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The Effect of Raising Basic Reproductive Health Awareness on the Knowledge of Female University Students

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Introduction: This survey was conducted to determine the change in knowledge, opinions, and attitudes about reproductive health after increasing their awareness of basic reproductive health by a training seminar in the first-fourth year university students.

Materials and methods: Of the total 1200 students, 154 participated in the descriptive study. The data were obtained by a questionnaire prepared and applied by researchers before and after the training seminar on basic reproductive health under observation. The students who participated in the study were divided into two groups according to their age group as ≤ 20 and > 20 years. Questionnaire data were evaluated and their correct answers were calculated.

Results: The mean value of correct answers after the training seminar was significantly higher than that before the training seminar ($p < 0,05$). In both the ≤ 20 - and > 20 - years-old students, the median value of correct answers after the training seminar was significantly higher than those before the training seminar ($p < 0,05$). The median value of correct answers before the training seminar in the ≤ 20 -years-old students was significantly higher than that in the > 20 -years-old students ($p < 0,05$). The median values of correct answers after the training seminar in the ≤ 20 - and > 20 -years-old students were found comparable ($p > 0,05$).

Conclusion: The findings of the current study revealed that increasing awareness about basic reproductive health provided considerable improvement in their knowledge about reproductive health parameters. Regular meetings with university students can improve their knowledge and attitudes about reproductive health.

Keywords: Reproductive health; university student; knowledge; opinion; attitude; menstruation

Introduction

When young women are studying at a university, they acquire important knowledge and experience that they will benefit from for a lifetime in addition to getting to know themselves, especially with regards to their health. Informing women of reproductive age regarding sexual health and playing an active

role in society are important steps for the progress of countries. The health problems of young women are assessed taking into account the roles and positions determined for them in society. Analysing the current phenomena by evaluating the knowledge and attitudes of young university students on reproductive

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health, developing strategies for solutions provide significant benefits for healthcare institutions determining the deficiencies, and women's health in general.

Youth is a significant period between the childhood and adulthood of the individual, and it is an intermediate period in which one gains awareness. It is a long process where the youth seek their place in society, their perspective on life begins to take shape, and they reach physical, psychological, and social maturity. Moreover, periods of social change affect people's sexual views and assessment styles. For this reason, students who start studying at a university may experience difficulties in adapting to this new environment as their lifestyles also change (1). Due to the rapid socio-cultural change the experience and the lack of sufficient education on reproductive health issues in their adolescence, university students become a community that is at risk for these issues. Given an environment where the youth may often experience problems with regards to sexual health, they are likely to have both social and psychological difficulties in accessing the services provided when they look for solutions. Therefore, the education that should be offered to these young people, who are great in number, is an issue that requires emphasis. Increasing the knowledge level of university students will determine the economic and social development of societies considering that they will provide social and economic support to society in the future. Therefore, the youth is an age group that needs serious economic and social investments (2,3).

Raising awareness of reproductive health among university students not only contributes positively to the life of the youth in the short term but also the development of the

reproductive health status of Turkey in the future with accurate approaches towards this age group which is the most suitable one for innovation, development, and change in the society (4). One of the studies that can be carried out to this end is to analyze the data collected by developing questionnaires specific to the study group. The underlying reasons for these problems can be analyzed with larger studies using specific scales peculiar to the problems by determining the main problems in this way. An assessment form for knowledge and attitude on reproductive health specific to the research was developed in the present study, and it was completed by young women studying at a university to evaluate the current phenomena with regards to basic parameters of reproductive health. The peculiarity of this study is that the assessment form is completed before and after a seminar that provides general information on reproductive health for the study group. In this way, the same form was completed for the second time to evaluate the initial knowledge and attitudes of the participants of the study and to analyze the changes after receiving information.

Materials and Methods

The present study aims to question the current knowledge level of female students staying in the University's dormitories with regards to women's health and sexual health and to measure their knowledge level again following the seminar given to them. The study is carried out in the Hostels Institution of the University. The study population consisted of 154 students studying at the university and staying in the dormitory of Hostels Institution. A questionnaire consisting of 10 questions created by the researchers was given to the students who accepted to participate in the study among the

female students staying in the dormitory between the dates of October 2019, and December 2019. The questionnaire was prepared by reviewing the literature on menstrual problems (dysmenorrhea, bleeding disorders, etc.), premenstrual syndrome, vaginal discharge, prevention methods, and sexually transmitted diseases. The students were divided into groups of 40 and received seminars on different days, and required to answer the questions in the questionnaire within 15 minutes under supervision. They were asked not to write their names on the questionnaire. Once the questionnaires were collected at the end of the given time, a seminar on general women's health, reproductive and sexual health lasting approximately 1 to 1.5 hours was carried out with the students. On the same day, the questionnaires were given to them again at the end of the seminar, and form data was collected after the students received the seminar. The variables related to some sociodemographic characteristics, age and marital status of the students constituted the variables of the study. The informed consent form was signed by the students participating in the study.

Statistical analysis

Statistical analysis was carried out using IBM SPSS software 23 (USA). The Kolmogorov-Smirnov test was used to determine whether the variables showed normal distribution. Mean, standard deviation, median, min-max. or 25-75% percentile values were used while presenting descriptive analyzes. The change in the correct answer rates for each question was examined with McNemar's test. The change in total correct answers was examined with the Mann Whitney Wilcoxon Test. A p-value <0.05 was considered statistically significant.

Results

The survey was designed by the researchers to predict the knowledge of the students and the answers given before and after the seminar were given in Table 1. The majority of students included in the study were below twenty years old (n=97; 63%) (Table 2). The 2 participants who were married were among those who are below twenty years of age.

The answer rates and comparison results for the questions before and after the seminar were presented in Table 3. There was a significant increase in the correct answer rates for the questions Q1, Q2, Q3, Q4, Q6A, Q6B, Q6D, Q6E, Q6F, Q7, Q9, and Q10 ($p < 0.05$). There was no significant change in the correct answer rates for the questions Q5, Q6C, and Q8 ($p > 0.05$) (Figure 1).

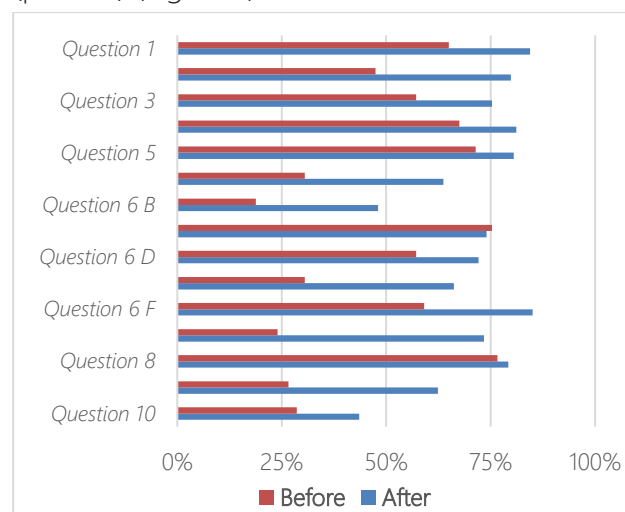


Figure 1. The bar graph presentation of the answers given to the questionnaire before and after the seminar.

There were 4 questions with a correct answer rate of >80% after the education while there were three questions with a correct answer rate higher than 70% before the education (Figure 1). There was no significant increase in the correct answer rates for these questions after the seminar. Students' values for responding correctly to questions after the

seminar varied positively in general. The average total correct answer value of all the students increased significantly after the seminar ($p < 0.05$) (Table 4; Figure 2).

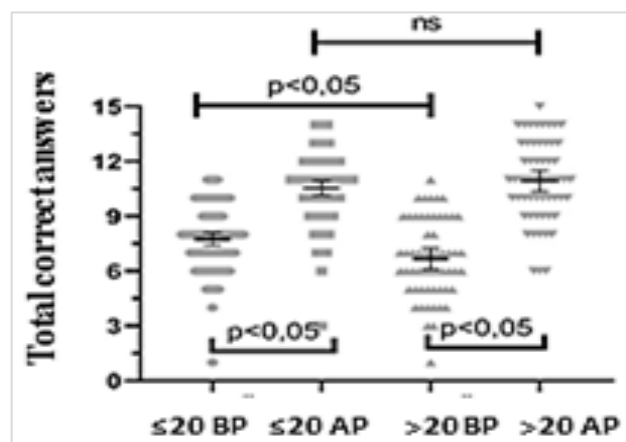


Figure 2. The median total correct answer values of the students who are ≤ 20 and > 20 . The data were shown as median and 25%-75% percentile, and statistical comparisons were performed by Mann-Whitney and Wilcoxon Rank tests. Statistical differences are shown in the figure. NS specified as a non-significant difference. BP: Before the presentation, AP: After presentation.

The median of total correct answer values of students aged twenty and below, and over twenty is presented in Figure 2. When the median of total correct answer values of students aged twenty and below, and over twenty were compared, the median of total correct answer values increased positively in both groups ($p < 0.05$). The median of total correct answer values of students aged twenty and below was significantly higher than that of the other group when the median of total correct answer values of the students aged twenty and below, and over twenty before the seminar (BS) were compared ($p < 0.05$). However, when the median of total correct answer values of students aged twenty and below, and over twenty after the seminar (AS) were compared, there was no significant difference between the values of the study groups ($p > 0.05$).

Discussion

University students who are going through puberty constitute an important part of society that is at risk if they do not obtain accurate and adequate information with regards to reproductive health and sexual health. They may display behaviours such as unprotected sexual intercourse, unexpected pregnancies, and risky sexual acts that cause sexually transmitted diseases, which may pose health risks. In this study, we analyzed the knowledge of female university students before and after a seminar about reproductive health and found that they have insufficient knowledge, but this situation can be improved with education.

There are challenges in expressing problems of sexual and reproductive health in societies mentioning and experiencing sexuality are considered taboo, as in Turkey (8). Alharbi et al. stated that young people have very limited knowledge about menstruation and only a few can share their reproductive and sexual health problems with their mother or peers while the vast majority of them cannot bring these up at all (9). Srivastava et al. defined that young girls have a lack of knowledge about menstruation, menstrual hygiene, nutrition, reproduction and contraception, and family life skill seasons as the effective event to increase their opinions and behaviours related to reproductive health (10). We observed that before the seminar, 69.42% of the students thought exercising during the menstrual period was harmful and 81.17% thought that contraceptives caused infertility. Fortunately, even with a one-day seminar, the level of acknowledge has increased significantly. Sanz-Martos et al. conducted a multicenter study with 2914 university students aged between 18-25 years where they stated that the nursing students who got the training

Table 1. The survey predicting the knowledge of the students and the answers given before and after the seminar

Questions		Before		After	
		<i>n</i>	%	<i>n</i>	%
Which is wrong for the menstrual period?	A) Menstruation is a period when susceptibility to infection is increased.	8	(5,19)	3	(1,95)
	B) You can take a standing shower during the menstrual period.	44	(28,57)	19	(12,34)
	C) Infection risk is rare in tampon use than pad use.	100	(64,94)	130	(84,42)
	D) Care should be taken to change pads every 4 hours during menstrual bleeding.	2	(1,3)	2	(1,3)
What are the symptoms of premenstrual syndrome?	A) Headache	32	(20,78)	28	(18,18)
	B) Nervousness	40	(25,97)	3	(1,95)
	C) Lomber pain, pain on the legs	9	(5,84)	0	(0)
	D) All of them	73	(47,40)	123	(79,87)
At what age dysmenorrhea (painful menstruation) more common?	A) Adolescent	88	(57,14)	116	(75,32)
	B) Reproductive age	25	(16,23)	16	(10,39)
	C) Menopause	12	(7,79)	1	(0,65)
	D) All ages	29	(18,83)	21	(13,64)
Which food consumption is not especially recommended during the menstrual period?	A) Banana	14	(9,09)	6	(3,90)
	B) Cheese	11	(7,14)	9	(5,84)
	C) Nuts	25	(16,23)	14	(9,09)
	D) Salt	104	(67,53)	125	(81,17)
Can excessive menstruation cause anemia in women?	A) Yes	110	(71,43)	124	(80,52)
	B) No	44	(28,57)	30	(19,48)
Exercising during the menstrual period is harmful.	True	107	(69,48)	56	(36,36)
	False	47	(30,52)	98	(63,64)
Oral contraceptives cause infertility.	True	125	(81,17)	80	(51,95)
	False	29	(18,83)	74	(48,05)
Until the age of 18, it is not necessary to investigate every menstrual irregularity.	False	38	(24,68)	40	(25,97)
	True	116	(75,32)	114	(74,03)
Frequent menstruation, prolonged periods do not cause anemia and do not require treatment.	True	66	(42,86)	43	(27,92)
	False	88	(57,14)	111	(72,08)
With the use of painkillers, the amount of menstruation decreases. This is harmful and means dirty blood cannot flow out from the body.	True	107	(69,48)	52	(33,77)
	False	47	(30,52)	102	(66,23)
Oral contraceptives should not be used in young girls.	True	63	(40,91)	23	(14,94)
	False	91	(59,09)	131	(85,06)
Which of the following is not recommended to prevent discharge?	A) Wearing cotton underwear	11	(7,14)	5	(3,25)
	B) Usage of antibiotics	37	(24,03)	113	(73,38)
	C) Unscented intima gels	45	(29,22)	20	(12,99)
	D) Yogurt and kefir consumption	61	(39,61)	16	(10,39)
Are there bacteria in normal vaginal flora?	A) Yes	118	(76,62)	122	(79,22)
	B) No	36	(23,38)	32	(20,78)
Which of the contraception method can protect from sexually transmitted diseases?	A) Oral contraceptives	67	(43,51)	37	(24,03)
	B) Preservative	41	(26,62)	96	(62,34)
	C) Monthly contraceptive injections	26	(16,88)	11	(7,14)
	D) Coitus interruptus	20	(12,99)	10	(6,49)
What conditions can sexually transmitted diseases cause in the following years?	A) Infertility	37	(24,03)	46	(29,87)
	B) Pelvic pain	16	(10,39)	0	(0)
	C) HIV positivity	57	(37,01)	41	(26,62)
	D) All of them	44	(28,57)	67	(43,51)

Table 2. Demographic characteristics of the students participating in the study.

Variables		N	%
Age	Twenty or below	97	(63)
	Twenty above	57	(37)
Marital status	Married	2	(1,3)
	Single	152	(98,7)

about contraceptives had greater knowledge than the ones who never had that kind of training (70% vs.15.3; $p < 0.001$) (11). In this study, before the seminar, 40.91% of the students believed that oral contraceptives should not be used in young girls. Hopefully, the seminar was useful to decrease the ratio to 14.94%. Reproductive health education programs are quite effective when prepared considering the needs and expectations of the participants and the level of development.

In previous studies, the researchers suggested that university students, especially those in their adolescence, may pose a significant risk to society and themselves if they are not informed adequately, accurately, and following their needs, and therefore, reproductive health education should become widely available (12). Of course, they pointed out the importance of preparing these pieces of training taking into account the needs of age groups, using different educational techniques, making announcements for students studying at a university through posters/banners, feedback, and repeatability. Yared et al. applied a mixed approach of the quantitative and qualitative survey to 400 university students in Ethiopia and recognized that although 94.5% of the participants knew sexually transmitted diseases, only 56.8% knew condoms to prevent them.

Table 1. Comparison of the answer rates given to the questionnaire before and after the seminar.

Questions		Before		After		p
		n	%	n	%	
Q1	Which is wrong for the menstrual period?	100	(64,94)	130	(84,42)	0,0001
Q2	What are the symptoms of premenstrual syndrome?	73	(47,4)	123	(79,87)	0,0001
Q3	At what age dysmenorrhea (painful menstruation) more common?	88	(57,14)	116	(75,32)	0,001
Q4	Which food consumption is not especially recommended during the menstrual period?	104	(67,53)	125	(81,17)	0,018
Q5	Can excessive menstruation cause anemia in women?	110	(71,43)	124	(80,52)	0,066
Q6A	Exercising during the menstrual period is harmful.	47	(30,52)	98	(63,64)	0,0001
Q6B	Oral contraceptives cause infertility	29	(18,83)	74	(48,05)	0,0001
Q6C	Until the age of 18, it is not necessary to investigate every menstrual irregularity	116	(75,32)	114	(74,03)	0,896
Q6D	Frequent menstruation, prolonged periods do not cause anemia and do not require treatment.	88	(57,14)	111	(72,08)	0,009
Q6E	With the use of painkillers, the amount of menstruation decreases. This is harmful and means dirty blood cannot flow out from the body	47	(30,52)	102	(66,23)	0,0001
Q6F	Oral contraceptives should not be used in young girls	91	(59,09)	131	(85,06)	0,0001
Q7	Which of the following is not recommended to prevent discharge?	37	(24,03)	113	(73,38)	0,0001
Q8	Are there bacteria in normal vaginal flora?	118	(76,62)	122	(79,22)	0,677
Q9	Which of the contraception method can protect from sexually transmitted diseases?	41	(26,62)	96	(62,34)	0,0001
Q10	What conditions can sexually transmitted diseases cause in the following years?	44	(28,57)	67	(43,51)	0,011

Table 4. Total correct answers of all students before and after the seminar

Group	Mean±Std	Median	Min	Max	p
Before	7,4±2	7	1	11	0,001
After	10,7±2	11	3	15	

Moreover, 22.8% of students had experienced any sexually transmitted disease already (13). In this study, before the seminar, only 28.57% of the students replied correctly to the question about the conditions that sexually transmitted diseases may cause in the following years.

Another noteworthy point in our questionnaire was that when we asked which prevention methods protected against sexually transmitted diseases (STD), 43.5% of the students answered "OCC" while this rate decreased to 24% after the seminar. Another question was related to the problems, STDs may cause in the future. 57% of participants answered only HIV positivity and did not think they could cause groin pain and infertility. However, the proportion of the participants who knew that they could have all three problems increased from 44% to 67% after the seminar.

In the present study, when we analyzed the correct answers of the students after the seminar with the same questions, it was noteworthy that the number of correct answers of the participants aged 20 and below, and over 20 after the seminar showed a significant increase in both groups. Also, the level of knowledge of the student group aged 20 and below before the seminar was better than the group over the age of 20, which indicates a more active use of communication devices by the new generation and increased awareness in society with regards to reproductive health education during the primary education period. When we analyzed both groups before and

after the seminar separately, we found a significant increase in knowledge levels in the two groups. This indicated that even a short seminar can be instructive and educational for the participants, and the learning process can be reinforced with questionnaires completed before and after the seminar.

Another similar clinical study in the literature conducted by Pinar et al. with 157 students analyzed the effectiveness of sexuality and reproductive health education for the university youth. Their study included 3rd-year students of a single university and a single faculty, and the participants received training for a total of 30 hours (3 hours per week). The control and study groups were tested before, during, and after the training. As a result of the study, a significant difference was found in the knowledge levels of the study group who received sexual and reproductive health education, the curriculum of which was developed by the researcher, compared to the pre-training level. No significant difference was found in the final test results of the control group (14).

Women experience many physiological changes in their lives such as menstruation, pregnancy, childbirth, postpartum period, and menopause, and therefore, reproductive health becomes a critical phenomenon for women. Especially between the ages of 16-47 when women reach sexual maturity and take advantage of their reproductivity, reproductive health problems increase and can become life-threatening by negatively affecting the overall health (15).

Reproductive health education is especially important for preventing risky sexual behaviors in the youth, unintended pregnancies, and protection from various diseases affecting the

reproductive system. In Turkish society, women often receive information from various sources for the first time, including parents, peer groups, and the media due to several changes taking place in their bodies, especially with adolescence. As a result of inaccurate or incomplete information about the sexual health of female students at the university, the individual's social circle and society may be adversely affected.

As with all the public health issues, health education and development are the cheapest and most effective methods that can be utilized to solve reproductive health problems and to change knowledge, attitudes, and behaviors in this regard. Today, it has become more crucial to improve health issues in Turkey rather than treating diseases, as in all over the world. Improving health issues focuses not only on the prevention of diseases but also on preserving, maintaining, and improving the well-being of the individual and taking responsibility for the individuals' health (16).

The limitation of this study is that the sampling of students staying in dormitories at a single university cannot be generalized to all female students. Multi-center studies are required.

Conclusion

Although university students are aware of their psycho-social and physical changes, their knowledge of sexuality and reproductive health is very limited. Institutionally, universities have a responsibility to educate students in this field.

Ethical Statement

The study was conducted in a retrospective design in accordance with the Declaration of Helsinki Ethical Principles. The informed consent form was signed by the students participating in the study.

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