Investigating knowledge levels of university students about infertility

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ABSTRACT

Objective: The aim of this study was to determine the knowledge levels of university students about infertility and investigate the differences in knowledge levels according to sociodemographic variables and some lifestyle factors.

Material and methods: The sample of the study consisted of 9693 undergraduate students (5002 females, 4691 males) from 12 regions. Regions were determined according to Statistical Region Units Classification-1 criteria. Infertility Knowledge Test (IKT) was used as a data collection tool.

Results: It was found that university students' IKT scores significantly differed according to gender ($p<0.01$); age ($p<0.05$); body mass index ($p<0.05$); reproductive health education status ($p<0.001$), presence of infertile individuals around ($p<0.001$); having sexual intercourse ($p<0.001$); smoking ($p<0.001$) and alcohol consumption frequency ($p<0.05$).

Conclusion: University students' lack of knowledge about family planning, effects of age and sexual intercourse timing on infertility was remarkable. However, it was determined that the knowledge level of infertility risk factors related to substance use and body mass index was high. It is believed that increasing the level of knowledge about infertility among individuals will positively effect their awareness of risk factors and facilitate their search for timely medical assistance. Sexual health education can be effective in increasing university students' knowledge of infertility.

Keywords: Infertility; knowledge level; university students.

Introduction

Infertility which is accepted as one of the most important problems of reproductive health has been defined as the couple's inability to have a child despite unprotected and regular sexual intercourse for ≥ 1 year.^[1] Although the number of infertile couples is not known exactly, it is estimated that globally 13-15% of the couples are affected by infertility.^[2] Because of the lack of fundamental knowledge about infertility, its causes, and possible treatment alternatives, it has reportedly higher incidence rates in underdeveloped countries^[3], in developed countries risk of infertility increases owing to predetermined academic, and

professional targets.^[4,5] Though considered as a health problem, infertility may bring with it both individual, and social concerns. It may cause psychological problems in both partners as decreased self-respect, isolation, loneliness, loss of self control, and feeling of sexual insufficiency. Having a child is the basic cultural, and sexual norm of many communities. Therefore, couples experiencing the problem of infertility may be marginalized under social pressure, excluded from the society, and become isolated.^[6] Especially in traditional societies having a child is the determinative factor of the women's social status, therefore infertile women may feel the social stigma more strongly.^[7]

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Lifestyle related factors as smoking, and alcohol use, insufficient exercise, sexually transmitted diseases, advanced age, caffeine consumption, obesity, and stress appear to occupy an important place among risk factors of infertility.^[8,9] Interestingly, these behaviours or conditions which adversely affect reproductive potential are modifiable or preventable factors.^[9,10] Knowledge level has a key role for preventive measures. Lack of knowledge together with some fallacies delays search for medical help.^[11,12] Findings which reveal that ignorance about infertility-related risk factors, and possible treatment methods are directly associated with the incidence of infertility also underline the key role of being knowledgeable.^[11] It has been suggested that increase in the knowledge levels about infertility will allow these infertile couples to refrain from these risk factors which will contribute to decrease in the prevalence of infertility.^[12] Besides, it has been predicted that increase in the level of knowledge about infertility will enable the larger section of society to understand, and emphasize with the couples that experience infertility problems alleviating psychological, and social distress of these couples.^[8]

Limited number of studies mostly performed abroad about the knowledge level of university students about infertility who are at a higher risk of being infertile despite their desire to have a child when compared with other groups due to their intensive attempts at attaining their academic, and professional targets are available.^[8,13] Findings indicate that the university students plan to have a child when their reproductive potential starts to decline, and they have not possessed adequate awareness about decrease in this age related decrease, and knowledge about infertility, and relevant risk factors.^[14,15] We have encountered only one study which evaluated beliefs, and risky behaviours of university students on infertility, while any study on their knowledge levels about infertility has not been encountered yet.^[10] In Turkey infertility means more than a problem of reproductive health. For example not having a child is considered a deficiency, and fault on behalf of especially women, and childless marriages are believed to be short-lived. Cultural inheritance together with lack of knowledge is thought to be effective in the persistence of this perspective.^[16]

The determination of knowledge levels of university students regarding infertility, and investigation of its relationship with sociodemographic, and lifestyle changes will fill the gap in the literature, and conceivably contribute to infertility-preventive measures. Within this context, in this investigation, we aimed to determine knowledge levels of university students, about infertility, and investigate if their knowledge levels differ according to sociodemographic variables (gender, age, state of being educated about reproductive health, and the people who had infertility problems), some lifestyle factors (to have or not to have sexual intercourse, cigarette, and alcohol use, consumption of caffeinated drinks, and coffee).

Material and methods

Patient population, and sampling

The population of this survey consisted of university students who continue their undergraduate education in state universities in Turkey. In the selection of sampling Statistical Region Units Classification-1 (IBBS-1) was used. Based on Level 1 criteria Turkey is divided into 12 regions as follows: Istanbul, West Anatolia, East Marmara Region, Aegean Region, West Marmara Region, Central Anatolian Region, East Black Sea Region, Southeast Anatolia, Central East Anatolia, and Northeast Anatolia.

For the determination of samples, first of all state universities were listed based on the regions. The ratio between the number of universities in each region and the overall population was calculated, and the number of universities to be selected from each region was determined being as close as to this predetermined ratio. Universities from each region were selected using random number tables. Then sample size suitable to overall population was calculated. According to Higher Education Information Management System data, a total of 1,622,336 students were educating during the 2014-2015 academic year in the four-year faculties, and high schools of state universities in Turkey. Using sample size calculation programs, appropriate sample size was found to be 9,547 students within a 95% confidence interval, and an error margin of 1 percent. In consideration of the ratio of the number of university students included in the study to the overall population, the number of students from each university who would provide their data were calculated. For the selection of students from their respective universities, simple random sampling, and cluster sampling methods were used. For the determination of faculties to be selected for simple random sampling method, random number table was used. For the selection of samples from within faculties cluster sampling method was used to relieve the issue of "traveling" which might create problems when simple random method were used. During the process of determining the clusters within faculties, expert opinion was obtained, and the most suitable subjects in the clusters were determined. Before analyzing data, the data of the 528 students who could not respond more than 10% of the questions in the measurement tool were excluded from the analysis, and sample of the investigation consisted of 9693 undergraduate students (5002 female, 4691 male). The mean age of the female students was 20,46 (SD=1.90) while the mean age of the males was 21.28 (SD=2.51) years. Sociodemographic information about undergraduate students participated in the study are shown in Table 1.

Data collection tools

Infertility knowledge test

Infertility Knowledge Test (IKT) developed to determine the knowledge level of university students consists of a total of

33 items (19 straight, and 14 reverse coding questions).^[17] Test items consist of cognitive, affective, and behavioural components. High scores obtained from infertility tests indicate higher knowledge levels. The responses were arranged as “Correct”, “Incorrect”, and “I don’t know”. KR-20 test reliability coefficient of IKT was calculated as 0.77. Mean power of IKT was found as 0.49.^[17]

Personal information form

Personal information form includes some questions regarding sociodemographic variables (gender, age, height, body weight, reproductive health education status, presence of couples experiencing infertility problems in their social environment), and lifestyle changes (the state of having sexual intercourse, use of cigarette, alcohol or caffeinated beverages, coffee).

Collection of data

Data collection was realized between October 2016, and March 2017. Before data collection process, firstly approval from Presidency of Ethics Committee of Dokuz Eylül University was obtained for the study (17/11/2016; decree # 10), and then we applied to each university included in the sample group of the survey study to obtain necessary legal permission for the conduction of the study. Data collection process was realized by the investigators. During application of the survey, informed consent was read to the participants, then those volunteered to participate were enrolled in the study. During this process none of the individuals declined participation in the study.

Analysis of data

In line with the first objective of the investigation, frequency distribution of each item in IKT was calculated. As the second objective of the survey, total scores of the students were calculated by assigning 1 point for “Correct” responses, while the responses as “Incorrect”, and “I don’t know” were not scored. Then normality assumption was controlled by analyzing histogram graph, coefficients of skewness, and kurtosis, and measures of central tendency. Near normal distribution of IKT scores in the histogram graph, nearly similar measures of central tendency, coefficients of skewness, and kurtosis within -1 to +1 interval indicated normality of distribution.

However when the sample size of the survey study (n=9693) was also evaluated, use of parametric tests for the analysis of data was found to be appropriate.

Whether IKT scores of university students differ or not according to many variables including their age, gender, receipt of training on reproductive health, presence or absence of individuals with infertility problems in their social environment, presence or absence of sexual activity, cigarette and/or alcohol use,

Table 1. Sociodemographic information of the university students participating in the survey

Variable		n	%
Gender	Female	5002	51.6
	Male	4691	48.4
Grades	1. grade	2336	24.1
	2. grade	2679	27.6
	3. grade	2841	29.3
	≥4. grades	1736	17.9
	Not indicated	101	1.0
Educational status of the mother	Illiterate	715	7.4
	Literate (dropout from primary education)	632	6.5
	Primary school graduate	3595	37.1
	Secondary school graduate	1450	15.0
	Lycée graduate	2011	20.7
Educational status of the father	University/High school graduate	1261	13.0
	Illiterate	99	1.0
	Literate (dropout from primary education)	295	3.0
	Primary school graduate	2494	25.7
	Secondary school graduate	1608	16.6
Types of family	Lycée graduate	2604	26.9
	University/High school graduate	2578	26.6
	Nuclear family	7463	77.0
	Extended family	2010	20.7
	Single parent family	159	1.6
structures the students were brought up	Reformatory	9	0.1
	Other	42	0.4
Marital status	Married	139	1.4
	Single	9554	98.6
Having children	Yes	111	1.1
	No	9563	98.7
	Not indicated	19	0.2

consumption of caffeinated beverages, and coffee were determined using independent groups t-test, and one way analysis of variance (One-way ANOVA). Level of statistical significance was accepted as $p < 0.05$.

Results

Frequency distributions of the first responses of the university students to IKT items were calculated so as to investigate their

knowledge levels about infertility. The results obtained are shown in Table 2.

Whether IKT scores of university students differ or not according to their gender, receipt of training on reproductive health, presence or absence of individuals with infertility problems in their social environment, presence or absence of sexual activity, cigarette use, were determined using independent groups t-test, and the results of the analyses are given in Table 3.

As seen in Table 3, mean IKT scores of university students differentiated significantly regarding some variables including gender [$t(9483)=4.50$; $p<0.01$], reproductive health education status [$t(6367.16)=17.63$; $p<0.001$], presence of infertile individuals in their social environment [$t(7408.30)=5.73$; $p<0.001$], having sexual intercourse [$t(3716.23)=10.47$; $p<0.001$], smoking [$t(6561)=7.96$; $p<0.001$].

Data of height, and body weight of the students within the frame of the survey were collected to calculate their body mass indices. Body mass indices (BMIs) were calculated by dividing body weight by the square of height expressed as kg/m^2 . Data obtained was classified as follows: thin, BMI, 0-18.4 kg/m^2 ; normal, 18.4-24.9 kg/m^2 ; overweight, 25-29.9 kg/m^2 , and obese, $\geq 30 \text{ kg/m}^2$. To investigate whether IKT scores differ according to age, frequency of alcohol use, and body mass index, one-way analysis of variance (one-way ANOVA) was used, and results of analysis are presented in Table 4.

As seen in Table 4, mean IKT values differed significantly for some variables including age [$F(2, 9361)=14.58$; $p<0.05$], frequency of alcohol consumption [$F(3, 9281)=89.80$; $p<0.05$], and body mass index [$F(3, 8960)=5.11$; $p<0.05$]. Scheffe test was used to determine the source of difference related to age, and body mass index, and Dunnett C test was employed to detect the differences among body mass indices. Based on the results of Scheffe test, mean IKT scores of university students aged ≥ 25 years of age ($\bar{X}=16.25$, $\text{sds}=6.45$) were significantly higher than those of ≤ 18 years of age ($\bar{X}=14.64$, $\text{sd}=5.98$); mean IKT scores of the students aged 19-24 years ($\bar{X}=15.70$, $\text{sd}=6.17$) were significantly higher than those aged ≤ 18 years ($\bar{X}=14.64$, $\text{sd}=5.98$), and mean IKT scores of overweight university students ($\bar{X}=16.13$, $\text{sd}=6.20$) were significantly higher than those of thin students ($\bar{X}=15.24$, $\text{sd}=6.20$). Based on Dunnett C test results, mean IKT scores of university students who consume alcohol regularly ($\bar{X}=17.38$, $\text{sd}=5.80$) were significantly higher than those of nonusers ($\bar{X}=14.74$, $\text{sd}=6.22$) and rarely users ($\bar{X}=16.14$, $\text{sd}=6.10$); mean IKT scores of university students who were occasional users ($\bar{X}=16.89$, $\text{sd}=5.90$) were significantly higher than never-users ($\bar{X}=14.74$, $\text{sd}=6.22$), and rarely users ($\bar{X}=16.14$, $\text{sd}=6.10$).

Discussion

In this survey investigating whether knowledge levels of university students about infertility differ based on sociodemographic variables, it was concluded that some deficiencies in knowledge levels of university students exist about risk factors of infertility regarding family planning, sexual intercourse, age, substance use, and body mass indexes. Most (64.7%) of the university students did not know if condom use is a risk factor for infertility. In a study performed by Roucho and Forde, a rate of 40% was reported.^[15] Sexually transmitted diseases is an important risk factor for infertility, and use of condom which is included among modern family planning methods is one of the most effective methods of preventing transfer of sexually transmitted diseases.^[15] One of the striking findings was that 52% of other participants had indicated that use of birth control pills might cause infertility in women. This finding is similar to those found in previous studies. In a survey, more than half of the participants had believed that prolonged use of birth control methods might cause infertility.^[18] This widely held misinformation among sexually active university students about birth control, and use of condom constitute an important risk factor regarding unwanted pregnancies, and sexually transmitted diseases which has been thought to possibly increase risk of infertility.

As is known timing of sexual intercourse is the most important factor effecting infertility. According to results of the survey, university students had deficient knowledge about the relationship between infertility, and menstruation. Similarly, in an investigation performed by Roucho and Forde^[15] nearly 60% of university students had not known that the most optimal time for becoming pregnant is the mid-cycle phase. It has been thought that to minimize the risk of infertility related to timing of sexual intercourse which may be experienced by the individuals who want to have a child, young population should be informed about this issue.

Similarly, deficiencies in knowledge levels of university students regarding infertility-related risk factors as age, and body mass index also strike one's eyes. Based on the results obtained, 68.4, and 49.2% of the participants responded correctly to the items indicating that the age was a determinative factor in female, and male infertility, respectively. It has been thought that this difference in results stems from the perception that infertility is a problem mostly related to female partners. Various studies in the literature have indicated that the study participants have known that age is a risk factor for infertility, however its effect on infertility has been underestimated. Besides, female study participants have overestimated their period of increased reproductive capacity with higher probability of becoming pregnant.^[13] When deficient knowledge of university students about age which is an important risk factor for infertility, prolonged edu-

Table 2. Distribution of the responses given to items of IKT

Items	Correct		Incorrect		I don't know	
	n	%	n	%	n	%
1. Some of the sexually transmitted diseases can cause infertility.	5267	54.3	842	8.7	3563	36.8
2. Sperm quality of men does not impair with age.	970	10	6380	65.8	2335	24.1
3. After sexual intercourse, if female partner elevates her hips and lies in supine position, then chance of being pregnant increases.	2177	22.5	1200	12.4	6260	64.6
4. Obesity may adversely effect fertility in both men, and women.	6043	62.3	577	6	3051	31.5
5. In women inflammation of the tubes which transfer the ovum to the womb may cause infertility.	6475	66.8	380	3.9	2789	28.8
6. Timing of sexual intercourse determined according to menstrual cycle of the woman may be one of the etiological factors of infertility.	2532	26.1	2139	22.1	5007	51.7
7. Testicular traumas may cause infertility in men.	5600	57.8	292	3	3777	39
8. Alcohol use may cause infertility.	6087	62.8	843	8.7	2717	28
9. Compared with a woman in her 20's, fertility/childbearing potential of a woman aged ≥ 40 years is relatively lower.	6626	68.4	1683	17.4	1362	14.1
10. Age of a man is not a determinative factor in fertility.	2284	23.6	4770	49.2	2601	26.8
11. Natural disasters (earthquake etc.) may lead to decrease in sperm counts in men.	1441	14.9	3400	35.1	4833	49.9
12. Smoking may cause infertility.	7344	75.8	587	6.1	1753	18.1
13. Exposure to chemicals, heavy metals, and radiation may cause infertility.	7964	82.2	246	2.5	1469	15.2
14. Wearing tight underwear, and pants does not increase the risk of infertility.	1659	17.1	4123	42.5	3901	40.2
15. Women weighing less than 15% of their ideal body weight (based on body mass index) may carry risk of infertility.	2742	28.3	912	9.4	6033	62.2
16. Use of narcotic drugs may cause infertility.	7184	74.1	334	3.4	2172	22.4
17. Children born after infertility treatment using tube baby method may face with infertility problem during their adulthood.	753	7.8	2738	28.2	6184	63.8
18. Infertility can be completely treated.	802	8.3	3627	37.4	5230	54
19. Long-term condom use may cause infertility in men.	1034	10.7	2423	25	6200	64
20. Ejaculation of men following erection indicates his fertile potential.	1464	15.1	3885	40.1	4329	44.7
21. Family history of premature onset of menopause may increase the risk of infertility in women.	3160	32.6	1328	13.7	5199	53.6
22. Infertility problems usually stem from women	726	7.5	5390	55.6	3566	36.8
23. The woman who never menstruated may be fertile.	941	9.7	3998	41.2	4719	48.7
24. Penile erection is an evidence of his fertility.	991	10.2	4422	45.6	4256	43.9
25. Long-term use of birth control pills may cause infertility in women.	5035	51.9	996	10.3	3653	37.7
26. Before cancer therapy cryopreservation of oocytes of woman, and spermatozoa of man may aid in the preservation of their fertility potential.	4037	41.6	640	6.6	5004	51.6
27. Detection of spermatozoa in seminal fluid of men is a sufficient criterion for his fertility.	1206	12.4	5045	52	3423	35.3
28. Regular exercise may favourably effect fertility.	6204	64	456	4.7	2993	30.9
29. Working in excessively hot environments may cause infertility in men.	2930	30.2	1175	12.1	5570	57.5
30. Heavy stress may cause infertility.	5845	60.3	585	6	3247	33.5
31. Excess use of caffeinated drinks may carry risk of infertility in women.	5562	57.4	594	6.1	3517	36.3
32. Woman who menstruates regularly is considered to be fertile.	1545	15.9	4710	48.6	3403	35.1
33. It is possible to prevent most of the causes of infertility.	4004	41.3	948	9.8	4626	47.7

IKT: Infertility Knowledge Test

Table 3. Comparative T-test results of IKT scores of university students in consideration of some variables

Variable		n	$\bar{X}$	ss	t	p
Gender	Female	4877	15.35	6.10	4.50	0.001
	Male	4608	15.93	6.28		
Being educated about reproductive health	Yes	3084	17.29	5.97	17.63	0.000
	No	5961	14.94	6.11		
Infertile individuals in social environment	Yes	3447	16.13	6.03	5.73	0.000
	No	5955	15.38	6.25		
Having sexual intercourse	Yes	2176	16.85	6.03	10.47	0.000
	Never	6986	15.30	6.19		
Smoking	Never users	4279	15.06	6.26	7.96	0.000
	Regular users	2284	16.34	6.05		
IKT: Infertility Knowledge Test						

Table 4. Results of one way analysis of variance of IKT scores of university students in consideration of some variables

Variables		n	$\bar{X}$	ss	t	p
Age (years)	<18	844	14.64	5.98	14.58	0.000
	19-24	7857	15.70	6.17		
	25>	663	16.25	6.45		
Frequency of alcohol consumption	Never users	4940	14.74	6.22	89.80	0.000
	Only a few times	1277	16.14	6.10		
	Occasional users	2463	16.89	5.90		
	Regular users	605	17,38	5,80		
Body mass index kg/m ²	Thin	881	15.24	6.20	5.11	0.002
	Normal	6467	15.63	6.18		
	Overweight	1419	16.13	6.20		
	Obese	207	16.41	6.00		
IKT: Infertility Knowledge Test						

cation period, planning to have a child during the period of their declining reproductive capacity because of giving priority to achievement of their carrier goals were evaluated in combination, it has been thought that increasing awareness in university students about these issues conveys importance. Another important finding is that a substantial number of participants knew that obesity is a risk factor for infertility, while they did not know at the same rate that in women, 15% decrease from ideal body weight is a risk factor for infertility. It has been believed that this difference stems from the perception of “being thin is being healthy”. Indeed media, and marketing tools continually encourage women to become skinny.

As a striking fact, university students were more knowledgeable about risk factors concerning substance use, and body mass index when compared with other risk factors. In another

study performed with university students, great majority of participants had known smoking, alcohol use, and obesity as risk factors for infertility.^[10] These results obtained suggest that informative notes on cigarette boxes, and public spots featured on TV, and radio channels contribute to increased knowledge levels about the risk factors in question.

It has been concluded that significant differences in knowledge levels of university students exist dependent on the variables as gender, state of being educated about reproductive health, presence of infertile individuals in the social environment, having sexual intercourse, and smoking. The study results were analyzed based on the gender of the study participants, and male students were found to be more knowledgeable about infertility relative to female students. This finding of this investigation differs from that of previous studies performed with university

students. In many studies knowledge levels of female students were reportedly higher^[13,15,19], however Sørensen et al.^[20] reported lack of any difference in knowledge levels between male, and female students. The difference favouring male students, was thought to be related to increased sexual experience, and higher frequency of sexual intercourse among male students.^[10,21] At the same time higher knowledge levels of university students who engaged in sexual behaviours when compared with those who hadn't any sexual activity, support this point of view. The results of this investigation signify that students' knowledge level about infertility increases with age which can be explained by longer exposure to life experiences. It has been thought that since with advanced age, future plans about marriage may increase in number in parallel with individuals' sensitivity about infertility, the students may possibly investigate this issue.

As a result of this survey, knowledge level of the university students who were living with the individuals having infertility problems in their social environment was found to be higher relative to those who did not have infertile couples in their vicinity. Bandura^[22] indicated that there was no need for an individual to learn everything directly by him/herself, they may learn lots of things indirectly by observing experiences of others. From this perspective, higher knowledge level of individuals with infertile acquaintance may be thought to be related to their witnessing the problems experienced by these individuals during the process of diagnosis, and treatment of infertility, and their sharing life experiences with infertile individuals.

Study results have demonstrated that knowledge levels of the university students who received training about sexual health about infertility are higher than those who did not receive any similar training. In the literature, research findings have indicated that education about sexual health increased knowledge level of the participants.^[23] The curriculum of sexual health education program included risky sexual behaviours, reproductive health, and its maintenance, family planning, pregnancy, and birth, flirting, and marriage, responsible parenthood, and relations among family members.^[24] Therefore as a natural consequence university students who received education about sexual health had higher knowledge levels about infertility which once more emphasize the importance of education about sexual health.

Another striking finding obtained as a result of the survey, is that overweight participants who heavily drink caffeinated beverages, and coffee, and regular cigarette, and alcohol users have a higher level of knowledge about infertility. One may thought that knowing harmful effects of the substance consumed on body health, keeps the individual from using this substance. However, this line of thought is generally belongs to those who did not use it.^[25] In a study performed in 1899 pregnant women, although all of them aware that smoking was harmful during

pregnancy, 29% of them still continued to smoke during pregnancy.^[26] When physical, and psychological dependency develops towards a substance, these substances make the addict feel good even for a short time.^[27] This effect of feeling good may be effective in persistent use of these substances despite their known harmful effects. Although use of tobacco products, and alcohol is known to be harmful to health, unfortunately individuals are not always realistic about risks they encountered. This condition called as unrealistic optimism which describes the tendency to believe that unfavourable outcomes are less likely to be experienced by themselves when compared with others.^[27] In other words, they tend to consider that their risks are lower than those confronted by other individuals with the same age, and position. This attitude of considering oneself to be immune from deleterious effects of these substances may be influential in their insistence on using these harmful substances despite their recognition of caffeine, and alcohol consumption, and smoking as risk factors for infertility. Besides being knowledgeable is a prerequisite, but it may not be necessarily sufficient criterion for demonstrating healthy behaviours. For example in a study where dietary habits of university students have been investigated, though the knowledge level of female students about nutrition was higher than male students, they had unhealthier dietary habits when compared with male students.^[28]

Study limitations should be also taken into consideration while evaluating the outcomes of this survey. Firstly, collection of data using self-evaluation scales may make the study participants to bend the truth deliberately or unintentionally. In order to overcome this limitation, data of the participants who did not respond to more than 10% of the total number of items in the IKT forms were not included in the analysis. Another limitation of the survey is inclusion of only undergraduate students in the analysis. Conduction of survey studies with postgraduate students may lead to obtainment of different results dependent both on age, and experience. Another limitation of the survey is inability to evaluate sexual roles, and sexual orientation of the participants. Sex, and sexual roles of the participants do not always parallel each other and it has been recommended that analysis of knowledge levels which will or will not differ according to sexual orientation of the individuals should be investigated in further studies. Despite these limitations, it has been thought that collection of data during face-to-face interviews from all over Turkey is important for generalization of study results.

In conclusion, lack of knowledge, and misinformation about infertility may jeopardize reproductive health of the individuals. Models which attempt to explain why the individuals do not exert the most optimal behaviours about health issues, consider being knowledgeable about this issue as an important explanation of their behaviours.^[29] It has been seen that in many prevalent health problems, increase in the knowledge level

about symptoms, and preventable factors, decreases the relevant risks, and delay in search for medical help.^[30] Awareness of risk factors about infertility and timely search for medical help among individuals who want to have children are closely related to their having sufficient level of knowledge. It has been also believed that increase in the level of knowledge about infertility may render similar benefits, and decreases the problems which probably may be experienced by individuals.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Institute of Educational Sciences in Dokuz Eylül University (17/11/2016, 10).

Informed Consent: Written informed consent was obtained from participants who participated in this study.

Peer-review: Externally peer-reviewed.

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