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A comparative study of the effect of two educational methods of motivational interviewing and peers on self-efficacy of female high school students in relation to puberty health

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Abstract:

BACKGROUND: Adolescents experience many physical and psychological changes during adolescence. Not paying attention to the issue of girls' puberty may have a negative impact on their mental health and self-efficacy in future. The aim of this study was to compare the two methods of motivational interviews and peers on puberty health of female high school students.

MATERIALS AND METHODS: This study was performed semi-experimental intervention on 334 high school students in 2019 through multi-stage randomization. Data using two demographic questionnaires and Scherrer self-efficacy questionnaire in three stages (pre-test, immediately after the test and one month after the test). It was collected that in the motivational interview group, 5 training sessions were presented, and in the peer group, only one training session was taught to the peers and the control group was not trained in any intervention.

RESULTS: Immediately after, and 1 month after the intervention, the two intervention groups had significantly better scores in self-efficacy compared to the control group ($P = 0.001$). The mean score of self-efficacy in the control group in the three time periods before, immediately, and one month after the intervention, respectively (50.75 ± 5.322 , 50.45 ± 5.34 , 50.45 ± 5.37), in the motivational interview group (50.56 ± 5.95 , 53.63 ± 5.83 , 56.03 ± 6.49) and in the peer group (50.10 ± 5.62 , 54.40 ± 4.28 , 59.19 ± 4.43) was. Moreover, there were significant differences in self-efficacy scores within and between the groups by time ($P < 0.001$) in intervention groups.

CONCLUSION: This study showed that puberty health education increases students' self-efficacy, that correct information should be conveyed by peers and motivational interview, and motivational interview is more effective.

Keywords:

Adolescent, motivational interview, puberty, self-efficacy, peer group

Introduction

One of the most important periods of human life is adolescence. Adolescence is one of the most critical stages of a person's life and as a bridge, it connects the child to adulthood. Adolescence is a turbulent period that involves severe physical, psychological, and social changes. Extensive psychological

problems such as depression, antisocial behaviors, and academic failure may occur during this period.^[1,2] Puberty is one of the most important aspects of this period that knowledge of the natural process and its problems leads to a successful transition to adulthood and fertility, which most girls do not have basic and essential information about physical and mental condition during

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puberty and health behaviors with it. Lack of proper training causes many problems.^[3,4]

The concept of self-efficacy was defined in 1977 by Albert Bandura, a professor at Stanford University, and in Bandura's view, a sense of self-efficacy is an important prerequisite for behavior change. Changing or continuing a behavior is successful. This is the basis of understanding self-efficacy in relation to perseverance, effort, and perseverance in every aspects of life.^[5,6] Studies show that people with high self-efficacy are more likely to engage in challenging behaviors and provide better interpretations of health-related behaviors and can easily control their behaviors.^[7] The factor of self-efficacy plays an important role in modulating the relationship between knowledge and behavior of individuals. Adolescence is a period of evolutionary cycle during which self-efficacy beliefs affect psychological outcomes.^[8] In this period, people face new challenges and how to cope and adapt to these challenges is partly influenced by one's self-efficacy beliefs, this is the driving force and dynamic of the society, and therefore, the issue of adolescents' mental health should be given more importance than before.^[9] Because the more people in the community have information about health problems, the more they try to fight it, and this information and awareness is not possible except through education, so the structure of self-efficacy can be used as a theoretical basis in many health education programs should be used by health-care professionals to create and promote healthy health behaviors.^[10,11]

Complications and problems during puberty are easily preventable and health education is one of the fundamental and successful strategies for health promotion that works with various methods to improve awareness, formation of beliefs and tendencies, acquisition of health behaviors and lifestyles, puberty health. It is the principles and care that lead to maintaining and promoting the physical-mental and emotional health of the individual in this period and other periods that need education more than anything, so discussing the appropriate method and time of puberty health education for adolescents is important.^[12,13] It has a special. In teaching about issues related to puberty, schools have a special importance and position and are the best place to play a role.^[14]

Puberty training methods are also important. In most of the Iranian girls' puberty health education programs, the common method of lecturing is used as the main method and presentation of pamphlets and educational packages.^[15-17] Some studies have examined and compared the lecture method with other teaching methods, including providing a peer group training package, playing, and role-playing.^[18-20] It

seems that the use of participatory learning methods in educating adolescents is the most effective way to develop their knowledge, attitudes, and skills to achieve the ability to make healthy decisions throughout the life.^[21,22]

Peer education in health programs has also reached a significant position. Studies on the effectiveness of peer education on reducing smoking and drug use in adolescents and young people have been conducted.^[23,24] In Iran, studies on the promotion of awareness, attitude, and performance of puberty health by peers are few and these studies only the physical dimension of puberty. In addition to flexibility and applicability in various behavioral areas, motivational interviews are considered to be applicable individually and in groups, and cover clients from childhood to old age, and as direct treatment with other therapies in various forms in person, by telephone and online. Is used.^[25,26]

Education and training usually increase knowledge, attitude, and skills and also improve health behaviors. It can be concluded that one of the factors that increase self-efficacy is education. Because the more information people have about health problems, the more they try to correct them, and this knowledge is only possible through education.^[27,28] Therefore, the structure of self-efficacy can be used as a theoretical basis in many health education programs by health professionals to create and promote health behaviors.^[29] Numerous studies conducted in different places show the effect of self-efficacy along with increasing appropriate actions in students,^[11,30,31] the aim of this study was to compare the two methods of motivational interviews and peers in female high school students in relation to puberty health in Shahroud in 2019.

Materials and Methods

Study design and setting

In this semi-experimental intervention study, all high schools of Shahroud during in the school year of 2018–2019 entered the study by samples were selected by multi-stage randomization. According to the formula of sample size and considering alpha 0.05 and test power 80% and according to the study of similar studies conducted abroad and inside the country such as studies of Navidian *et al.*, Parsa *et al.*, and Sistani *et al.*^[31] The sample size was calculated for each group of 61 people, which according to the three groups (motivational interview group, peer group and control group) is multiplied by the root of 2 and is equal to 86 samples in each group. Considering the probability of sample loss, 100 people enter each group. According to the sampling unit, which is a class, the number of samples is estimated as follows: 10 ± 100 people.

Study participants and sampling

Inclusion criteria included eight grade students with Iranian nationality. The exclusion criteria included consumption of psychiatric drugs, having family problems such as death or divorce of parents in the past 6 months and not attending two consecutive classes and not cooperating with the researcher during the study.

Initially, according to the division of urban areas, all schools were divided into three groups: public schools in the city center, public schools in the suburban areas, and private schools. A total of 15 schools (6 public schools in the city center, 6 public schools in the suburbs, and 3 private schools) entered the study. Then, randomly from each school, an eighth-grade class has entered the study and all the students in the class were examined. Pretest questionnaires were completed by the students before the schools were randomized into three groups (two intervention groups and one control group). Then, 5 schools (2 public schools in the city center, 2 public schools in the suburbs, and 1 private school) were randomly assigned to the intervention Group 1, 5 schools (2 public schools in the city center, 2 public schools in the suburbs, and 1 private school) were randomly assigned to the intervention Group 2 and five other schools were selected as a control group. A total of 334 students entered the study. Data were collected using a demographic questionnaire, including age, parent's education, and Scherrer standard self-efficacy questionnaire.

Data collection tool and technique

Self-efficacy is measured by Scherer's standard self-efficacy questionnaire.^[27] This scale has 17 questions that are based on the Likert scale from strongly disagree to strongly agree. The scoring of this scale is such that it is assigned to each item from 1 to 5. Questions 1, 3, 8, 9, 13, and 15 are scored from right to left and the rest of the questions are scored in reverse, i.e., from left to right. Therefore, the maximum score is 85 and the minimum score is 17. In studies in Iran, its validity and reliability have been done.^[32,33]

In the intervention Group 1, motivational interviewing was presented to students during 5 sessions of 60–90 min and one session per week based on the approved protocol of performing motivational interviewing. Before the start of the motivational interview sessions, one session was held to teach the educational content of the puberty health questionnaire to match students' information at the beginning of the study. The questionnaires were completed before the intervention, immediately after the intervention, and 1 month after the intervention.

In the intervention group 2, the peer group was selected from active volunteers. Each peer educator was

responsible for transmitting information to 5-6 other students. In one session, the educational content was explained to them like the first training session held for the motivational interviewing group (Included various information on puberty, menstruation, health behaviors, primary dysmenorrhea, nutrition, exercise, physical health, drug use and abuse, smoking and alcohol, AIDS, and hepatitis). After the training, the instructors were given 1 month to pass on the information they received to their classmates. After 1 month, the post-test forms were completed by the students immediately after and 1 month after the end of the intervention. The control group completes the forms in three steps, as in the previous two groups. In order to observe ethics in research, after sampling and intervention, two training sessions on puberty health were conducted by the researcher for the control group. The participants and statistical counselors were blind to the study, and the only researcher who performed the interventions was aware of the intervention and the control groups.

The SPSS software version. 16.0 (Microsoft Corporation also This software was created by Norman Ney in 1968 at Stanford University in the United States) was employed for analyzing the data. The measures of descriptive statistics (including mean and standard deviation) were used for data description. Between-group comparisons respecting categorical and numerical variables were made using the Chi-square and the independent-samples t-tests, while within-group comparisons respecting the variations of the mean scores of puberty knowledge and practice were made using the repeated measures analysis of variance. Significance level was set at <0.05.

Ethical consideration

Also, before starting the study, this project was registered in the research vice chancellor of the university and received the codes of ethics and clinical trial, and the students were satisfied before doing the work.

Results

In this study, 334 students entered the study include (motivational interviewing group ($n = 117$), the peer training group ($n = 94$), and the control group ($n = 123$). The mean age of the students was 14.44 ± 0.51 years. Comparison of demographic characteristics showed no significant differences between groups [Table 1].

There was no significant difference between the self-efficacy scores of the adolescent girls in the three groups before the intervention, while immediately and 1 month after the intervention, the intervention groups (motivational interviewing and peers) scored

significantly higher in the self-efficacy group than the control group [Table 2].

Table 3 shows the pairwise comparison of groups at different times. In this study, it was shown that there was no significant difference between the scores of the groups in the pre-test. In post-test 1, the intervention groups scored higher than the control group, which was statistically significant. However, there was no significant difference between the intervention groups. In post-test 2, the intervention groups obtained higher scores than the control group, which was statistically significant. At this time, the score of the peer group was significantly higher than the motivational Interview group.

Table 1: Demographic characteristics in three groups

Variables	Motivational interview	Peer group	Control	P
Age (year)	14.53±0.54	14.37±0.48	14.41±0.49	0.146*
Father's age	10.42±4.08	10.52±3.30	10.56±3.55	0.722*
Mother's age ^[34]	10.30±3.08	10.45±3.79	10.08±3.90	0.740*
Father's job				
Worker	16	15	17	0.116**
Employee/retired	43	44	45	
Self-employment	49	51	54	
Mother's job				
Housekeeper	107	78	103	0.125**
Other	10	16	20	

*P value by ANOVA, ** χ^2 . ANOVA: Analysis of variance

Table 2: Pair comparison of self-efficacy scores by group and time

Variables	Mean±SD	Mean differences	SD	t	df	P
Motivational interview						
Pretest	50.56±5.95	-3.077	2.907	-11.449	116	0.000
Posttest 1	53.63±5.83					
Posttest 2	56.03±6.49	-5.479	3.964	-14.948	116	0.000
Peers						
Pretest	50.10±5.62	-4.309	3.408	-12.258	93	0.000
Posttest 1	54.40±4.28					
Posttest 2	59.19±4.43	-9.096	3.833	-23.009	93	0.000
Control						
Pretest	50.75±5.32	0.301	2.056	1.622	122	0.107
Posttest 1	50.45±5.34					
Posttest 2	50.45±5.37	0.301	2.361	1.413	122	0.160

SD=Standard deviation

Table 3: Pairwise comparison of groups at different times

Variables	Pretest	P*	Posttest 1	P*	Posttest 2	P*
Motivational interview	50.56±5.95	0.79	53.63±5.83	0.001	56.03±6.49	0.001
Control	50.75±5.322		50.45±5.34		50.45±5.37	
Peer group	50.10±5.62	0.38	54.40±4.28	0.001	59.19±4.43	0.001
Control	50.75±5.322		50.45±5.34		50.45±5.37	
Motivational interview	50.56±5.95	0.56	53.63±5.83	0.28	56.03±6.49	0.001
Peer group	50.10±5.62		54.40±4.28		59.19±4.43	

*Independent t-test

Discussion

The aim of this study was to compare motivational interviews and peers on self-efficacy of female high school students in Shahroud in 2019. The results showed that self-efficacy scores increased after the intervention in both motivational interview groups and peers, which shows the effect of these interventions.

In the study of Khademian *et al.*,^[35] the results showed that nurses' workshops significantly increase their self-efficacy. In fact, training not only increases self-efficacy among health care providers but also increases their efficiency training in patients. Finds various studies have confirmed that it can significantly increase self-efficacy by educating the patient.^[36,37] Other similar studies have highlighted the effect of puberty health education on girls' knowledge and performance, which ultimately leads to a significant increase in performance and knowledge.^[38,39]

In a study aimed at comparing the effect of two educational methods of lecture and educational package on self-efficacy of female students aged 9–12 years, it was reported that both intervention groups significantly increased self-efficacy in students.^[40] The present study also has consistent results with this study. A study was conducted to investigate the impact of puberty health education and self-efficacy in 2018 in Iran. After the study, it was reported that puberty health education has been able to significantly increase the self-efficacy score. In the mentioned study, it was suggested that by providing education to students, it can improve their self-efficacy by providing learners with education.^[41] Our study is consistent with the desired studies.

A study was conducted in 2017 to investigate the relationship between cognitive techniques and self-efficacy in Iran. The authors report that cognitive techniques can effectively affect the self-efficacy and correctional outcomes of high school students. In the intervention group, there was a significant improvement in students' scores that was not in the control group. This study also showed that with increasing self-efficacy, students' grades and academic achievement also increase,^[42] which is consistent with our study, in

fact, indicates that appropriate interventions increase self-efficacy, which ultimately increases the individual's knowledge and academic success.

With increased self-efficacy, people have greater confidence in their abilities and are thus more likely to participate in healthy behaviors. Greater involvement in healthier practices, such as improved quality of life, results in better patient health outcomes. Choices that impact well-being (such as smoking, physical exercise, dieting, condom use, dental hygiene, seat belt use, and breast self-examination). Self-efficacy attitudes are cognitions that decide whether a shift in health behavior will be implemented, how much effort will be invested, and how long in the face of barriers and setbacks it will be maintained. Self-efficacy affects how high people set their targets for health.^[43] Educational intervention has a positive and important impact on self-efficacy and interpersonal relationships that are viewed and decrease barriers to increasing participation. This result indicates the significance of self-efficacy in the success of health behaviors.^[41] According to the current study findings, there was a considerable difference in the self-efficacy scores between the intervention and control groups immediately after and 1 month after the intervention. Self-efficacy significantly increased in the test group after providing the study intervention. The findings of other investigations also found that puberty health education significantly improved the self-efficacy of students and could contribute to healthy adolescent habits.^[40,41,44]

According to the mentioned study, choosing the appropriate method in teaching adolescents has played a significant role in promoting students' self-efficacy. A possible explanation for this finding is that adolescence is an important milestone in a person's social and psychological development. During this period, various factors and issues can cause adolescents to suffer from various behavioral, social, emotional, psychological, and personality disorders due to their sensitive and fragile spirit. One of the causes of adolescents' ignorance about issues related to puberty and adolescence (especially their mental health) and also the lack of informed sources to inform adolescents in this regard. Adolescents who have not acquired the necessary skills to cope with this sensitive period do not have emotional, emotional, and psychological and personality balance. He cannot have a healthy relationship with others, he cannot express himself in society, and he suffers from a kind of confusion and distress. While teaching topics related to puberty health (physical and mental) can solve many problems and help them interact properly with the environment and thus increase self-efficacy.

Limitation and recommendation

One of the strengths of this study is the lack of such a study with a good sample size in the province and from

the limitations of this study can be attributed to the poor cooperation of a small number of school officials, who, of course, after convincing them, the possibility of study and intervention was provided. In order to further cooperate with the students, prizes, and receptions were provided for them after the end of each session. It is also suggested that in order to generalize the results, other studies be conducted in the country with a larger number of samples. Furthermore, to increase awareness and the importance of the need for health education during puberty for parents, an appropriate educational program should be implemented.

Conclusion

It can be concluded, according to the studies and also according to the results reported in the present study, that puberty health education can be successful in promoting self-efficacy for students. It is recommended that health-care providers attend school at regular times and teach adolescent health-related issues to students.

Acknowledgment

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Conflicts of interest

There are no conflicts of interest.

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