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An Evaluation of the Effectiveness of a Reproductive Health Education Program for Nonmedical Students in Iran: A Quasi-Experimental Pre-Test, Post-Test Research

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Abstract

Background: Young people age 10 - 25 are an important population to evaluate the female youth educational program essential to the prevention of issues related to reproductive health.
Objectives: This study evaluated the effectiveness of the education program for improving university student's reproductive health.
Patients and Methods: This quantitative study was conducted in Iran from July 2014 to March 2015. The questionnaire addressed socio-demographic features, knowledge of reproductive problems, and attitudes. Program effectiveness was examined using a quasi-experimental research design with pre-intervention and post-intervention. Data from questionnaires was collected pre-intervention and post-intervention from 150 female students.
Results: In this study, results showed that an intervention and education program had a significant effect on several issues related to reproductive health. Most participants stressed the need to provide reproductive health services for young girls.
Conclusions: The results of this study suggest that the reproductive health education program improved the students' knowledge and attitudes about sexuality and decision-making after the program and that these educational programs are important for youths.

Keywords: Young, Reproductive Health, Education Program

1. Background

Young people age 10 - 25 are an important population group with a great potential for physical, mental, and psychological development, and young people in Iran are a significant proportion of the population (1). Youth are of particular concern in relation to reproductive health (2). At the international conference on population and development (ICPD) held in Cairo in 1994, the terms reproductive and sexual health were disseminated widely among all community sectors (3). Young girls have increasingly negative reproductive health outcomes (4). Most of the population in Iran is under 25 years of age. According to the statistical center of Iran, a total of 60% of the population is under 25 years old, and over 50% are under 20 years (5). In the Islamic Republic of Iran, students form a large part of the population, and separation from their parents exposes them to sexual reproductive health problems, such as love relationships, physical health problems, alcohol use, weight changes, eating problems, AIDS, drug abuse, time management, fear of examinations, and serious psychological concerns (6). Reproductive health education is essential to the prevention of issues related to reproduction (7). The sexual reproductive health knowledge of young people in Iran is one of the most under-researched aspects in the Iranian population. Little is known about the reproductive health youth education program in Iran. Therefore, it is essential to evaluate these programs in the female youth population. The aim of this study was to evaluate the effectiveness of a reproductive health education program for nonmedical students in Iran.

2. Objectives

The present study evaluates the effectiveness of the educational program for improving university students' reproductive health.

3. Patients and Methods

This study's purpose was to evaluate a reproductive health education program on the improvement of reproductive health for nonmedical students in Iran using a questionnaire to assess their knowledge and attitudes. A quasi-experimental, pre-test, post-test research design was conducted to evaluate the nonmedical students' knowledge and attitudes about reproductive health before and after the program. The interval between the pre-test and post-test was about nine months. The study was conducted in the city of Khoramabad in southwest Iran. The Khoramabad region has a population of 348,216. This study was conducted in a nonmedical university (Lorestan University) from July 2014 to March 2015. Lorestan University is the oldest higher education institute in Khoramabad. It was established in 1977 as the education center of Lorestan. Currently, this university has seven faculties and serves 8,239 students. The present study was conducted in the faculty of sciences, which serves 1,785 students studying for bachelor's, master's, and doctorate degrees (8).

A quantitative design based on the questionnaire approach was used to conduct this study based on similar studies of knowledge and attitudes in different countries (9, 10). The questions were modified according to Iranian culture and social norms. The questionnaire used in this study consisted of 100 items, including the knowledge test of 34 items, which asked students if the question was true or false, 0) false or 1) true, and scores ranged from 0 to 34 points. The higher the score, the more knowledge they had about reproductive health. The attitude test had 28 items and asked students if they agreed or disagreed, 1) strongly disagree to 5) strongly agree, and the possible score range was from 28 to 135 points. Demographic information included 12 items: four items, religious information; seven items, marriage age and pregnancy information; and 15 items, friends' and parents' information. The instrument was assessed for content validity by 15 specialists in reproductive health, and after its validity was estimated, its reliability was measured by the test-retest method. Accordingly, the questionnaire was administered twice to 30 students within a two-week interval, and the correlation coefficient was 0.8.

A total of 150 female students were chosen for this study based on convenience sampling. All participants were informed about the purposes and the methods employed in this study. They were informed that participation was voluntary and they could refuse to participate at any time without being deprived of the services delivered to them.

3.1. Ethical Issues

This study is a part of the first author's doctoral dissertation. The ethics committee of Tehran University of Medical Sciences approved the study proposal and corroborated its ethical considerations.

3.2. Statistical Analysis

Results were expressed as frequency, mean, and standard deviation (SD) for qualitative and quantitative data, respectively. The data was analyzed using SPSS, version 21. A value of $P < 0.05$ was considered statically significant.

3.3. Education Program

The Reproductive Health Program at Lorestan University in Khoramabad was implemented in July 2014 to March 2015, and the program, called the Yari Program, aimed to help female students with reproduction health issues. This was a nine-month program, and the main project activities included peer education, reproductive health materials, counseling, workshops, lecture meetings, education carnivals, education camps, and mass media. The topics included menstrual hygiene, pregnancy, antenatal care, various methods of contraception, sexually transmitted diseases (STDs) and HIV, unwanted pregnancy, and cancer prevention. First, students took the pre-test, and after the intervention with a comprehensive health education program, its effect was evaluated with a post-test questionnaire.

3.3.1. Peer Education

In this study, 15 peer educators were educated in various levels and in this course, and they were responsible for education and counseling with other students in the university.

3.3.2. Counseling

With the establishment of the Center for Reproductive Health two days per week on Sundays and Tuesdays, students referred to the center for advice on issues related to reproductive health.

3.3.3. Workshops

During the nine months, about six workshops on reproductive health issues were held at the university.

3.3.4. Lecture meetings

Two sessions a week, Monday and Thursday nights, lectures were held at the university dormitories with group discussion and a question-and-answer session on issues related to reproductive health.

3.3.5. Reproductive Health Materials

The program was enhanced using a picture drama and reproductive materials. Reproductive materials included audio-visual aids, such as a blackboard, posters, charts, videos, and pamphlets. The picture material included 14 pieces of drama material measuring 30 cm by 42 cm. The picture drama used two different trees with youths at the top of the trees indicating the two different decision-making paths for young adolescents who engaged in sexual activities and their negative consequences. It also explained positive ways to stay healthy and explained the circumstance in which having sex early can spoil their future plans and shorten their lives (11).

3.3.6. Mass Media

Material relating to reproductive health by mass media (television) programs was broadcast twice a week on Sundays and Wednesdays via the native network AFLAK, and the programs were sent out at the same time via SMS messaging to inform students.

3.3.7. Education Carnivals

During the nine months, about three education carnivals on reproductive health issues were held at the university.

3.3.8. Education Camps

During the nine months, about four education camps were held inside and outside for advice on issues related to reproductive health.

4. Results

4.1. Demographic Data

In this study, 150 questionnaires were distributed to students. Participants' ages ranged from 18 to 52, with a mean age of 24.13 (SD = 6.912). The majority (79%) of participants were in the age group of 18 - 25 years. The majority (91.3%) of students were never married, and 74% lived in the dormitories. Of the students, 85.3% had a bachelor's degree, 10% a master's degree, and 4.7% a doctorate degree. A total of 21 (14%) were majoring in geology, 28 (18.8%) in chemistry, 19 (12.7%) in statistics, 17 (11.3%) in mathematics, 24 (18%) in biology, 13 (8.7%) in computers, and 25 (16.6%) in physics. The majority (92.3%) of their parents was literate (Table 1).

Table 2 shows the awareness and attitudes of students regarding the availability of information on reproductive issues. It was observed that their knowledge and attitudes were poor during pre-test, and remarkable improvement was noted following the intervention ($P < 0.05$). It was observed that knowledge and attitudes improved to a great extent after the intervention for various issues of reproductive health.

Table 1. Characteristics of the Demographic Data by Participating in the Study

Group	No. (%)
Age	
18 - 25	118 (79)
26 - 33	20 (13)
34 - 41	9 (6)
> 42	3 (2)
Marriage status	
Single	137 (91.3)
Married	13 (8.7)
Lodging	
Dormitory	111 (74)
Home	39 (26)
Degree	
Bachelor's	128 (85.3)
Master's	15 (10)
Doctorate	7 (4.7)
Literate parents	
Literate	138 (92.3)
Illiterate	12 (7.7)

Results showed that there was a significant difference between religious information before and after the intervention, as seen in Table 2. The mean and standard deviation of a student's religious information before the intervention was 2.61, and after the intervention was 3.056, with a significance level of $P < 0.000$. The intervention had a significant improvement on the content of students' religious information.

As seen in Table 2, the mean and standard deviation of attitudes toward marriage age and pregnancy before the intervention was 2.7467 and after the intervention was 3.0124, with a significance level of $P > 0.05$. The intervention had no significant differences in the attitude toward marriage age and pregnancy.

Also, the study results showed the mean and standard deviation of knowledge of reproductive health issues before the intervention was 1 and after the intervention was 1.58, with a significance level of $P < 0.000$. The intervention showed a significant increase in students' knowledge of reproductive health issues (Table 2).

According to Table 2, the mean and standard deviation

Table 2. Comparison of Knowledge and Attitudes of Students Toward Reproductive Health Issues Pre-Intervention and Post-Intervention

Row/Variable/Time	Mean ± SD	The Mean Standard Error	P Value
1			0.000
Religious information			
Pre-test	2.6133 ± 0.45071	0.03680	
Post-test	3.0567 ± 0.40817	0.03333	
2			0.214
Attitude toward marriage age and pregnancy			
Pre-test	2.7467 ± 0.24835	0.02028	
Post-test	3.0124 ± 2.59771	0.21210	
3			0.000
Knowledge of reproductive health issues			
Pre-test	1.0067 ± 0.02268	0.00185	
Post-test	1.5761 ± 0.23864	0.01948	
4			0.000
Attitude toward reproductive health issues			
Pre-test	1.5884 ± 0.57566	0.04700	
Post-test	2.4396 ± 0.41234	0.03367	
5			0.000
Knowledge of HIV and STDs			
Pre-test	1.1716 ± 0.02001	0.00163	
Post-test	1.6974 ± 0.19901	0.01625	
6			0.000
Attitude toward HIV and STDs			
Pre-test	1.6810 ± 0.86627	0.07073	
Post-test	2.3733 ± 0.54938	0.04486	
7			0.624
Knowledge of pre-marriage intercourse			
Pre-test	2.0187 ± 0.93273	0.07616	
Post-test	2.0667 ± 0.74109	0.06051	
8			0.000
Knowledge of the use of mass media			
Pre-test	1.0100 ± 0.04468	0.00365	
Post-test	1.8825 ± 0.43210	0.03528	

of attitudes toward reproductive health issues before the intervention was 1.588 and after the intervention was 2.44, with a significance level of $P < 0.000$. The intervention had significant differences in the attitude of reproductive health issues and improved students' attitudes toward reproductive health issues.

Results showed the mean and standard deviation of knowledge of HIV and STDs before the intervention was 1.17 and after the intervention was 1.7, with a significance level of $P < 0.000$. The intervention had significant differences in the knowledge of HIV and STDs and increased students' knowledge of HIV and STDs (Table 2).

According to Table 2, the mean and standard deviation of attitudes toward HIV and STDs before the intervention was 1.68 and after the intervention was 2.37, with a significance level of $P < 0.000$. The intervention had significant

differences in the attitudes toward HIV and STDs and increased students' attitudes toward HIV and STDs.

According to Table 2, the mean and standard deviation of attitudes toward pre-marriage intercourse before the intervention was 2.0187 and after the intervention was 2.0667, with a significance level of $P > 0.05$. The intervention had no significant differences in the attitude toward pre-marriage intercourse.

Results showed the mean and standard deviation of knowledge of the use of the mass media before the intervention was 1.01 and after the intervention was 1.88, with a significance level of $P < 0.000$ and a confidence interval of 99%. The intervention had a significant increase in students' knowledge of the use of the mass media (Table 2).

Also, results showed more girls had not communicated about sex and HIV/AIDS with their parents.

In this study, outcomes revealed that, among the programs that were implemented, peer education (73%) and mass media (81%) have the greatest effect on the promotion of reproductive health issues with the students.

5. Discussion

This study examined the effectiveness of the education program for improving university students' reproductive health issues. The greatest changes were observed regarding knowledge and attitudes. Research results indicated that students of the Lorestan University have large sexual and reproductive health needs. According to the results, students' awareness of reproductive issues, such as sexually transmitted disease, pregnancy, contraception, and sexual health, is inadequate. The lack of knowledge about sex and reproductive health among youth is also a factor reported by studies carried out in many developing countries (11-13).

The findings indicated an increase in knowledge and attitudes that showed a statistically significant difference between pre-test and post-test in students. The study by Frida and Shigeko in 2011 showed a reproductive health program for both girls and boys improved students' knowledge and behavior about sexual decision-making (14).

In addition, a study by Gallant and Maticka-Tyndale found that knowledge and attitudes are easy to change, while changing behavior is challenging (15). Similar results appeared in a systematic review by Paul-Ebhohimhen et al. which reviewed 23 articles and reported that knowledge and attitudes were most likely to change, while behavior changes were less likely to occur (16). Various studies have shown the effectiveness of interventions in increasing knowledge of reproductive health in developing countries (17). Yari et al. (2015), in their qualitative study on 25 female students, showed that nearly all of the participants wanted sexual health education to be offered formally in their curriculum and were interested in taking a course on reproductive health in the university (18).

Also this study revealed that more girls had not communicated about sex and HIV/AIDS with their parents. Various studies have shown that adolescent girls who communicate more with their parents had significantly higher knowledge and attitudes about reproductive health than those who did not communicate. Another report found that parents considered sexual communication difficult and embarrassing (19), while Yari et al. illustrated that the majority of students believed that family is a very important factor in the development of sexual behavior (18).

Our results showed the intervention had no significant differences in the attitudes toward marriage age and pregnancy and pre-marriage intercourse. The P value was 0.214 and 0.624, respectively. The results of the qualitative study about problems of reproductive health in Iranian female students showed that some of the participants only thought of reproduction as pregnancy. This theme included the following: lack of awareness and accurate information on reproductive health; lack of coverage of sexual and reproductive health problems by the media; and lack of nonmedical reproductive health-related books. Another qualitative study in Iran illustrated that, considering the Iranian cultural and religious background, families and religious beliefs play an important role in reducing high-risk sexual behaviors among Iranian adolescents (20).

In this study, results showed that, among the programs that were implemented, peer education (73%) and mass media (81%) have the greatest effect on the promotion of reproductive health issues with the students. A study by Kalembo et al. revealed that the media plays an important role in enhancing their reproductive health of adolescents in sub-Saharan Africa (7). A study by Peykari et al. showed that peer education was an acceptable program for university students (21).

In conclusion, it is necessary to enhance the knowledge of the youth and increase the participation of experts and specialist teachers in developing educational materials that comply with the cultural and religious values of the society.

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