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RESEARCH ARTICLE

The effect of an educational peer-based intervention program on sexual and reproductive health behavior

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Abstract

Introduction: The fact that adolescent people experience risky sexual behavior and have insufficient knowledge of sexual and reproductive health (SRH) indicates the need for SRH education. This study investigates the impact of peer-educated SRH programs on the knowledge and behaviors of adolescents.

Method: This study was conducted as a randomized controlled trial on 275 university students. The subjects were randomly assigned to the peer educators ($n = 25$), intervention ($n = 125$) and control ($n = 125$) groups using systematic random sampling. Peer educators provided face-to-face SRH education to the intervention group. The researcher provided the same education to the control group via the online conference method. SRH knowledge and behavior evaluated with scales before, after, and 3 and 6 months after the SRH education. The obtained data were analyzed using SPSS version 25 through statistical tests and analysis of covariance.

Results: The female and male ratio of the participants was almost equal (49.4%, 50.6%). The mean age was found to be 20.42 ± 1.14 years. The mean scores of the students in the intervention group increased from 21.20 ± 0.14 to 35.20 ± 0.07 for sexual health knowledge questionnaire (SHKQ), and from 130.56 ± 0.55 to 147,90 ± 0,25 for reproductive health scale (RHS) after the education. Compared with the control group, these increases in the mean scores of SHKQ and RHS were found to be statistically significant.

Conclusion: The findings show the important role of the SRH peer education method on the effect of transferring knowledge about sexual behaviors. Health and education policy-makers are advised to implicate SRH peer education.

KEYWORDS

adolescent, reproductive health, sex education, sexual behavior, sexuality

1 | INTRODUCTION

Adolescence is a period of life in which the individual is no longer a child, not yet an adult (Backes & Bonnie, 2019). The adolescent period can be divided into 10–14 (early), 15–17 (middle), and 18–21 (late) age ranges (Patton & Viner, 2007; Patton et al., 2016). The changes occurring in this period are perceived differently by cultures, and this perception is influenced by social, economic, and cultural factors (Patton et al., 2016). Adolescents and young people show more risk-taking behaviors than adults; male adolescents start having sex earlier than females, report more lifetime sexual partners, and engage in multiple risky sexual behaviors, while females report higher rates of sexually transmitted diseases (STDs) (Dir et al., 2014; Vasilenko, 2022). Today, many factors hinder the provision and development of sexual and reproductive health (SRH) services for adolescents. The decrease in the first pregnancy and marriage age of adolescents below 18, and especially below 15 years old, increases the risk of unintended pregnancies, maternal morbidity, and mortality (Mardi et al., 2018;

Sedgh et al., 2015). In addition, the lack of adolescents' access to contraceptive methods increases the risk of early and unwanted pregnancies (Chandra-Mouli et al., 2014; Ghasemi et al., 2019). A high incidence of negative SRH outcomes indicates adolescents' risky sexual behaviors transformed into a significant public health problem (Dir et al., 2014).

Problems such as alcohol and substance use and partner violence are common among adolescents and youth (Bellizzi et al., 2019; Starrs et al., 2018). For example, in sub-Saharan Africa, patterns and determinants of the sexual debut have been of particular interest because of exposure to human immunodeficiency virus (HIV) infection (Howard et al., 2021), and high rates of adolescent pregnancy (Mbabazi et al., 2021). In developing countries, teenage girls are at increased risk of unwanted pregnancy (Ghasemi et al., 2019). Younger age at first sex has been associated with a higher rate of STIs (Dir et al., 2014) and increased risk of engaging in risky sexual behavior (Patton et al., 2016). National and international studies have documented that young people experience their first sexual intercourse at an early age, that use of condoms during sexual intercourse is low, and that their knowledge of SRH is insufficient (Akalpler & Eroglu, 2015; Baiden et al., 2021; Kirmizitoprak & Simsek, 2011; McKellar et al., 2019; Nguyen & Eaton, 2022; Ozen et al., 2019). The increase in risky sexual behavior and the lack of knowledge about SRH reflect the need for SRH education of young people (Azzopardi et al., 2019; Chandra-Mouli et al., 2015; Engel et al., 2019). In the Turkish Republic of Northern Cyprus (TRNC), SHR education is not given either in primary education or in universities. There are many universities in TRNC with students from all over the world. The TRNC also accepts thousands of international students annually and many sex workers from Eastern Europe which may increase the possibility of negative SHR outcomes (AŞUT et al., 2019; Kaptanoğlu et al., 2013).

Young people who do not receive sexual education within the family become vulnerable to SRH risks. Peer education is a preferred model for reaching hard-to-reach populations such as adolescents, youth, and sex workers and for handling and discussing issues that are not sufficiently addressed or considered taboo (Maticka-Tyndale & Barnett, 2010). Sandhu et al. (2013) attributed these specifications of peer education develops the knowledge, attitudes, and skills necessary for positive behavior change in individuals through establishing accessible, inexpensive, preventive, and psychosocial support. Peer education emphasizes the interaction between people of similar ages to form a positive force for disseminating ideas and a change in attitudes and behaviors (Mellanby et al., 2001). In the literature, there are many peer education interventions ranging from high-cost programs in which highly educated professionals participate as program managers to cost-effective programs for adolescents, youth, sex workers, and substance abusers. Findings of many randomized controlled trials, systematic reviews, and meta-analysis studies show that peer education is an effective and appropriate method for the development of SRH knowledge and behavior change in adolescents group (Harden et al., 2001; He et al., 2020; Maticka-Tyndale & Barnett, 2010; Kim & Free, 2008; Medley et al., 2009; Merakou & Kourea-Kremastinou, 2006; Tolli, 2012; Visser, 2007). Since risky sexual behaviors and SRH problems are common among adolescents in our region, this clinical trial was designed to assess the potency of university students on the education of their peers for overcoming these problems.

2 | AIM OF CURRENT STUDY

The purpose of this study was to test the effect of the SRH peer education program on university students' knowledge and behaviors. It was hypothesized that the sexual health knowledge questionnaire (SHKQ) and reproductive health scale (RHS) scores of the intervention group would be higher than the control group; also, the RHS score would increase as the SHKQ score increased.

3 | METHOD

3.1 | Participants

Participants were a total of 275 volunteer students grouped into three groups a peer educator, an intervention, and a control group, all from the European University of Lefke (EUL) in TRNC. The inclusion criteria were being registered and signing the informed consent. The selection procedure of the participants has shown in Figure 1.

3.2 | Participants selection procedure

3.2.1 | Selection of peer educators

It is known that peers who provide peer education should have leadership characteristics (Abdi & Simbar, 2013; Akkuş et al., 2016; Mason-Jones et al., 2013; Maticka-Tyndale & Barnett, 2010). For that, the principal researcher applied the “Who Is That?” Test on students. This test comprises six questions asking students to nominate the most liked leader of the class.

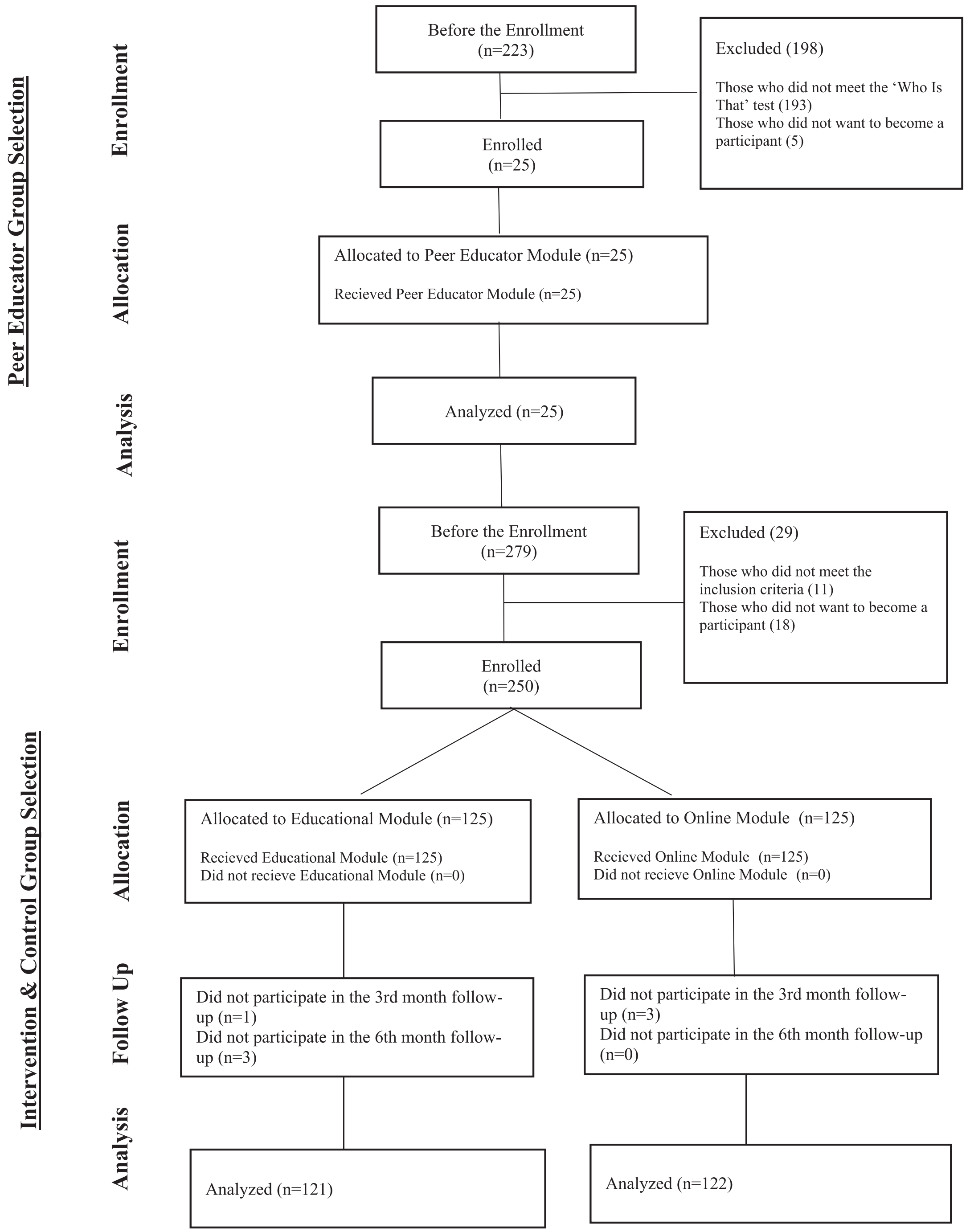

FIGURE 1 CONSORT flowchart for the sample.

This test was applied to 223 students, and finally, 25 students were selected as peer educators. According to the G*Power (v3.1.7) analyses computed the sample number of the peer educator as 25, at the α level of 0.05 and the power of 95%.

3.2.2 | Selection of intervention and control groups

The systematic ranked random sampling approach was used to select participants. The EUL has 12 faculties in nonhealth fields. Six faculties from the university were randomly selected to obtain a representative sample, including the Faculty of Engineering, Faculty of Law, Faculty of Communication Sciences, Faculty of Agricultural Sciences and Technologies, School of Tourism, and Hotel Management students. A list of students in each faculty was obtained as a sampling frame. Numbers were assigned in sequence to the names, and starting from the third student, each odd-numbered student was included in the intervention group, and each even-numbered student was included in the control group until reaching a total of 42 students per faculty and 125 per group. If a student was absent, they were excluded, and another participant was replaced similarly. Therefore, 125 students were randomly assigned to each group. Using the G*Power (v3.1.7) application and considering the effect size of 1.28, the α level of 0.05, and the power of 95%, the required sample size for each group was calculated as 125. As shown in Figure 1, the total number of participants in the intervention and control group declined to 122, and 121 eventually.

3.3 | Educational modules

3.3.1 | Peer educator module

This module was a comprehensive sexual education consisting of 15 subheadings aiming to improve the self-efficacy perception of peer educators. A total of 20 h of education was applied to the peer educators by the principal researcher in 5 days. The participants who completed the module used an education simulation on a topic they chose within the group. These subheadings were Basic Information on Peer Education, Communication and Active Listening, Self-Knowledge and Role Play, Basic Concepts of Sexuality, Sexual Health, Reproductive Health and Reproductive Rights, Development of Sexual Identity, Sexual Tendencies and Sexual Violence, Social Gender, Anatomy of the Reproductive System, Sexual Response Cycle, Physiology of Reproduction, Contraception, STIs, Safe Sexual Behaviors. The researchers provided instruction for the use of peer educators. The opinions of two academicians who were experts in Women's Health and had a field of experience were obtained in preparing this guideline. The topics of the SRH peer education guide were the same as the content of the SRH peer education module. In addition to the SRH education guideline, a condom package and a pen were distributed among peer educators as incentives.

3.3.2 | Educational module of the intervention group

The peer educators applied this module. At first, a meeting was organized at the university to get acquainted with the intervention group. Then, a group of five people was formed for each peer educator. In this way, a total of 25 educational groups were created. The SRH peer educational module included the same topics as the peer educator modules. Within 1 month, starting from December 2020, each peer educator conducted the SRH peer education module in the assigned group meeting at their convenient time. The first meeting lasted up to 0.5 h, but the next two sessions lasted about 20 min.

3.3.3 | Online module at the control group

This module was taught by the principal researcher using the online conference method. The content of the module was the same as peer educator modules. It was carried out in a separate meeting for the students of each faculty in a total of six meeting online conferences.

3.4 | Evaluation process of the modules

3.4.1 | Evaluation of the peer educator module

This module was evaluated using SHKQ, RHS, and Peer Educator Skills Assessment Form (PESAF) scales which were preceded by a short questionnaire on demographic data, educational background, history of any SRH education, and a set of questions about sex-related behaviors. At first, the participants filled out all four scales; then the principal researcher presented the module; after that, the participants were asked to fill out the SHKQ, and RHS again. Finally, each participant presented the module, which was evaluated by the principal researcher using PESAF. The peer educators were found to be competent enough as peer educators. Considering the results of the PESAF (Table 2).

3.4.2 | Evaluation of the educational module in the intervention group

The peer educators implemented this module in three sessions. The module was evaluated using the SHKQ and RHS scales which were preceded by the same short questionnaire for the peer educators. The participants were asked to fill out the scales in the first session. Then the educational module was implemented by the peer educators. The scales were applied three times after implementing the module, immediately after, 3, and 6 months after. In the last evaluation, only the RHS scale was used. In similar studies, the evaluations were generally repeated after 3 and 6 months (de Lijster et al., 2016; Dunstan et al., 2017; Mathews et al., 2016; Starks et al., 2022; Wong et al., 2021).

3.4.3 | Evaluation of the online module in the control group

This module was evaluated similarly for the intervention group, except that the principal researcher taught the module via online Teams conferences.

3.5 | Measurements

Five tools were used for data collection in this study. A short demographic form (3.3.1) and test of "who is that?" (3.3.2) were developed by the researchers based on the literature. The other three, including the Peer Educator Skills Assessment Form (PESAF) (3.3.3), Sexual Health Knowledge Questionnaire (SHKQ) (3.3.4), and Reproductive Health Scale (RHS) (3.3.5) are standard valid and reliable tools. Detailed information about the measurement tools is provided in the mentioned sections.

3.5.1 | Short demographic form

A short demographic form was prepared by the researchers in line with the literature (Bulduk & Erdogan, 2012; Evcili & Golbasi, 2019; Kirmizitoprak & Simsek, 2011). The form comprises 32 questions regarding the students' socio-demographic characteristics, their views on sexual education in schools, their history of any SRH education and their sexual experiences, and their thoughts about sex-related issues.

3.5.2 | Test of "Who is That?"

The researchers prepared the test of "Who is that?" in line with the literature. It consisted of six questions to identify the most liked students with leadership characteristics (Akkuş et al., 2016).

3.5.3 | PESAF

The PESAF was developed by Evcili and Golbasi to evaluate the skills and competence of peer educators in education. The participants were asked to plan and present the educational module on SRH. The principal researcher evaluated their presentation. The form consisted of 15 items measured on a 5-point Likert scale addressing the communication techniques of the peer educator candidates. The scale ranged between 15 and 75, and those who obtained higher than 50 were included in the study. The higher the score better the competencies and skills (Evcili & Golbasi, 2019). The scales' Cronbach's α coefficient was found to be .93. Permission was obtained from the authors for the developers of the scale.

3.5.4 | SHKQ

The SHKQ is a standard quantitative tool developed by Evcili and Golbasi in the Turkish language to evaluate university students' levels of knowledge about sexuality and sexual health. It comprises 40 multiple-choice questions. Each correct answer scores as "1," and each incorrect answer or left blank scores as "0" overall rating from 0 to 40. It has been validated by the developers (Evcili & Golbasi, 2017). The higher the score, the higher the level of knowledge about sexual health. In this study, Cronbach's α was calculated as .89. Permission was granted from the developers.

3.5.5 | RHS

The RHS is a standard quantitative tool developed by Saydam et al. to measure the reproductive behavior of adolescents. The scale consisted of 34 items in six dimensions. Of all the items on the scale, 16 are reverse questions. It was measured on a

5-point Likert scale rating from 1, "strongly disagree," to 5, "strongly agree." Accordingly, the overall total score range from 34 to 170. Saydam and colleagues (2010) assured the validity and reliability of the Turkish version of the scale. In our study, the Cronbach α coefficient of the scale was found to be .91. Permission was obtained from the authors for its use in the study.

3.6 | Analysis of data

IBM SPSS (Statistical Package for Social Sciences) 25.0 licensed program was used to analyze the data. The results were evaluated at the confidence interval level of 95% at the significance level of $p < .05$. The Shapiro–Wilks test was used to judge the quality of the distribution of the data. The results confirmed normal distribution. Descriptive statistics were used to analyze the demographic data, including means, standard deviations, and percentages. In both the intervention and control groups, ANCOVA and Post-hoc Mauchly analysis were used to compare the SHKQ and RHS scores within groups. The independent *t* test was used to compare the between-group comparison of the SHKQ and RHS scores. ANCOVA test was used to determine the effect size of educational modules in both intervention and control groups. Linear regression analysis was used to determine the relationship between the SHKQ scores of the intervention and the control groups. Participants who did not meet the study inclusion criteria and did not complete the scales were excluded.

3.7 | Ethical dimension

In line with the Declaration of Helsinki, written consent was obtained using a prepared form, beginning with an explanation about the purpose of the study and assuring the participants about the confidentiality of the information.

4 | RESULTS

4.1 | Findings—All participants

The mean age of the participants was 20.42 ± 1.14 years; the mean age of the first sexual intercourse was 17.01 ± 2.22. Almost half of the participants (47.6%) reported receiving no information about SRH before the study and scored their knowledge as insufficient. Approximately 42.5% of the participants have not discussed their SRH problems with their families, and they mostly (32.2%) provided information through social media. Among the participants, 22% reported having at least one issue related to SRH. Menstrual irregularity and STI (30.9%) were the most experienced problems. Most participants (82.8%) considered a man's premarital sexual experience as usual, yet they opposed a woman's premarital sexual experience (58%). It was addressed that 69.6% of the students maintained a regular sexual life and that 57.9% did not use contraceptive methods. The main reasons for not using a contraceptive method were reported as impairing naturalness (46%). The characteristics of the participants regarding sociodemographics and SHR situation are summarized in Table 1.

4.2 | Findings—The peer educator group

The mean age of the peer educators was 20.6, and the mean age for sexual intercourse was 19.0. Most of the peer educators (72%) were female students. According to the paired-sample *t* test results, the mean PESAF score increased after implementing the educational module. A similar increase can be seen in SHKQ and RHS scores. All of these increases was found to be statistically significant (Table 2).

4.3 | Findings—Intervention and control groups

The SHKQ within-group repeated measurements were evaluated with the ANCOVA test and Post-Hoc of Mauchly comparing the results of the pretest and final evaluation indicated a significant improvement in scores of SHKQ in both groups (F 743.0; $p = .001$).

As seen in Figure 2, there was a significant difference between the mean SHKQ scores of the intervention and control groups ($p = .01$). The mean SHKQ score of the intervention group that received an educational module from the peer educators was higher than that of the control group who received an online module by the principal researcher (t 20,885; $p = .001$, Table 3).

TABLE 1 Demographic characteristics of the participants.

	Peer educator (*n* = 25)		Intervention (*n* = 125)		Control (*n* = 125)		Total (*n* = 275)	
	n	%	*n*	%	*n*	%	*n*	%
Gender								
Female	18	72.0	51	40.8	67	53.6	136	49.4
Male	7	28.0	74	59.2	58	46.4	139	50.6
Living place								
City	17	68.0	48	38.4	45	36.0	110	40.0
Metropolis	6	24.0	45	36.0	38	30.4	89	32.3
Village	2	8.0	32	25.6	42	33.6	165	27.7
Financial situation								
Middle	9	36.0	69	55.2	63	50.4	141	51.2
Good	11	44.0	44	35.2	46	36.8	101	36.7
Bad	5	20.0	12	9.6	16	12.8	33	12.1
Marital status								
Single	20	80.0	85	68.0	106	84.8	211	76.7
With their partner	5	20.0	40	32.0	19	15.2	64	23.3
Smoking habits								
Regularly	9	36.0	35	28.0	35	28.0	79	28.7
Sometimes	8	32.0	52	41.6	67	53.6	127	46.1
Never	8	32.0	38	30.4	23	18.4	69	25.2
Alcohol habits								
Sometimes	14	56.0	89	71.2	89	71.2	192	69.8
Never	9	36.0	18	14.4	27	21.6	54	19.6
Regularly	2	8.0	18	14.4	9	7.2	29	10.6
Seeing SRH education as necessary in schools								
Yes	25	100.0	119	95.2	115	92.0	259	94.1
No	0	0.0	6	4.8	10	8.0	16	5.9
SRH subjects needed in the education program[a]								
Contraceptive methods	13	32.5	84	36.3	36	24.8	133	42.1
STIs	9	22.5	56	24.2	49	33.8	114	36.1
Sexual health	7	17.5	28	12.1	10	6.9	45	14.2
Sexual pleasure	0	0.0	11	4.7	13	8.9	24	7.6
Experience of sexual intercourse								
Yes	4	16.0	76	60.8	59	47.2	139	50.6
No	21	84.0	49	39.2	66	52.8	136	49.4
Contraceptive use during your first sexual experience[b]								
Yes	2	50.0	27	35.5	39	66.1	68	49.0
No	2	50.0	39	51.3	18	30.5	59	42.4
I don't remember	0	0.0	10	13.2	2	3.4	12	8.6

[a]Multiple options can be selected.

[b]Based on the experience of sexual intercourse.

TABLE 2 Change of peer educators' skills, sexual health knowledge, and reproductive health behavior.

Peer educator	*n*	Pretest*M* (SD)	Posttest*M* (SD)	*t*	*p*
PSTAF sore	25	43.27 (0.23)	62.70 (0.12)	−11.5	.001*
SHKQ score	25	22.04 (0.10)	36.00 (0.08)	−19.5	.001*
RHS score	25	136.68 (0.41)	0.32 (0.19)	−7.0	.001*

*p value ≤ .001.

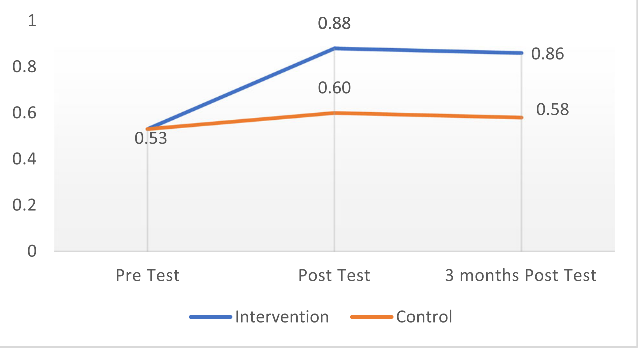

FIGURE 2 Changes in the students' SHKQ score.

TABLE 3 Change of sexual health knowledge by group over time.

Groups	*n*	Pretest*M* (SD)	*n*	Posttest*M* (SD)	*n*	3-month follow-up*M* (SD)
Intervention	125	21.20 (0.14)	125	35.20 (0.07)	124	34.40 (0.07)
Control	125	21.21 (0.12)	125	24.00 (0.13)	122	23.20 (0.13)

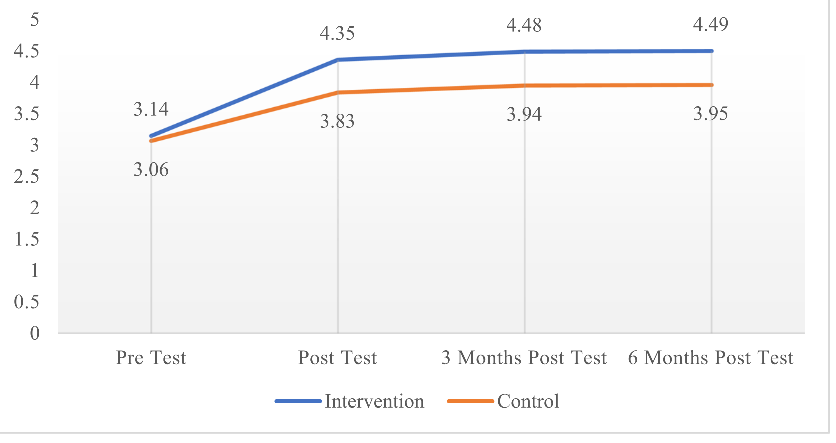

FIGURE 3 Changes in the students' RHS score.

The ANCOVA test and post-hoc test of Mauchly for comparing the results of the pretest and final evaluation indicated a significant improvement in scores of SHKQ in both groups (F 205.2; $p = .001$).

In Figure 3, there was a change by time in the mean scores of the students in the intervention and control groups in the 0–5 evaluation system. A statistical difference was found with respect to time in the evaluation of the mean RHS scores of the intervention and control groups ($p = .001$). On the other hand, the increase in the mean score of the students in the intervention group was higher than that of the control group (t 10.111; $p = .001$, Table 4).

TABLE 4 Change in the reproductive health behavior by group over time.

Groups	n	Pretest M (SD)	n	Posttest M (SD)	n	3-month follow-up M (SD)	n	6-month follow-up M (SD)
Intervention	125	130.56 (0.55)	125	147.90 (0.25)	124	152.32 (0.25)	121	152.66 (0.25)
Control	125	104.04 (0.04)	125	130.22 (0.52)	122	133.96 (0.52)	122	134.30 (0.52)

ANCOVA analysis was performed to determine the effect size of interventions. The results showed that the SHKQ scores of the intervention group were higher than the control group ($\eta 2 = 0.857$, $\eta 2 = 0.387$). Conversely, the effect size of the change in RHS scores for the control group was stronger in the control group than in the intervention group ($\eta 2 = 0.623$, $\eta 2 = 0.727$).

The linear regression analysis indicated a significant positive correlation between the scores of SHKQ and RHS after implementing the educational module in the intervention group but not in the control group. Examining the relationship between scores of SHKQ in the intervention group and their RHS scores after implementing the educational module with linear regression revealed a significant positive correlation ($ß = 1.481$ and $p < .005$), with an R^2 of 0.141. There was no significant relationship between scores of the SHKQ and RHS in the control group ($ß = 0.561$ and $p > .005$), with an R^2 of 0.021.

5 | DISCUSSION

The results of this study confirm the efficacy of the peer education model in transferring knowledge about sexuality and reproductive health to their peers.

The study results showed a significant improvement in educational skills, SRH knowledge, and behavior among peer educators (Table 2). A systematic review of 11 interventional studies conducted by Kaaya et al. revealed that SRH training was effective in knowledge, attitude, and communication (Kaaya et al., 2002). Similarly, a few studies on peer educators indicated that as the knowledge score increases, risky sexual behavior decrease (Bagnall et al., 2015; Marcell et al., 2013; Mason-Jones et al., 2013). This improvement can be attributed to better communication skills, active listening, empathy, self-recognition, and role-playing activities of peer educators.

The SHKQ scores of the intervention group were higher than the control group (Table 3, Figure 2). In a descriptive study conducted with university students in 2021, the mean SHKQ was 25.13 ± 5.28 (Uğurlu & Karahan, 2021). Although this score was higher than the mean SHKQ score of the participants in this study, the increase in the posttest and follow-up scores of the participants in our study was remarkable. Similarly, two other studies reported that the sexual health knowledge of the students in the intervention group who received peer education improved statistically significantly after education (Bagnall et al., 2015; Mohamadi et al., 2019). Moreover, the increase in the knowledge scores of the intervention group was higher than the control group (Mohamadi et al., 2019). Some studies also addressed that the sexual health knowledge of the intervention group that received peer education increased more than that of the control group (Bonell et al., 2013; Özkan et al., 2020; Salam et al., 2016). The difference in SHKQ scores between the intervention and control groups might have resulted from the comprehensiveness of the educational module in our study. The results obtained in this way reflect that the peer educators successfully transferred knowledge to their peers. Also, the incentives we provided for the participants may have a role in the effectiveness of the education which we did not measure its impact. As it was hypothesized that the SHKQ score of the intervention group, would be higher than that of the control group, and the hypotheses were confirmed by the results.

Our study found a significant increase in the RHS scores of the students in the intervention group over time. Also, there was a similar increase in the control group. Although the rise in the RHS scores of both groups was statistically significant (Table 4, Figure 3), the increase in the intervention group was higher than in the control group. Similar results were reported. They found a statistically significant difference between the students' pre- and posteducation RHS scores (Ascı et al., 2016). Since the samples of the mentioned study were all among nursing students, it may explain why their mean scores for RHS were higher than ours. Findings about the effectiveness of peer education interventions are conflicting, while some studies reported statistically significant improvements (Güçlü et al., 2015; Liu et al., 2018; Morrison-Beedy et al., 2013; Pound et al., 2017; Sani et al., 2016), some others reported having no impact on the RHS (Kim & Free, 2008; Tolli, 2012). Authors believe that the interactive activities performed by peer educators facilitated behavior change. It seems that peer educators are good at transfering their experiences and internalized behaviors to their peers.

Compared with the control group, the effect size of intervention for SHKQ was significantly high in the intervention group. On the contrary, in the control group, the effect size of RHS was more significant than the intervention group replying that the principal researcher's online education was more efficient in the sexual behavior of participants (Table 5). In a study

TABLE 5 Comparing the effect of educational modules among intervention and control groups.

SRH education	Groups	*n*	Pretest *M* (SD)	Posttest *M* (SD)	*F*	η^2	*p*
Difference between the SHKQ pre-posttest	Intervention	125	21.20 (0.14)	35.20 (0.07)	743.0	0.857	.001*
	Control	125	21.21 (0.12)	24.00 (0.13)	78.1	0.387	.001*
Difference between the RHS pre-posttest	Intervention	125	130.56 (0.55)	147.90 (0.25)	205.2	0.623	.001*
	Control	125	104.04 (0.04)	130.22 (0.52)	330.4	0.727	.001*

*p value ≤ .001.

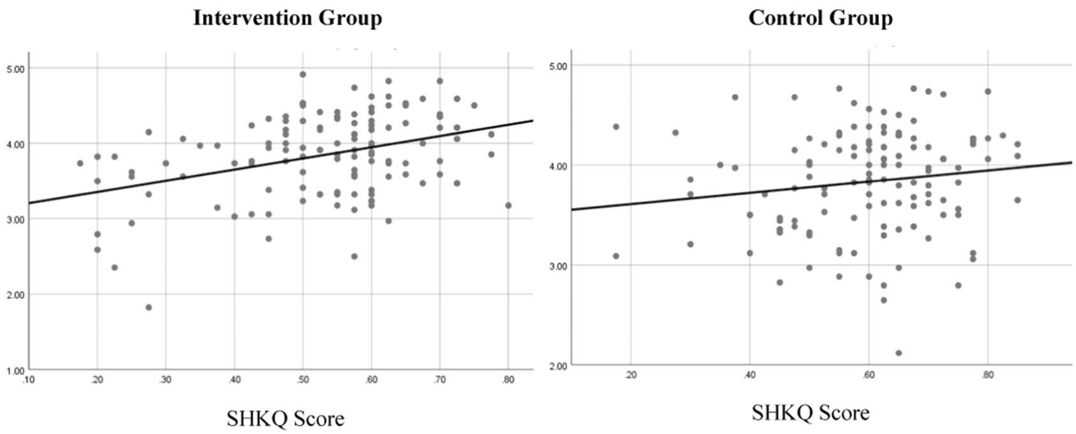

FIGURE 4 Correlation between SHKQ and RHS scores in the intervention and control groups.

by Esen and Siyez (2017), similar results were reported. It has been proposed that young people trust nonjudgmental and well-educated sexual health educators (Barbagallo & Boon, 2012; Brown et al., 2012; Döring et al., 2017). Similarly, Kimmel et al. reported that African American adolescent participants prefer a sexual health educator who is young, objective, and knowledgeable about sexual health. Rose and Friedman suggested that sexual health education be provided by health professionals or by individuals who have experienced the consequences of risky sexual health decisions (e.g., adolescent pregnancy, STI/HIV history) (Rose & Friedman, 2017) increases adolescents' level of interest in education and their perception of its relevance (McKee et al., 2014). The fact that the effect size of the intervention made on the control group in our study was statistically significant supports the literature in this regard.

In the intervention group, we found a significant positive relationship between the SHKQ scores and their RHS scores (Figure 4). Although an increase was found in the control group, also, it was not statistically significant. In similar studies, it has been reported that an increase in knowledge about SRH improves behavioral outcomes (Ghasemi et al., 2019; He et al., 2020; Maticka-Tyndale & Barnett, 2010; Medley et al., 2009). In the intervention group, it was hypothesized that as the SHKQ scores increase, their RHS scores increase as well, and the results confirm this.

5.1 | Limitations of the study

One of the strengths of the study was that the blind technique was applied to eliminate the bias in the data collection phase. The fact that with the test of "Who Is That?," the peer educators were selected among individuals who were most prone to peer education was another strength of the study. Being an RCT is another strength of this study which makes the results trustworthy. In addition, our educational module was a comprehensive sex education, addressing the positive side of sexuality.

As for the limitations, although the principal investigator intended to accompany all of the educational group meetings implemented by the peer educator, she could not attend 3 of the 25 meetings, which might impact the results. Though we assured participants of the confidentiality of the data, self-reporting may be another limitation of the present study, as some researchers argue that the participants might not reveal all the information asked for. This study was conducted on university students; therefore, different results may be produced with secondary or high school students.

6 | CONCLUSION

SRH peer education is a trustworthy method for transferring information about reproductive behavior and sexuality among youth, and it is particularly applicable to university students. Moreover, providing counseling and SRH education and services in health centers at universities and integrating peer educators into this process should be considered.

We suggest completing an educational course for peer educators before to obtain better outcomes. Also, health authorities may use the potency of these peer educators in other regions outside the university.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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