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ORIGINAL ARTICLE

Effect of Reproductive Health Education on Students' Reproductive Behavior and Attitudes Towards Family Planning

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Abstract

Objective: This study aims to investigate how reproductive health education influences students' reproductive behaviors and their perspectives on family planning.

Material and Methods: A total of 300 university students who voluntarily took the reproductive health and family planning course were included in the study. Data collection was done using a "socio-demographic information form", "Reproductive Health Scale for Turkish Adolescents" and "Attitude Scale towards Family Planning". The data was analyzed using IBM SPSS23 program.

Results: There was a statistically significant difference in the average scores of pre-test and post-test of RHS according to the read section (p=0.007). A statistically significant difference was obtained in the median values of the APFTS post-test subscale and total scores according to the read section (p=0.021).

Conclusion: It was determined that the reproductive health education given to students had a positive impact on their attitudes towards reproductive health and family planning.

Keywords: midwifery, student, family planning, reproductive health

INTRODUCTION

The concepts of sexual and reproductive health gained international attention during the United Nations International Conference on Population and Development (ICPD), held in Cairo, Egypt, between September 5 and 13, 1994 (1). The World Health Organization (WHO) defines sexual health not just as the absence of illness or dysfunction, but as a state of overall physical, emotional, mental, and social well-being concerning sexuality. Similarly, reproductive health encompasses complete well-being in all aspects related to the reproductive system, including its functions and processes. It also involves the right to a safe and satisfying sexual life, as well as the autonomy to decide freely and responsibly about reproduction—whether, when, and how often to have children (2).

Adolescents face significant risks in accessing sexual and reproductive health services and acquiring relevant knowledge. Early sexual initiation, unintended pregnancies, and difficulties in accessing contraceptive methods are among the key issues faced by this group (3,4,5). For instance, in 2022, the majority of the 2.5 million reported STI cases in the United States were among individuals aged 15-24 (6). Additionally, a study among high school students showed that many sexually active adolescents did not use condoms and lacked adequate knowledge about contraceptive methods (7).

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Comprehensive Sexuality Education (CSE) aims to provide individuals with the knowledge and skills needed to prevent HIV, sexually transmitted infections (STIs) and unintended pregnancies continue to pose significant public health concerns. According to the Centers for Disease Control and Prevention (CDC), comprehensive sexuality education (CSE) programs should be grounded in scientific evidence, tailored to the developmental stages of learners, respectful of cultural diversity, and contain medically accurate information (8). These programs not only help prevent risky sexual behaviors while also fostering essential life skills in youth, such as analytical thinking, effective problem-solving, and informed decision-making (9).

Studies show that many adolescents lack adequate knowledge about sexual health and find it difficult to discuss these topics with their parents (10). According to Turkey Demographic and Health Survey (TDHS) 2018, the adolescent birth rate was reported as 4% (11). Another study among university students found that only 31.3% were knowledgeable about family planning, usually receiving this information from teachers or healthcare providers (10).

The importance of sexual health education extends beyond improving individual health outcomes; it also helps break societal taboos and empowers individuals to assert their rights more consciously. In line with Sustainable Development Goals in health, the aim is to achieve universal access to sexual and reproductive health services and integrate these topics into national strategies and programs by 2030 (12).

Successful implementation of CSE programs requires supportive policies, inclusion of culturally sensitive and evidence-based content in the curriculum, well-trained educators, collaborative parents, and the involvement of civil society organizations (8).

In this context, an elective course on sexual, reproductive health and family planning was offered to university students, and its effectiveness was evaluated. This study aims to assess the course's role in improving students' knowledge, attitudes, and promotion of healthy sexual behaviors. The course is expected to contribute to both personal and societal awareness and long-term health benefits.

MATERIAL AND METHODS

Study Design

This study was designed as a descriptive research. The study was conducted at Ankara Medipol University Ethics Committee (Date: 06/04/2021; Approval Number: 74791132-604.01.01-986). Data were collected through an online form from students attending the course via Microsoft Teams. The population consisted of 210 students enrolled in the elective "Reproductive Health and Family Planning" course during the Spring semester of 2020-2021. Students who completed the course and voluntarily agreed to participate were included in the study.

Data Collection Tools

Data were collected using the Demographic Information Form (DIF), Attitude Scale Toward Family Planning (ASTFP), and Reproductive Health Scale for Turkish Adolescents (RHSTA).

1. Demographic Information Form (DIF)

Developed by researchers, this form includes six questions to identify students' sociodemographic characteristics.

2. Reproductive Health Scale for Turkish Adolescents (RHSTA)

This measurement tool, originally developed by Karaca Saydam et al. in 2010 (13), comprises 34 items and evaluates six specific domains: partner selection, values supporting protective behaviors, communication with sexual partners, consultation, trust, and prevention of sexually transmitted infections. The total scoring range lies between 34 and 170, with higher scores reflecting more favorable attitudes toward reproductive health. The internal consistency of the scale, as measured by Cronbach's alpha, is reported as 0.88.

3. Attitude Scale Toward Family Planning (ASTFP)

Developed by Örsal and Kubilay in 2006 (14), this 5-point Likert-type scale includes 34 items, designed to assess individuals' attitudes toward family planning. The scoring range also spans 34 to 170, where higher scores indicate more positive perceptions. The instrument consists of three sub-dimensions: societal attitudes toward family planning, views on contraceptive methods, and attitudes toward childbirth. The scale demonstrates strong internal reliability with a Cronbach's alpha coefficient of 0.90.

4. Data Collection

Pre-test data were collected at the beginning of the course. The 14-week elective course included topics such as reproductive and sexual rights, gender, reproductive physiology, the status of family planning in Turkey and worldwide, classification and details of family planning methods, emergency contraception, STIs, and infertility. Each week included 2 hours of education. Post-test data were collected using the same scales.

5. Data Analysis

The statistical analyses were conducted using SPSS version 23.0. To determine whether the data followed a normal distribution, both the Kolmogorov-Smirnov and Shapiro-Wilk tests were applied. Since the data did not conform to normal distribution assumptions, non-parametric tests were used: the Mann-Whitney U test for comparisons between independent groups and the Wilcoxon signed-rank test for paired samples. A significance level of $p < 0.05$ was considered statistically significant.

RESULTS

In this section, the findings of the study are presented based on the analysis of the data collected before and after the reproductive and sexual health education. The results include descriptive statistics of the participants and comparative analyses of pre-test and post-test scores related to family planning attitudes and reproductive health. The tables below summarize the statistical outcomes across various subscales and total scores, with comparisons made based on academic department as well.

In the study, 78.1% of the participants were female and 21.9% were male. A total of 78.1% were enrolled in a health-related department. 96.2% were single, and 99% did not have children. 56.7% had spent most of their lives in a metropolitan area. The families of 69.5% of the participants lived in the Central Anatolia region. 89.5% reported having a medium-level economic status. 40% of the participants' mothers and 40% of their fathers were high school graduates. Additionally, 78.6% were living with their families. The average age was 20 years. All descriptive statistics are presented in Table 1.

The findings regarding the comparison of participants' pre-test and post-test scores on the Attitude Scale Toward Family Planning (ASTFP) are presented in Table 2. In the sub-dimension of attitude toward societal view on family planning, the mean pre-test score was 59.98±9.16, while the post-test mean was 62.82±6.41. This difference was not statistically significant (p=0.097). In the attitude toward family planning methods sub-dimension, the pre-test mean score was 38.57±7.02, and the post-test mean was 40.68±7.28. This difference was also not statistically significant (p=0.065). However, in the attitude toward childbirth sub-dimension, the pre-test mean score was 30.04±5.06, while the post-test mean was 31.61±4.07. This difference was found to be statistically significant (p=0.032). Regarding the overall scale score, the pre-test mean was 128.59±18.22, and the post-test mean was 135.1±15.2. This difference was also statistically significant (p=0.027).

Table 3 summarizes the comparative results of participants' scores on the Reproductive Health Scale for Turkish Adolescents (RHSTA) before and after the intervention. In the domain of partner selection, the mean pre-test score was 6.39 ± 3.34, while the post-test mean slightly increased to 6.60 ± 3.34; however, this change was not statistically significant (p = 0.182). For the dimension values in developing protective behaviors, the pre-test mean of 18.10 ± 6.65 rose to 19.27 ± 6.82 post-intervention, showing a statistically significant improvement (p = 0.006). In the domain communication with sexual partner, although there was a slight decrease from a pre-test mean of 26.44 ± 4.46 to a post-test mean of 26.09 ± 3.80, the difference was not statistically meaningful (p = 0.097). Regarding consultation, the mean score decreased from 22.37 ± 3.11 to 21.95 ± 3.03, and this change was statistically significant (p = 0.034). In the trust subscale, the scores slightly decreased from 22.54 ± 2.83 to 22.28 ± 2.80, with no significant difference observed (p = 0.096). For protection from sexually transmitted infections, the post-test mean (8.60 ± 1.56) was significantly higher than the pre-test mean (8.32 ± 1.61), indicating a meaningful improvement (p = 0.032). Finally, the total RHSTA score remained nearly unchanged (pre-test: 104.44 ± 8.15; post-test: 104.52 ± 8.06), with no statistically significant difference (p = 0.387).

Table 4 presents the comparison of RHSTA subscale and total score medians based on participants' academic departments. The analysis indicated no statistically significant differences in the pre-test median scores

across any subscales or the total score according to department (p > 0.050). In contrast, the post-test results revealed several significant differences. Specifically, the partner selection subscale showed a significant departmental difference (p = 0.021), with a median score of 5 among health-related students and 6 among students from other departments. Similarly, a statistically significant difference emerged in the values in developing protective behaviors subscale (p = 0.001), where health students had a lower median (15) compared to their peers in other fields (21). In the communication with sexual partner subscale, the median score was 29 for health students and 25 for others, indicating a significant difference (p = 0.011). The consultation subscale also showed a statistically significant variation (p = 0.006), with health students scoring a median of 24, compared to 21 for others. A notable difference was also observed in the post-test total RHSTA scores between the two groups (p = 0.007), again in favor of health-related students. No significant differences were detected in the remaining subscales or in overall pre-test scores (p > 0.050).

Table 5 illustrates the comparison of median scores on the ASTFP subscales and total scores according to students' academic departments. No statistically significant differences were observed in the pre-test scores across any subscales or the total scale based on department (p > 0.050). However, several significant differences emerged in the post-test results. In the subscale measuring attitudes toward societal views on family planning, a statistically significant difference was detected (p = 0.040), with a median score of 69 for students in health-related departments and 62.5 for those in other departments. Additionally, the attitude toward childbirth subscale showed a significant difference (p = 0.011); health students had a median score of 41, while their counterparts from other departments scored a median of 31. A significant difference was also found in the overall post-test total scores (p = 0.021), with health students achieving a higher median score (155) compared to 145.5 for students from non-health-related fields.

Table1. Descriptive Statistics of Participants

Variable	**Frequency**	**Percentage (%)**
Gender		
Female	164	78,1
Male	46	21,9
Marital Status		
Single	206	98,1
Married	4	1,9
Economic Status		
Low	8	3,8
Medium	188	89,5
High	14	6,7
Mother's Education		
Illiterate	1	0,5
Literate	7	3,3
Primary School	48	22,9
Middle School	24	11,4
High School	84	40
University	46	21,9
Father's Education		
Illiterate	1	0,5
Literate	3	1,4
Primary School	27	12,9
Middle School	35	16,7
High School	84	40
	Mean ± SD	**Median (Min-Max)**
Age	20 ± 2,75	20 (18 - 41)

Table 2. Comparison of Participants' Pre-Test and Post-Test Scores on the Attitude Scale Toward Family Planning (ASTFP)

Variable	ASTFP Pre-Test	ASTFP Post-Test Mean ± SD (Median; Min-Max)	Test Statistic	p*
	Mean ± SD (Median; Min-Max)	Mean ± SD (Median; Min-Max)		
Attitude toward societal view on family planning	59,98 ± 9,16 (61; 36-75)	62,82 ± 6,41 (63; 47-75)	3167,5	0,097
Attitude toward family planning methods	38,57 ± 7,02 (36; 29-55)	40,68 ± 7,28 (39; 28-55)	3101	0,065
Attitude toward childbirth	30,04 ± 5,06 (30; 22-40)	31,61 ± 4,07 (32; 22-40)	2993,5	**0,032**
ASTFP Total Score	128,59 ± 18,22 (130; 92-170)	135,1 ± 15,2 (133; 105-168)	2964,5	**0,027**

* Wilcoxon test

Table 3. Comparison of Participants' Pre-Test and Post-Test Scores on the Reproductive Health Scale for Turkish Adolescents (RHSTA)

Variable	RHSTA Pre-Test	RHSTA Post-Test	Test Statistic	p*
	Mean ± SD (Median; Min-Max)	Mean ± SD (Median; Min-Max)		
Partner Selection	6,39 ± 3,34 (5; 4-20)	6,6 ± 3,34 (5; 4-20)	-1,336	0,182
Values in Developing Protective Behaviors	18,1 ± 6,65 (16; 12-58)	19,27 ± 6,82 (18; 12-60)	-2,727	**0,006**
Communication with Sexual Partner	26,44 ± 4,46 (28; 6-30)	26,09 ± 3,8 (26; 6-30)	-1,659	0,097
Consultation	22,37 ± 3,11 (23,5; 5-25)	21,95 ± 3,03 (22; 5-25)	-2,118	**0,034**
Trust	22,54 ± 2,83 (24; 13-25)	22,28 ± 2,8 (23; 5-25)	-1,664	0,096
Protection from Sexually Transmitted Infections	8,32 ± 1,61 (8; 2-10)	8,6 ± 1,56 (9; 2-10)	-2,144	**0,032**
Total Score	104,44 ± 8,15 (106; 60-125)	104,52 ± 8,06 (105; 76-146)	-0,864	0,387

* Wilcoxon test

Table 4. Comparison of Pre-Test and Post-Test Subscale and Total Scores on the Reproductive Health Scale for Turkish Adolescents (RHSTA) by Academic Department

Subscale	Health Field.	Other Fields	Test Statistic	p*
	Mean ± SD (Median; Min-Max)	Mean ± SD (Median; Min-Max)		
Partner Selection – Pre-Test	6,45 ± 3,27;5 (4 - 20)	7,15 ± 3,55;6 (4 - 16)	3383	0,271
Values in Developing Protective Behaviors – Pre-Test	18,88 ±7,08;17 (12 - 60)	20,67 ± 5,68;21,5(12 - 33)	2908	0,545
Communication with Sexual Partner – Pre	26,3 ± 3,88;27 (6 - 30)	25,37 ± 3,47;24,5 (13 - 30)	3034,5	0,185
Consultation – Pre	22,2 ± 3,01;23 (5 - 25)	21,09 ± 2,97;20 (12 - 25)	2894,5	0,634
Trust – Pre	22,41 ± 2,76;23 (5 - 25)	21,8 ± 2,94;21,5 (14 - 25)	3348	0,233
Protection from STIs – Pre	8,23 ± 1,7; 8 (2 - 10)	8,67 ± 1,19;8,5 (6 - 10)	3291,5	0,172
RHSTA Total Score – Pre	104,46 ± 8,39;105 (76 - 146)	104,76 ± 6,83; 105 (78 - 118)	3600,5	0,637
Partner Selection – Post-Test	6,15 ± 3,27;5 (4 - 20)	7,24 ± 3,49;6 (4 - 16)	2972,5	**0,021**
Values in Developing Protective Behaviors – Post	17,4 ± 6,6;15 (12 - 58)	20,57 ± 6,27;21 (12 - 36)	2529	**0,001**
Communication with Sexual Partner – Post	26,71 ± 4,62;29 (6 - 30)	25,5 ± 3,76;25 (13 - 30)	2877	**0,011**

Consultation – Post	22,65 ± 3,04;24 (5 - 25)	21,37 ± 3,2;21 (12 - 25)	2818	**0,006**
Trust – Post	22,73 ± 2,73;24 (13 - 25)	21,87 ± 3,11;22 (14 - 25)	3219	0,111
Protection from STIs – Post	8,59 ± 1,65;9 (2 - 10)	8,67 ± 1,23;9 (6 - 10)	3701	0,837
RHSTA Total Score – Post	122,22 ± 8,56;122 (80 - 146)	112,22 ±6,49;112 (78 - 124)	3603,5	**0,007**

* Wilcoxon test

Table 5. Comparison of Pre-Test and Post-Test Subscale and Total Scores on the Attitude Scale Toward Family Planning (ASTFP) by Academic Department

Subscale	**Health Field.**	**Other Fields**	**Test Statistic**	**p***
	Mean ± SD (Median; Min-Max)	**Mean ± SD (Median; Min-Max)**		
Attitude toward societal view on FP – Pre	62,38 ± 7,2;62,5 (43 - 75)	61,54 ± 7,11;62 (36 - 75)	3568	0,575
Attitude toward FP methods – Pre	40,6 ± 7,56;39 (28 - 55)	38,83 ± 5,92;37 (29 - 55)	3383	0,285
Attitude toward childbirth – Pre	31,23 ± 4,53;32 (22 - 40)	31,39 ± 3,61;31 (22 - 38)	3696	0,834
ASTFP Total Score – Pre Test	134,21 ± 16,78;133 (103 - 170)	131,76 ± 13,35;131 (92 - 166)	3561	0,562
Attitude toward societal view on FP – Post	69,32 ± 5,2; 69 (55 - 75)	62,54 ± 3,31;62,5 (45 - 75)	3044	0,040
Attitude toward FP methods – Post	41,6 ± 7,68;39 (28 - 55)	39,83 ± 5,22;37 (33 - 55)	3383	0,285
Attitude toward childbirth – Post	41,23 ± 7,53;41 (35- 50)	31,6± 3,61;31 (22 - 38)	2988	0,011
ASTFP Total Score – Post Test	155,21±14,68;155 (125- 170)	145,76 ± 13,21;145,5(130 - 166)	2455	0,021

* Mann-Whitney U test

FP: Family Planning

DISCUSSION

Sexual health is understood not solely as the absence of illness or dysfunction related to sexuality, but as a holistic state in which physical, emotional, cognitive, and social dimensions of sexuality are positively integrated. In a similar vein, reproductive health encompasses more than just the lack of disease or disorders affecting the reproductive system and its associated functions; it refers to a complete state of physical, psychological, and social well-being. This perspective highlights that reproductive health includes individuals' autonomy to experience a safe and fulfilling sexual life, along with the right to make informed and voluntary decisions about if, when, and how often to reproduce (12).

In our study, which aimed to evaluate the impact of reproductive health education on students' reproductive behaviors and attitudes toward family planning, the average age was found to be 20 ± 2.75. Similar studies reported average ages of 20.71 ± 1.83, 20.60 ± 2.12, and 27.4 ± 5.35, respectively (15,16,17). In our sample, 78% of participants were students in health-related departments, while the participation rate from other departments was lower. This is consistent with previous studies in which most participants were students in health fields (15,18). This similarity may be due to the course on reproductive health being primarily offered to departments within the health sciences, while it is offered as a social elective in other disciplines at our university.

The literature emphasizes that university students need education on reproductive and sexual health (19,20). Studies on the topic have shown that students exhibit more positive attitudes after receiving education on sexual and reproductive health (21-24). In our study, when analyzed according to department, there was no significant difference in pre-test scores on the Reproductive Health Scale for Turkish Adolescents (RHSTA). However, after 14 weeks of reproductive health education, post-test scores showed statistically significant improvements in the subscales of partner

selection, values in developing protective behaviors, communication with sexual partner, and consultation (Table 4). Similarly, a study by Aşçı et al. (25), which evaluated a two-hour peer-led educational program covering sexual and reproductive health, reproductive rights, physiology, family planning, safe sex, and STIs, found significant results when measured six weeks later—supporting our findings.

In another study where reproductive health education was delivered in two 40-minute interactive sessions involving quizzes, videos, and group discussions on STIs, sexual violence, sexual communication, and gender, results showed increases in knowledge, attitudes, and self-efficacy, with the interactive format proving more effective than traditional lectures (22). In a study assessing the effectiveness of sexual and reproductive health education in university curricula, results indicated a statistically significant decrease in risky sexual behaviors and improved attitudes toward family planning among students who received the training (30). Similarly, other studies have reported improved attitudes among students following interventions related to sexual and reproductive health, along with decreases in adolescent pregnancies, STI rates, and average age of sexual debut (22,23,27,28). These findings emphasize the importance and effectiveness of education in improving students' knowledge, attitudes, and behaviors. The literature also supports that students with prior knowledge about sexual and reproductive health exhibit more positive attitudes than those without such knowledge (16,21,25).

Moreover, the literature indicates that university students' knowledge and attitudes toward family planning are generally inadequate, and that students express a desire for education on this topic (29–37). In our study, no significant differences were observed in the pre-test ASTFP scores across departments. However, following the 14-week reproductive health course, significant improvements were observed in the subscales of societal attitudes toward family planning, attitudes toward childbirth, and overall ASTFP scores (Table 3). In a study by Özer and Yaman Sözbir (38), students in the intervention group received the same family planning education as the control group, with the addition of humor, resulting in significantly higher ASTFP scores. Another intervention involving two 90-minute sessions on family planning showed significant improvements in both knowledge and attitudes toward contraceptive methods (39). Similar studies reported statistically significant improvements in students' attitudes toward family planning following education (38-40), supporting our findings that reproductive health education improves students' attitudes toward family planning.

CONCLUSION

Considering that sexual and reproductive health education can lead to behavior change, it is crucial to implement such interventions for the benefit of both individual students and public health. To enhance the effectiveness and sustainability of educational impact, we recommend repeating the training sessions, incorporating interactive teaching methods, organizing practical activities such as simulations or case discussions, and offering students guidance and counseling services.

We believe that making sexual and reproductive health courses a mandatory part of university curricula would be beneficial for both students and broader public health. Given that the age of exposure to sexually transmitted infections like HIV is decreasing globally and that infection rates are increasing, it is essential to integrate these topics into the education process at an earlier stage. In Türkiye, reports show HIV exposure at ages as young as 15. Therefore, these topics should not be confined to university-level education but also included in earlier educational stages. It is important to revise curricula accordingly and strengthen collaborations with relevant authorities.

Contribution to the Field

The literature acknowledges that students need knowledge and guidance on sexual and reproductive health; however, there are only a limited number of studies that report on intervention-based educational programs. For this reason, we believe that our study will serve as a guiding resource for future researchers.

Conflict of Interest: The authors declare that they have no financial or non-financial conflicts of interest to disclose.

Informed Consent: Informed consent was obtained from all participants involved in the study.

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Ethical Approval: The study was conducted in accordance with the Declaration of Helsinki. Ethics approval was obtained from the Ankara Medipol University Ethics Committee (Date: 06/04/2021; Approval Number: 74791132-604.01.01-986).

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- **Concept and Design:** S.C.
- **Data Collection:** S.C., T.T.
- **Data Analysis and Interpretation:** S.C., Ö.C.
- **Manuscript Preparation:** S.C., T.T., Seniha Balcı
- **Critical Revision for Content:** S.C.
- **Statistical Analysis:** S.C., G.G.
- **Supervision:** Ö.C., G.G.

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