± 6.66	U=3.685.000 Z=-6.669 p=0.000
	No	16.89± 6.33	
Need for obtaining information about STDs	Yes	18.52± 6.68	U=9.220.500 Z=0.075 p=0.940
	No	18.10± 7.22	
Thinking about attending training about STDs	Yes	18.55± 6.73	U=6.837.00 Z=-0.429 p=0.668
	No	17.73± 7.35	
Admitting to a physician in a suspicion of STDs	Yes	18.97± 6.65	U=4.279.500 Z=-2.947 p=0.003
	No	15.54± 7.23	
Transferring STDs with non-sexual ways	Yes	19.78± 6.60	U=5.711.500 Z=5.015 p=0.000
	No	15.62± 6.58	
Transmission of STDs by healthy-apparent individuals	Yes	18.98± 6.59	U=2.706.500 Z=-3.609 p=0.000
	No	14.00± 7.34	
Treatment of STDs	Yes	18.85± 6.85	U=6.767.500 Z=-1.803 p=0.071
	No	17.03± 6.80	
Lessons about STDs in university	Yes	19.01± 6.58	U=3.132.500 Z=-3.606 p=0.000
	No	14.47± 7.36	
Pre-marital testing for STDs	Yes	18.94± 6.64	U=2.500.000 Z=-3.682 p=0.000
	No	14.06± 7.19	
Protection methods from STDs	Being vaccinated	15.29± 5.89	KW=28.024 p=0.000
	Using condoms during sexual intercourses	20.33± 6.11	
	Both of them	19.71± 6.34	
	I don't know	14.64± 7.54	

hepatitis C (60.3%) and fungus (67.4%). In the study performed by Bakir et al. (2015), it was found that sixty-four percent students did not receive education about sexual health. In the study performed by Ergün et al. (2015), 92.7 percent of those surveyed reported that they previously received information about sexual health. In this study, 58.3 percent of students stated that they have knowledge about sexually transmitted diseases (STDs). Most well-known STDs by students were AIDS (86.7%), hepatitis B (53.7%), genital fungus infections (45.6%), hepatitis C (38.9%) and syphilis (36.4%). Results of the current study showed similarities with other studies. Reason of highest awareness about HIV among students maybe related with predominance of information and awareness studies conducted by governments and various institutions.

In a study performed in South Africa, it was found that presence of multiple sexual partners and high prevalence findings of STDs, especially HIV were detected. It is effective for two-fold increased risk of especially HIV (Kleppa et al. 2014). In the study performed in university students with risky behaviors for HIV, it was found that people with risky behaviors like early onset of sexual intercourses, alcohol or substance abuse and multiple sexual partners use very few condoms (Shiferaw et al. 2011). In a study by Oristoki (2010), it was found that condom use is low in university students in healthcare schools and it is only used for preventing unintended pregnancies, and not for protecting from STDs. In a study of Akalpler et al. (2015), it was found that the students who are sexually active had their first sexual experience with unknown people (44.8%) and did not use any protection during sexual intercourse (45.9%). In the study performed by Bakir et al. (2015), while 39.1 percent students expressed that they had experienced sexual intercourse, 38.2 percent of students reported that they not make use of contraceptive methods. In the study performed by Ergün et al. (2015) it was found that to protect against sexually transmitted diseases, 43.8 percent of the students use a condom, 39.6 percent practice monogamy and condom use must have given their answers. In the study performed by Vural et al. (2015) while 31.3 percent students expressed that they had experienced sexual intercourse, 41.3 percent of them reported that they did not use any contraceptive methods.

In this study, students similarly stated having unprotected sex (72.8%) and presence of multiple sexual partners (61.8%) as most risky behaviors.

In a study performed in Iran, it was found that ninety-four percent of students want to know more about HIV/AIDS (Tavoosi et al. 2004). In this study, 63.6 percent of students stated that they need more information about STDs and seventy-seven percent of students stated that they would attend lessons about this issue if it is available. In general of studies performed until now, it has been demonstrated that students have little knowledge about STDs and need information.

In literature, it was apparent that students have moderate or higher level of knowledge about STDs (Yurdakul et al. 2005; Siyez et al. 2009; Demirtas 2005; Karabulutlu 2011).

Knowledge level of students was 18.37 ± 6.87 in this study. Groups with highest knowledge level about STDs were the nursery group (26.51 ± 3.55) and veterinary group (21.68 ± 6.68). In addition, knowledge level score showed significant difference according to the age, educational status and faculty. Being in the field of medicine and curriculum related with healthcare, it is not surprising that nursery and veterinary faculties had highest scores. Though it showed variation with age and educational status, individuals were aware of their need for education. Therefore, their tendencies towards searching and learning were also high.

In this study, the knowledge about STD in cases showed significant difference according to educational status, admitting physician for suspicion of STD, knowing transmission ways of STDs other than sexual intercourse, wanting lessons about STDs in university, thinking testing for STDs before marriage as obligation and being aware of protecting from STDs. Due to majority of students being from non-medical faculties and their moderate level of knowledge about STDs, this is not surprising.

In the study by Pinar et al. (2009), 76.2 percent of the students stated that they know about protection methods from STDs and 23.8 percent of students stated that they know the signs of STDs. In a study conducted by Elkin (2015), the students' sexually transmitted symptoms of disease were listed as wounds of the external genitalia of 66.8 percent and 52.2 percent groin pain, 54.2 percent of menstrual irregularity, 42.9 per-

cent of impotence, 53.6 percent of the external genitalia itch, fifty percent of difficulty in urination and burning, 54.3 percent vaginal or penile discharge, 43.7 percent back pain and forty-four percent as pain during intercourse. In this study, it was found that initial symptoms of STDs in students were discharge in vaginal area (28.9%), irregular menstruation (23.5%), headache (10.6%) and lower abdominal pain (10.2%). In addition, 82.3 percent students stated that they could easily visit a doctor if they have a suspicion related with sexually transmitted diseases. Awareness level about preliminary signs of STDs will rise as knowledge level of students' increases. Therefore, it is thought that STDs may be detected earlier and treatment success may be higher.

CONCLUSION

Knowledge of students about STDs is not sufficient. It can be concluded that university students participated in this study have moderate level of knowledge about sexually transmitted diseases and issues, which they do not know are more prominent than issues, which they know wrongly.

RECOMMENDATIONS

It is suggested that regular education about STD for improving knowledge level of students is suggested.

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