

# Examining the Relationship between the Knowledge of Sexually Transmitted Diseases and Sexual Myths among University Students in Turkey

## Abstract

**Objective:** The purpose of this study is to evaluate the level of knowledge among university students on sexually transmitted diseases (STDs) and to compare the level of knowledge of this sample on STDs and their sexual myths. **Methods:** The sociodemographic data of 200 university students studying at several universities in Turkey randomly selected between January and March 2019 were evaluated with the “Sociodemographic Questionnaire,” their knowledge of STDs with the Sexually Transmitted Diseases Knowledge Questionnaire (STDKQ), and their beliefs in sexual myths with the Sexual Myths Scale (SMS). **Results:** There was no difference between the STDKQ and the SMS in terms of demographic variables. However, differentiation was seen between the “sexual behavior,” which is one of the subscales of sexual myths, and STDs. The STDKQ scores revealed that individuals who were previously informed received higher scores than those who did not. The level of knowledge about STDs was higher in men than in women. **Conclusion:** The knowledge of STDs among university students and their beliefs in sexual myths were evaluated based on sociodemographic variables. According to the results, we obtained from our research to increase the level of knowledge about STDs, and for the healthy development of sexual behavior, formal education including sexual health issues should be provided, research should be done for each region in Turkey on this subject, and in line with the results, necessary information should be provided regarding sexual health.

**Keywords:** Sexual myths, sexually transmitted diseases, university students

## Introduction

Sexuality is one the fundamental components of human life. Sexual act is influenced by attraction, availability, fantasy, and the actual act.<sup>[1]</sup> Gender is defined as the pattern of characteristics pertaining to masculinity and femininity and has been seen as binary. There is a distinction between biological sex and gender as a role: Gender role is the manner in which individuals express their status in the society.<sup>[2]</sup> Gender identity refers to one’s sense of oneself as male, female, or of unidentified gender.<sup>[3]</sup> Sexual orientation refers to the sex of those to whom one is sexually and romantically attracted.<sup>[4]</sup> Although it was presented by Kinsey about 60 years ago, the recognition

of sexual orientation as a spectrum happens gradually.<sup>[5]</sup> Sexual fluidity has been defined as situation-dependent flexibility in sexual responsiveness, which may manifest in changes in sexual orientation identity over time.<sup>[6]</sup>

Sexually transmitted diseases (STDs) are one of the factors that adversely affect public health. STDs are transmitted from person to person through sexual intercourse. STDs are transmitted through blood, semen, different body fluids, or by direct contact with the infected body area. There are many STDs including hepatitis B and C, urogenital fungal infections, trichomoniasis, and AIDS.<sup>[7]</sup> According to the World Health Organization, sexually transmitted infections (STIs) are one of the five types of disease, for which adults around the world most commonly

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seek medical help.<sup>[8]</sup> Physicians and other healthcare providers play a critical role in preventing and treating STDs.<sup>[9]</sup> More than 1 million STIs are acquired every day worldwide. Each year, there are an estimated 376 million new infections with 1 of 4 STIs: chlamydia, gonorrhea, syphilis, and trichomoniasis.<sup>[10,11]</sup> The UNAIDS released in July 2019 the updated estimates for HIV figures worldwide. Overall, 37.9 million people are currently living with HIV, more than 80% in developing countries and mostly in Sub-Saharan Africa. Roughly, 1.7 million 12 new HIV infections occurred during the year 2018, which represents 5000 new infections per day Overall, 61% of these new infections occur in Sub-Saharan Africa, 10% in children, half of them in women, and one-third in adolescents and youth. Finally, 770,000 persons died from AIDS during the year 2018, being a significant proportion of them late presenters. Clearly, the AIDS pandemic is slowing down but not as rapidly as desirable.

Rise in marriage age in Turkey is related to the increase in education level and job status. Therefore, having sexual intercourse at a younger age and having sexual intercourse before marriage are rising further. Since young people start having sexual intercourse at an earlier age, the risk of contracting these STDs is also increased. Failure of young people to get accurate information about sexuality or to be misinformed can cause difficulties when struggling with these diseases.<sup>[12]</sup> From a public health perspective, it is necessary to ensure that young people receive education from the right sources about STDs in the early stages and know how to prevent these diseases.

Sexual myths consist of exaggerated and unrealistic expectations. They are also referred to as sexual fabrication, and these sexual myths have a very important effect on living a healthy sex life in the society. Beliefs that are spreading by word of mouth, have changed shape with the imagination of people in society, and are not linked to any scientifically proven data are called sexual myths, and these negative thoughts have nothing to do with the reality of sexuality.<sup>[13]</sup>

The primary purpose of this study is to compare different sociodemographic groups in terms of information about STD and sexual myths. The second purpose of the study is to investigate the relationship between the level of knowledge about STDs and sexual myths.

## Methods

This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of Üsküdar University noninterventional studies ethics committee on April 25, 2019, with the number 61351432-/2019-197.

## Participants

The population subject to the research is university students, and the sample is university students studying at several universities in the Marmara region of Turkey, enrolled by simple random selection between January and March 2019, interviewed face to face or by mail.

The design of our study is cross-sectional, observational, and descriptive. The sociodemographic data of the participants were evaluated using the “Sociodemographic Questionnaire,” their knowledge of STDs with the Sexually Transmitted Diseases Knowledge Questionnaire (STDKQ), and their beliefs in sexual myths with the Sexual Myths Scale (SMS).

In addition, sexual orientation, gender, age, sexual behavior, masturbation, sexual violence, sexual intercourse, and sexual satisfaction scores, which are SMS subscales, were also included in our study. Independent categorical variables were the sociodemographic data of the participants, and dependent (outcome) numerical variables were the scores of STDKQ, SMS, and SMS subscales. Using the G\*POWER 3.1 program, the sample size was determined as  $n = 200$  with 2 hypotheses, type 1 error = 0.05, power = 0.80, effect size  $d = 0.40$ .<sup>[14]</sup>

The criteria for inclusion were volunteering to participate in the study and the absence of any physical or mental illness.

## Materials

### *Sociodemographic Data Form*

The sociodemographic data form is used to obtain detailed information about the individuals who contributed to the questionnaires applied. The information obtained will provide information on the effect of different variables in the research. This form filled in by the interviewer.

### **Sexual Myths Scale**

SMS is a scale consisting of 28 questions. The Sexual Myth Assessment Form was developed by Zilbergeld, 1999.<sup>[15]</sup> Although being a Likert-type scale, it is considered valid with 0.91 points. Possible answers are “I Never Agree,” “I Disagree,” “I am Undecided,” “I Agree Partially,” and “I Strongly Agree.”

It was adapted to Turkish by Golbası *et al.*, 2016.<sup>[16]</sup>

### **Sexually Transmitted Diseases Knowledge Questionnaire**

This is a knowledge questionnaire about STDs. This test, originally called STI/HIV pretest, consists of 40 items. STDKQ was developed by Brislin, 1970.<sup>[17]</sup> It was adapted to Turkish by Siyez and Siyez, 2009,<sup>[18]</sup> and the number of items was reduced to 36 by removing four items that are not suitable for the country conditions and Turkish students. Possible answers are “correct,” “false,” and “I don’t know.”

**Data analysis**

Two hundred people participating in the research were divided into groups according to the sociodemographic variables. Normal distribution was assessed by skewness and sharpness in the histogram, Q-Q plot and Kolmogorov–Smirnov tests. Variance homogeneity was evaluated by Levene test. The differences between the means of two independent groups were tested with the *t*-test, while the differences between the means of more than two groups were tested with one-way ANOVA. Type-I error value was accepted as  $\alpha = 0.05$ .

**Results**

Sixty percent ( $n = 120$ ) of the 200 participants were women and 40% ( $n = 80$ ) were men. According to the age data of the participants, 9.5% ( $n = 19$ ) aged between

17 and 19 years, 26% ( $n = 52$ ) aged between 20 and 22 years, 42% ( $n = 84$ ) aged between 23 and 25 years, and 22.5% ( $n = 45$ ) were older than 26 years. According to the data on the marital status of the participants, 13% ( $n = 26$ ) were married. According to the status of getting information about STD, 79.5% had prior information while 20.5% did not. When they were asked whether they request to get information about STDs, 89.5% were willing to get information about STDs, while 10.5% were not [Table 1a].

When the “barrier,” “oral contraceptive,” and “withdrawal” options under “protection status during sexual intercourse” variable related to protection from sexual diseases were examined, no significant difference was found between sexual myths and sexual myths subscales. While the percentage of students who marked

**Table 1a: Comparison of participants’ scale scores according to sociodemographic data**

Variables	n (%)	STDKQ total		SMS total		Sexual orientation <sup>†</sup>		Gender <sup>†</sup>	
		Average (SD)	t (P)	Average (SD)	t (P)	Average (SD)	t (P)	Average (SD)	t (P)
Gender									
Women	120 (60)	12.12 (4.15)	-3.183*	50.70 (15.84)	-1.121	10.57 (4.64)	1.946*	8.83 (3.33)	-3.196*
Men	80 (40)	14.26 (5.30)	(0.002)	53.41 (18.06)	(0.264)	9.32 (4.86)	(0.049)	10.62 (4.58)	(0.002)
Marital status									
Married	26 (13.0)	13.69 (5.30)	0.818	59.38 (20.91)	2.509	13.73 (5.18)	4.388**	10.69 (4.92)	1.578
Single	174 (87.0)	12.87 (4.67)	(0.414)	50.64 (15.83)	(0.013)	9.52 (4.45)	(<0.001)	9.37 (3.79)	(0.116)
Sexual act within last year									
Yes	126 (63.0)	13.12 (4.94)	1.578	48.78 (16.19)	-3.384**	9.06 (4.29)	-4.704**	9.37 (3.96)	-0.821
No	74 (37.0)	12.72 (4.43)	(0.116)	56.89 (16.63)	(<0.001)	11.79 (5.04)	(<0.001)	9.85 (3.98)	(0.412)
STD prior information									
Yes	151 (79.5)	11.48 (4.69)	-3.011*	51.22 (17.32)	-0.937	10.01 (4.86)	-0.328	9.51 (4.12)	-0.240
No	49 (21.5)	13.02 (4.54)	(0.003)	53.97 (14.45)	(0.357)	10.29 (4.37)	(0.743)	9.68 (3.37)	(0.811)
STD request for information									
Yes	179 (89.5)	13.02 (4.66)	0.415	50.87 (16.5)	-2.257*	9.76 (4.64)	-2.730*	9.32 (3.88)	-2.376*
No	21 (10.5)	12.57 (5.59)	(0.678)	59.52 (17.15)	(0.025)	12.71 (4.99)	(0.007)	11.47 (4.29)	(0.018)
Characteristic	n (%)	post-hoc	F (P)	post-hoc	F (P)	post-hoc	F (P)	post-hoc	F (P)
Methods of sexual protection									
Withdrawal	62 (31.0)	1, 3	3.139*	-	0.364	-	2.139	-	0.383
OCs	27 (13.5)		(0.046)		(0.695)		(0.120)		(0.682)
Barrier	111 (55.5)								
Education level (mother)									
Illiterate	7 (3.5)	-	0.385	2, 5	4.067*	-	1.809	2, 5	2.798*
Primary school	47 (23.5)		(0.820)		(0.003)		(0.129)		(0.027)
Secondary school	32 (16.0)								
High school	60 (30.0)								
University	54 (27.0)								
Education level (father)									
Illiterate	2 (1)	-	0.405	-	1.912	-	1.396	-	2.007
Primary school	41 (20.5)		(0.805)		(0.110)		(0.237)		(0.095)
Middle school	32 (16.0)								
High school	61 (30.5)								
University	64 (32.0)								

\* $P < 0.05$ , \*\* $P < 0.001$ , <sup>†</sup>SMS subscales. SD: Standard deviation, n: Number of sample, t: Independent group t-test value, F: One-way ANOVA F test

the barrier variable was 55.5%, those who selected the oral contraceptive option were 13.5% and the withdrawal were 31.0% [Tables 1a-c].

A significant relationship was found between the “sexual behavior” subscale of sexual myths and the scores of STD. All the subscales of the SMS had a positive significant correlation with each other. The comparison of STDKQ, SMS, and sexual myths subscales in terms of gender revealed higher STDKQ scores in men than in women. With regard to the “sexual orientation,” which is one of the SMS subscales, women’s scores were higher than men, and in other SMS subscales, the scores of men in “gender,” “age and gender,” and “sexual violence” were higher than that of women [Tables 1b and c].

Marital status, which is a demographic variable, did not show a statistically significant difference in terms of

STDKQ scores. The level of belief in sexual myths was higher in married individuals compared to singles. “Sexual orientation” and “sexual violence,” which are the subscales of sexual myths, differed significantly between married and single people. Sexual orientation and sexual violence scores were found higher in married students. Belief in sexual myths has been evaluated according to the variable of “having sexual intercourse within the past year,” and students who have not had sexual intercourse within the past year had higher levels of belief in sexual myths. There was a significant difference in the demographic variable of “request for information about STDs” in terms of sexual myths. People who do not want to receive information about STDs had higher sexual myth scores [Tables 1a-c].

When the demographic variable “education level of the mother” was examined, no significant difference was found

**Table 1b: Comparison of participants’ scale scores according to sociodemographic data**

Variables	n (%)	Age and gender <sup>†</sup>		Sexual behavior <sup>†</sup>		Masturbation <sup>†</sup>	
		Average (SD)	t (P)	Average (SD)	t (P)	Average (SD)	t (P)
Gender							
Women	120 (60)	7.11 (2.81)	-2.487*	4.40 (2.07)	-3.221*	4.09 (1.96)	1.284
Men	80 (40)	8.28 (3.83)	(0.014)	5.51 (2.76)	(0.001)	3.73 (1.83)	(0.201)
Marital status							
Married	26 (13.0)	7.26 (3.25)	-0.521	5.57 (2.83)	1.642	4.42 (2.17)	1.354
Single	174 (87.0)	7.63 (3.31)	(0.603)	4.74 (2.35)	(0.102)	3.87 (1.86)	(0.177)
Sexual act within the last year							
Yes	126 (63.0)	6.88 (2.81)	-4.034**	4.65 (2.37)	-1.456	3.52 (1.75)	-4.283**
No	74 (37.0)	8.77 (3.72)	(<0.001)	5.17 (2.51)	(0.147)	4.67 (1.97)	(<0.001)
STD prior information							
Yes	151 (79.5)	7.49 (3.32)	-0.742	4.83 (2.41)	-0.155	3.91 (1.95)	-0.461
No	49 (21.5)	7.92 (3.23)	(0.459)	4.90 (2.52)	(0.877)	4.07 (1.78)	(0.645)
STD request for information							
Yes	179 (89.5)	7.38 (3.22)	-2.527*	4.79 (2.35)	-0.963	3.94 (1.95)	-0.006
No	21 (10.5)	9.28 (3.57)	(0.012)	5.33 (3.00)	(0.337)	3.95 (1.59)	(0.995)
Variables	n (%)	post-hoc	F (P)	post-hoc	F (P)	post-hoc	F (P)
Methods of sexual protection							
Withdrawal	62 (31.0)	-	0.203	-	0.740	-	2.045
OCs	27 (13.5)		(0.816)		(0.479)		(0.132)
Barrier	111 (55.5)						
Education level (mother)							
Illiterate	7 (3.5)	3,5	3.883*	-	1.604		0.519
Primary school	47 (23.5)		(0.005)		(0.175)		(0.722)
Secondary school	32 (16.0)						
High school	60 (30.0)						
University	54 (27.0)						
Education level (father)							
Illiterate	2 (1)	-	1.554	-	0.385		0.055
Primary school	41 (20.5)		(0.188)		(0.819)		(0.994)
Middle school	32 (16.0)						
High school	61 (30.5)						
University	64 (32.0)						

\* $P < 0.05$ , \*\* $P < 0.001$ , <sup>†</sup> SMS subscales. SD: Standard deviation, n: Number of sample, t: Independent group t-test value, F: One-way ANOVA F test

**Table 1c: Comparison of participants' scale scores according to sociodemographic data**

Variables	n (%)	Sexual violence <sup>†</sup>		Sexual intercourse <sup>†</sup>		Sexual satisfaction <sup>†</sup>	
		Average (SD)	t (P)	Average (SD)	t (P)	Average (SD)	t (P)
Gender							
Women	120 (60)	5.99 (2.26)	0.270 (0.788)	4.81 (1.93)	-0.928 (0.355)	4.86 (2.04)	-0.239 (0.811)
Men	80 (40)	5.90 (2.48)		5.08 (2.15)		4.93 (2.07)	
Marital status							
Married	26 (13.0)	7.07 (2.66)	2.652* (0.009)	5.26 (2.14)	0.930 (0.353)	5.34 (2.03)	1.206 (0.229)
Single	174 (87.0)	5.78 (2.25)		4.87 (2.00)		4.82 (2.94)	
Sexual act within the last year							
Yes	126 (63.0)	5.89 (2.44)	0.456 (0.649)	4.71 (2.00)	-1.936 (0.054)	4.66 (2.06)	-2.074* (0.039)
No	74 (37.0)	6.05 (2.17)		5.28 (2.01)		5.28 (1.96)	
STD prior information							
Yes	151 (79.5)	5.87 (2.39)	-0.958 (0.339)	4.84 (2.06)	-1.133 (0.258)	4.71 (2.01)	-1.451 (0.115)
No	49 (21.5)	6.26 (2.15)		5.24 (1.84)		5.58 (2.04)	
STD request for information							
Yes	179 (89.5)	5.88 (2.35)	-1.175 (0.241)	4.91 (2.01)	-0.293 (0.770)	4.86 (2.06)	-0.698 (0.486)
No	21 (10.5)	6.52 (2.24)		5.04 (2.10)		5.19 (1.88)	
Characteristic	n (%)	post-hoc	F (P)	post-hoc	F (P)	post-hoc	F (P)
Methods of sexual protection							
Withdrawal	62 (31.0)	-	1.787 (0.170)	-	0.087 (0.917)	-	0.084 (0.920)
OCs	27 (13.5)						
Barrier	111 (55.5)						
Education level (mother)							
Illiterate	7 (3.5)	-	2.105 (0.082)	2, 4	5.191* (0.001)	2, 4	3.601 (0.007)
Primary school	47 (23.5)			2, 5		2, 5	
Secondary school	32 (16.0)						
High school	60 (30.0)						
University	54 (27.0)						
Education level (father)							
Illiterate	2 (1)	-	1.825 (0.126)	-	2.019 (0.093)	-	2.275 (0.063)
Primary school	41 (20.5)						
Middle school	32 (16.0)						
High school	61 (30.5)						
University	64 (32.0)						

\* $P < 0.05$ , <sup>†</sup>SMS subscales. SD: Standard deviation, *n*: Number of sample, *t*: Independent group *t*-test value, *F*: One-way ANOVA *F* test

in terms of STD, but a significant difference was seen in sexual myths. Children of university graduate mothers had lower myths scores than other options. When the demographic variable “education level of the father” was examined, no significant difference was found between STD, sexual myths (SM), and sexual myths. The demographic variable “protection method during sexual intercourse” showed a significant difference. There is a significant difference in terms of STDs between “withdrawal” and “barrier” methods of protection during sexual intercourse. There was no significant difference between sexual myths and sexual myths subscales [Tables 1a-c].

There was no statistically significant correlation between STDKQ and SMS total scores. When the sexual myths subscales were evaluated in terms of STDs, there was no statistically significant relationship between “sexual orientation” and STD scores, between “gender” and STD scores, between “age and gender” and STD scores,

between “masturbation” and STD scores, between “sexual violence” and STD scores, between “sexual intercourse” and STD scores, and between “sexual satisfaction” and STD points. However, there was a statistically significant weak and positive correlation between “sexual behavior” and STD scores ( $P = 0.049$ ,  $\rho = 0.140$ ). All the subscales of the SMS had a positive significant correlation with each other [Table 2].

## Discussion

In this study, it was found that female students have less knowledge about STDs than male students. However, myths related to gender, age and gender, sexual behavior, and sexual intercourse were less common among female students than male students. In male students, sexual myths related to sexual orientation and masturbation were found less than female students. According to marital status, the level of knowledge and total sexual myth scores



Table 2: Correlation between scales

Scales and subscales		1	2	3	4	5	6	7	8	9	10
1. STDKQ	$\rho$	-									
	$P$										
2. SMS	$\rho$	0.033	-								
	$P$	0.639									
3. Sexual Orientation <sup>†</sup>	$\rho$	0.025	0.781**	-							
	$P$	0.722	<0.001								
4. Gender <sup>†</sup>	$\rho$	0.099	0.742**	0.512**	-						
	$P$	0.162	<0.001	<0.001							
5. Age and gender <sup>†</sup>	$\rho$	0.003	0.753**	0.469**	0.506**	-					
	$P$	0.963	<0.001	<0.001	<0.001						
6. Sexual behavior <sup>†</sup>	$\rho$	0.140*	0.662**	0.393**	0.523**	0.520**	-				
	$P$	0.049	<0.001	<0.001	<0.001	<0.001					
7. Masturbation <sup>†</sup>	$\rho$	-0.131	0.653**	0.496**	0.367**	0.432**	0.375**	-			
	$P$	0.064	<0.001	<0.001	<0.001	<0.001	<0.001				
8. Sexual violence <sup>†</sup>	$\rho$	-0.081	0.715	0.606**	0.594**	0.415**	0.356**	0.424**	-		
	$P$	0.254	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001			
9. Sexual intercourse <sup>†</sup>	$\rho$	0.043	0.656**	0.371**	0.385**	0.482**	0.367**	0.381**	0.409**	-	
	$P$	0.544	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
10. Sexual satisfaction <sup>†</sup>	$\rho$	-0.026	0.651**	0.394**	0.389**	0.517**	0.396**	0.445**	0.396**	0.671**	-
	$P$	0.710	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	

\* $P < 0.05$ , \*\* $P < 0.001$ , <sup>†</sup>SMS subscales.  $\rho$ : Spearman correlation coefficient

about STDs do not differ. Sexual myths were less common among university students who had had sexual intercourse within the past year, and there was no difference in terms of information about STDs between these two groups. It has been observed that the students whose mothers were using the withdrawal method as a method of protection have less knowledge about STDs than those who use the barrier method. University students whose mothers are primary or secondary school graduates had higher total sexual myth scores than university students whose mothers are university graduates. There was no relation between the total score of sexual myths and information about STDs.

The literature search showed no differences in the beliefs of university students on sexual myths, according to gender variable.<sup>[19-21]</sup> In our study, while myths related to gender, age and gender, sexual behavior, and sexual intercourse were less common among female students, sexual myths related to sexual orientation and masturbation were less common in male students than in female students. The results of our study differing from the findings of previous studies indicate that there may have been a sociocultural change in our country in terms of sexual myths in recent years.

According to a study conducted with nurses, people who have had previous sexual intercourse believed less in myths.<sup>[22]</sup> In our study, similar findings were found in university students. Less belief in sexual myths was detected in students who had sexual intercourse within the

past year. People may be less likely to believe in sexual myths not only through sexual information but also through their experience. Another explanation may be that people who believe less in sexual myths are more willing to have sexual intercourse.

Studies suggest that one of the most important factors that threaten the health status and future of the young population is that sexual health and reproductive health involve risky behaviors.<sup>[23]</sup> It is essential to generalize the education about sexual health to ensure a healthy life.<sup>[24]</sup> Many studies conducted in Turkey show that the young population gained information about STD from school lessons as well as from printed visual media. In the study conducted by Dağ *et al.*, 2012<sup>[25]</sup> on 331 university students, it was found that 57.1% acquired information about sexual and reproductive health from TV/internet/books, 15.7% from friends, schools, and conferences, 11.2% from family, 8.5% from doctors, and 7.5% from nurses. STDs are one of the important factors for public health. It is necessary to educate the young population on sexual health issues at an early age to prevent these diseases in the future or to treat an individual with the disease without encountering any greater problems.

Reaching some of the thoughts on STDs by experiencing or through the environment and especially the internet is easier than to reach experts of this topic. Sexual myths have been told from childhood and people can turn these thoughts into myths in their minds and even if people have some sexual experiences, potential of sexual myths to

continue may be higher because they do not have obvious symptoms such as sexual diseases.

While people are expected to get information about sexuality from their families first, the parents not having enough information, the perception of sexuality as a taboo in families, and the families probably having traditional values are thought to cause their children not to talk openly about sexual issues.<sup>[26]</sup> In our study, more sexual myths were detected among the students whose mother's education level is primary and secondary school compared to those whose mothers are university graduates, supporting the aforementioned opinion. In one study, weak-to-moderate correlation was found between the father's education level and belief in sexual myths,<sup>[27]</sup> whereas in another study, no relationship was found between believing sexual myths in men and the mother's education level.<sup>[21]</sup> Larger sample size and multicenter studies are warranted to eliminate the inconsistency in this issue.

No difference was found in the students' beliefs in sexual myths based on the marital status variable. In the study of Torun *et al.*, 2011,<sup>[21]</sup> individuals who are married had higher scores in terms of belief in sexual myths than individuals who are single and divorced. This finding supports the result of our study. According to the findings in our sample, married university students have higher belief in sexual myths than single university students.

The literature search showed no study investigating the relationship between sexual myths and knowledge levels about STDs. When the secondary purpose of our study, that is the determination of this relationship, was evaluated, no significant statistical relationship was found. Reaching some of the thoughts on STDs by experiencing or through the environment and especially the internet is easier than to reach experts of this topic. Sexual myths have been told from childhood and people can turn these thoughts into myths in their minds and even if people have some sexual experiences, potential of sexual myths to continue may be higher because they do not have obvious symptoms such as sexual diseases. In addition, it seems more difficult to learn about myths from the environment and the internet than to learn about STDs. Depending on all these processes, these two variables may be unrelated.

Our study has some limitations. Since the sample is selected from a single region and no stratified sample selection is made according to Turkey's geographical regions, the inferences about the population from the sample may not be strong enough. In addition, our study was designed cross-sectionally. By conducting a longitudinal and multicenter study, more comprehensive and longitudinal information can be obtained about the knowledge of the university students in Turkey about their STDs and their belief in sexual myths.

## Conclusion

According to the results, we obtained from our research to increase the level of knowledge about STDs, and for the healthy development of sexual behavior, formal education including sexual health issues should be provided. Research should be done for each region in Turkey on this subject, and in line with the results, necessary information should be provided regarding sexual health.

## Patient informed consent

Informed consent was obtained.

## Ethical clearance

This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of Üsküdar University noninterventional studies ethics committee on April 25, 2019, with the number 61351432-/2019-197.

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## Conflicts of interest

There are no conflicts of interest to declare.

## Author contribution area and rate

- Cüneyt Balkanoğlu (28%): Data acquisition, analysis interpretation
- Habib Erensoy (24%): Conception/design of the work, data acquisition, analysis interpretation
- Süleyman Dönmezler (24%): Involved in refining the conception of the work, the interpretation of data for the work and revising it critically for important intellectual content
- Tonguç Demir Berkol (24%): Involved in refining the conception of the work, the interpretation of data for the work and revising it critically for important intellectual content.

## References

1. Ventriglio A, Bhugra D. Sexuality in the 21<sup>st</sup> century: Sexual fluidity. *East Asian Arch Psychiatry* 2019;29:30-4.
2. Ehrhardt AA. John Money, Ph.D. *J Sex Res* 2007;44:223-4. doi: 10.1080/00224490701580741
3. American Psychological Association, Task Force on Gender Identity and Gender Variance. Report of the Task Force on Gender Identity and Gender Variance. Washington, DC; 2009. Available from: [www.apa.org/pi/lgbtc/transgender/2008TaskForceReport.html](http://www.apa.org/pi/lgbtc/transgender/2008TaskForceReport.html).
4. American Psychological Association. Guidelines for psychological practice with lesbian, gay, and bisexual clients. *Am Psychol* 2012;67:10-42. doi: 10.1037/a0024659.
5. Kinsey AC, Pomeroy WR, Martin CE. Sexual behavior in the human male. 1948. *Am J Public Health* 2003;93:894-8. doi: 10.2105/ajph.93.6.894.
6. Diamond LM. *Sexual Fluidity: Understanding Women's Love and Desire*. Cambridge, MA: Harvard University Press; 2008.

7. Bulut A, Çokar M, Sağlık U. Sexual Health Information Education Teacher's Handbook. Istanbul: Human Resource Development Foundation; 2000.
8. WHO: Sexually Transmitted Infections (STIs). Fact Sheet N. 110; 2013. Available from: <http://www.who.int/mediacentre/factsheets/fs110/en/>. [Last accessed on 2020 Oct 16].
9. Workowski KA, Bolan GA, Centers for Disease Control and Prevention. Sexually transmitted diseases treatment guidelines, 2015. *MMWR Recomm Rep* 2015;64:1-137.
10. Newman L, Rowley J, Vander Hoorn S, Wijesooriya NS, Unemo M, Low N, *et al.* Global Estimates of the Prevalence and Incidence of Four Curable Sexually Transmitted Infections in 2012 Based on Systematic Review and Global Reporting. *PLoS One* 2015;10:e0143304. doi: 10.1371/journal.pone.0143304.
11. WHO Bulletin. Report on Global Sexually Transmitted Infection Surveillance, 2018. Geneva: World Health Organization, Licence: CC BY-NC-SA 3.0 IGO; 2019. Available from: [https://www.who.int/bulletin/online\\_first/BLT.18.228486.pdf](https://www.who.int/bulletin/online_first/BLT.18.228486.pdf). [Last accessed on 2020 Oct 16].
12. de Mendoza C. UNAIDS Update Global HIV Numbers. *AIDS Rev* 2019;21:170-1.
13. Taşçı A. Sexual Education. Istanbul: Umut Printing House; 2001.
14. Faul F, Erdfelder E, Lang AG, Buchner A. G\*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behav Res Methods* 2007;39:175-91. doi: 10.3758/bf03193146.
15. Zilbergeld B. The New Male Sexuality. London: Bantam; 1999.
16. Golbası Z, Evcılı F, Eroglu K, Bircan H. Sexual myths scale (SMS): Development, validity and reliability in Turkey. *Sex Disabil* 2016;34:75-87.
17. Brislin RW. Back-translation for cross-cultural research. *J Cross Cult Psychol* 1970;1:185-216.
18. Siyez DM, Siyez E. Investigation of university students' knowledge of sexually transmitted diseases. *Turkish Journal of Urology* 2009;35:49-55.
19. Kora K, Kayır A. Sexual Roles and Sexual Myths. *Dusunen Adam The Journal of Psychiatry and Neurological Sciences* 1996;2:55-8.
20. Raizada A, Gupta SB, Kumar A. Perceptions about sex related myths and misconceptions: Difference in male and female. *Indian J Community Health* 1997;9:33-8.
21. Torun F, Torun SD, Özaydın AD. Men's belief in sexual myths and factors effecting these myths. *Dusunen Adam The Journal of Psychiatry and Neurological Sciences* 2011;24:24-31.
22. Yaşan A, Gürgen F. The ways to get sexual knowledge and the comparison of the rate of sexual myths in nurses who have sexual partners and who do not have. *Yeni Sempozyum* 2004;42:72-6.
23. Pınar G, Doğan N, Öktem Ş, Algier L, Öksüz E. Özel bir üniversitede okuyan öğrencilerin cinsel sağlıkla ilgili bilgi tutum ve davranışları. *The Journal of Medical Investigations* 2017;7:105-13. (in Turkish).
24. Aslan E, Bektaş H, Başgöl Ş, Demir S, Vural PI. Knowledge and Behaviour of University Students Related to Sexual Health. *Journal of Continuing Medical Education* 2014;23:174-82.
25. Dağ H, Dönmez S, Şirin A, Kavlak O. Akran eğitiminin üniversite öğrencilerinin cinsel sağlık konusundaki bilgi düzeylerine etkisi. *Journal of Anatolia Nursing and Health Sciences* 2012;15:10-7. (in Turkish).
26. Karasu MA. Fear Of Crime In Urban Environment-Sanlıurfa Case. *Journal Of Sociological Research* 2017;20:41-76.
27. Aker S, Şahin M, Oğuz G. Sexual myth beliefs and associated factors in University students. *TJFMPC* 2019;13:472-80.