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# Effect of a mobile application intervention on knowledge, attitude and practice related to healthy marriage among youth in Iran

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## Abstract:

**BACKGROUND:** Mobile app education is one of the new educational models. Hence, the purpose of this study was to determine the effectiveness of mobile app intervention on knowledge, attitude, and practice of youth for a healthy marriage.

**MATERIALS AND METHODS:** This quasi-experimental study was conducted in 2019 on 88 young people who were selected by simple random sampling in premarital counseling center of Falavarjan city (Isfahan). Then, participants were randomly allocated to an intervention and a control group. Mobile application intervention was installed on the intervention group's mobiles. Data were collected by questionnaire in two times. Data were analyzed using paired *t*-test and independent *t*-test.

**RESULTS:** The mean (Standard deviation) of couples' age was 21.11 (5.06) years. The results showed that after the installation of educational consulting app in the intervention group, the mean score of knowledge ( $P = 0.001$ ), attitude ( $P = 0.001$ ), and practice ( $P = 0.001$ ) after intervention were significantly higher than before the intervention.

**CONCLUSION:** Mobile-based educational and counseling app increases couples' knowledge, attitude, and practice in premarital education. Therefore, it is recommended that this type of education (mobile app) be used to promote premarriage education classes.

## Keywords:

Attitude, knowledge, mobile app, practice, premarriage

## Introduction

The youth are the best constructive forces of every society, and the efforts and perseverance of this influential class lead to society's growth and advance.<sup>[1]</sup> Marriage is considered as one of the important indicators for evaluating the physical and mental health among the members of society.<sup>[2]</sup> Undoubtedly, the encouragement of marriage in society requires investigation and recognition of the factors involved in the phenomenon of marriage and the youth's attitudes towards marriage.<sup>[3-5]</sup> The formation of the couples' relationships can

affect the individuals' attitudes. Therefore, it seems necessary to make the youth prepared for a successful marriage.<sup>[6]</sup>

According to psychologists, to be ready for marriage, the person should have the three characteristics of social maturity, motivation, and enough information.<sup>[7]</sup> Premarital counseling provides the opportunity of promoting life skills for couples.<sup>[8]</sup> Life skills training promotes mental and social abilities and helps people to effectively face with their living conditions. Furthermore, premarital counseling can increase people's ability to handle their life, recognize their own and

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others' emotions and needs, and also promote marital satisfaction and adaptability.<sup>[7,9]</sup>

Therefore, it is so important for health-care system to provide quality premarital counseling programs; so that, the World Health Organization has emphasized the importance of the quality of these services. However, quality of services can be guaranteed when the customers' expectations from these services are met, and they are provided with services beyond their expectations.<sup>[10]</sup> The supporting effect of premarital training and counseling programs has been frequently This finding suggests the positive effects of martial training programs.<sup>[11-14]</sup>

Enrichment of premarital educational programs helps the couples to improve their relationships, get self-awareness and awareness of their spouse, explore their spouse's emotions and thoughts, promote their sympathy and sincerity, and develop effective relationships and problems solving skills.<sup>[15-17]</sup> Therefore, the quality of these programs should be also paid more attention to achieve a sustainable change in their behavior and promote their health.<sup>[18]</sup> According to studies, although these counseling programs promote the couples' knowledge and attitudes, this improvement in their attitude does not take place to an acceptable extent.<sup>[13,19]</sup>

Based on the studies reported in Iran such as the studies conducted by Hazavehei *et al.*,<sup>[20]</sup> Amirzadeh Iranagh *et al.*,<sup>[21]</sup> Moodi *et al.*,<sup>[13]</sup> it can be stated that the studied premarital counseling programs have not had a desirable quality and the programs should be evaluated. The study performed by Vakilian and Keramat<sup>[22]</sup> suggested that premarital counseling courses should be revised. In the study performed by Shahhosseini *et al.*, it has been suggested to prepare premarital counseling packs regarding the Iranian cultural and social context to help the people to recognize their spouses, clarify their expectations from each other, and promote their life skills.<sup>[7]</sup>

Education through mobile phones has significantly advanced with the development of mobile equipment. Mobile-based learning is an educational method that is a subclass or evolution of electronic learning.<sup>[23]</sup> Mobile-based learning refers to acquiring knowledge and skill by using mobile technologies at any time and in any place. The result of this process is a change in behavior.<sup>[24]</sup> Various studies, such as Tran and *et al.* have addressed the benefits of using smartphones.<sup>[25]</sup> Proper use of the mobile phones in educational programs can promote the quality of education for the youth, decrease the social costs, expand education all over the country, develop educational justice, and provide the possibility of optimal use of time.<sup>[26]</sup> In the systematic review conducted by Haghani and Rezaei, it has been suggested

to use the various internet-based education methods such as mobile learning.<sup>[27]</sup>

Therefore, this study has been performed with regard to the youth population and their need to acquire spouse selection skills and achieve a healthy marriage and benefiting from the advantages of electronic education and mobile apps besides traditional educations for achieving these goals. This study has been performed aimed to determine the effectiveness of mobile app intervention on knowledge, attitude, and practice of youth for a healthy marriage.

## Materials and Methods

This quasi-experimental study was conducted in 2019 on 88 couples (44 couples) who referred to the premarital counseling center in Felaverjan city among two groups: intervention group (22 couples) and control group (22 couples).

Simple random sampling was done. Then, subjects were randomly allocated to an intervention and a control group. Inclusion criteria included all youth referred a premarital counseling center and were willing to participate in the study, with the condition of having an Android mobile phone and internet access, and exclusion criteria included those who did not want to continue participation in the research and faced with internet disconnection or loss of mobile phones.

The research tool was a researcher-made questionnaire that was designed based on the content of the app and consisted of 4 sections: demographic information, knowledge, attitude, and practice questions. The first part included ten questions about demographic variables of individuals (age, spouse age, gender, occupation, spouse occupation, education, spouse education, occupation of husband and wife, family income status, type of marriage and place of residence) and part two included knowledge questions in the form of 22 three-choice questions (yes, no, I don't know) and 8 multiple-choice questions, and the third part contained attitude questions using 22 Likert-scale attitude questions in the range of 1-5 (strongly agree, agree, I don't have an idea, disagree, strongly disagree), the fourth part of the questionnaire consisted of 8 practice questions for measuring couples' skills. The validity of the questionnaire was confirmed by 12 experts in health education and promotion and 2 experts in clinical psychology. The reliability was confirmed after obtaining Cronbach's alpha = 0.81.

After coordinating with the Health Deputy of Isfahan, Falavarjan Health Care Network and obtaining the necessary permits and informed consent from both intervention and control groups, the questionnaire was

distributed between the couples referred to the premarital counseling center of Falavarjan before education and the questionnaire was collected after completion.

All couples in both intervention and control groups participated in routine face-to-face counseling classes, which consisted of four new topics of marital and reproductive health, family counseling and psychology, couples' mutual rights, and training family ethics and law during two consecutive days.

In the intervention group, premarital skills educational and counseling app was installed on their cellphone, and they use it during 1 month. The educational and consulting app was designed and produced in two stages. In the first step, after identifying the priorities, needs, and ideas of the production of the app, the educational content was prepared in accordance with the authoritative texts related to each topic. Finally, the content was approved by the experts and the manager of the Family and Population Office of Isfahan Health Deputy and 2 experts of health at Isfahan University of Medical Sciences. To learn premarriage skills more effectively, multimedia educational video packages were used.

In the second step, the graphic design of the Loading Page, Home Page, and the layout of the page and the creation of the icons associated with the application were done by IT experts. Software programming was done in two stages. The first step was graphical user interface and the second step was programming using Java and Android Studio. The final program consists of 5 main app.: educational text, communication with counselor, premarital skills, tests, and workshop video. The content of the software includes nine main parts, including marriage preparation, spouse selection criteria, proposal questions, tests, workshop videos, skills, introduction to premarital centers, couple's mutual rights, and marriage rules. Skills part includes nine skills of sexual restraint, decision making in selecting spouse, ethical skills during the engagement, effective communication skills, good verbal communication with spouse, empathetic with spouse, good marital relationship, expressing affection to the spouse, problem-solving skills, anger management skills, and skills to correct one's or spouse's behavior.

Before collecting data, both groups were trained by the researcher about the purpose of the study and how to answer the questionnaire. During the 1-month intervention, necessary training was provided in the channel by the researcher on how to use the app, and everyone was encouraged to use the app throughout the day. Intervention group subjects were asked to discuss their questions with the app counselor. After 1 month of intervention, Data were collected from both groups (intervention and control) and analyzed by

SPSS (20) (SPSS Inc., Chicago, IL, USA) and analytical statistics including *t*-test and paired *t*-test were used. The significance level was considered  $<0.05$ .

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## Results

The average age of couples was 23.7 (4.3), and the mean age of their spouses was 23.3 (4.8). Independent *t*-test showed that the mean age ( $P = 0.187$ ) and mean age of spouse ( $P = 0.345$ ) were not significantly different between the two groups.

The majority of participants in this study had a high school diploma (59.1% in the intervention and 54.5% in the control group) and a middle-income status in both groups. The test showed that there was no significant relation between the two groups ( $P \leq 0.05$ ). Most individuals were self-employment in both groups and their spouses were students. More than 60% of participants in both groups were located in the city and others were located in village ( $P = 0.563$ ). About the type of marriage 65.9% in the intervention group and 68.2 in the control group had no relation to each other. The selection of their spouse in both groups was by self-selection. The analytical test showed there was no significant relation about demographic information among the two groups.

As both groups participated in routine premarriage counseling classes, the level of knowledge and attitude in both groups was increased, but the mean of knowledge and attitude were significant in the intervention group. Moreover, the practice of intervention group had a significant increase.

As Table 1 shows that in the intervention group, the mean scores of knowledge ( $P \leq 0.001$ ), attitude ( $P \leq 0.001$ ), and practice ( $P \leq 0.001$ ) were significantly higher after the intervention than before the intervention. In the control group, the mean scores of knowledge and attitude were significant because of routine premarriage training, but there was no significant difference in their performance before and after the intervention. Independent *t*-test showed that the mean scores of knowledge, attitude, and performance scores in the intervention group were significantly higher than the control group.

## Discussion

The purpose of this study was to determine the effectiveness of mobile app intervention on knowledge, attitude, and practice of youth for a healthy marriage.

**Table 1: Mean (standard deviation) of knowledge, attitude, and practice before and 1 month after intervention in two groups**

Variables	Group	Mean (SD)		P*
		Before intervention	1 month after intervention	
Knowledge	Intervention	32.40 (6.45)	45.04 (4.74)	0.001
	Control	33.9 (5.39)	37.61 (4.97)	0.001
P**		0.001	0.59	
Attitude	Intervention	71.54 (5.55)	78.93 (8.26)	0.001
	Control	70.93 (4.50)	73.97 (6.10)	0.001
P**		0.001	0.57	
Practice	Intervention	6.61 (2.71)	7.90 (1.96)	0.001
	Control	6.56 (2.56)	6.65 (2.42)	0.792
P**		0.931	0.001	

\*Paired t-test, \*\*Independent t-test. Significant level  $\leq 0.05$ . SD=Standard deviation

The results of the study showed a significant difference in the mean score of knowledge, attitude, and practice of young people by using the educational mobile app. This change reflects the impact of education mobile app on increasing knowledge, attitude, and practice of young people. In this app, it was tried to raise young people’s knowledge through interesting and applicable educational topics and texts along with pictures and icons of marriage preparation, spouse selection criteria, proposal questions, introduction of premarital centers, couples’ mutual rights, and the sentences of marriage that the results have been well shown it’s effect on enhancing learning, but they were not easily accessible in routine classes.

The use of applicable icons, including the tests related to marriage, workshops video, and skills, caused a significant increase in the knowledge, attitude, and practice of young people. The results of this study consist with the results of a review study of Moodi and Sharifzadeh<sup>[7]</sup> in Iran and the study of Milliken that indicates educational media not only affect more senses of learners, but also provide variety in the learning conditions, and cause stabilization of the learning, transfer of learned lessons to long-term memory, and changing in the attitude and provides the condition for learners to learn faster with more practice and to have more satisfaction for attending the class.<sup>[23]</sup> Haghani and Rezaei also showed the role of using electronic education in particular training through mobile in increasing the level of learning and promoting knowledge and attitude.<sup>[27]</sup>

Various studies have also shown the effect of premarital education and counseling on increasing and promoting the knowledge and attitude of couples.<sup>[15,16]</sup> Moodi *et al.*’s study showed an increase in couples ‘knowledge and attitude after the training program with appropriate and productive communication, and the use of appropriate

educational aids was recommended to increase the advantages of classes for couples.<sup>[13]</sup>

In addition, there was a significant increase in the mean score of knowledge and attitude in routine teaching, reflecting the impact of the recent revision of these classes in the last year and changes in the educational methods and the use of new topics along with increasing class time in routine premarriage training that the need to increase the time of premarriage education classes was previously suggested by Farnam *et al.*<sup>[28]</sup> Several studies have previously shown that premarital training with previous content increases the level of knowledge and attitude of couples, but this increase in knowledge and attitude change is not as expected and acceptable.<sup>[13]</sup> This result is consistent with the results of other studies that recommended to revise the method of holding premarriage education classes<sup>[13,20,29,30]</sup> because at the time of classes, couples may be distracted by marginal issues of their wedding and may also not listed carefully to lessons due to their current problems.

In this study, the mean score of the couple practice level in the intervention group was significant compared to the control group. However, in the control group, this increase was not acceptable and expected, indicating the effectiveness of using new educational methods such as educational and counseling applications with the capability of showing the workshop video and using a psychologist counselor to change users’ practice. Moreover, as using application is not limited to a specific time and location, it received remarkable attention and was effective in enhancing youth practice.

In this study, the mean score of the couple practice level in the intervention group was significant compared to the control group. If, in the control group, this increase was not acceptable and expected, indicating the effectiveness of using new educational methods such as Educational and counseling applications with the capability of showing the workshop video and using a psychologist to change users’ practice are also well received because of the indefinite use of the application at a specific time and place.

### Limitations

Some of the participants want to put text relating healthy sexual relation in mobile app. that was not possible because of ethical considerations.

### Conclusion

Mobile app increases couples’ knowledge, attitude, and practice in premarital education, and using videos of workshops could help to facilitate learning and acquiring life skills and problem-solving skills. Therefore, it is

recommended that this application be used in other youth groups such as scholars and soldiers.

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### Conflicts of interest

There are no conflicts of interest.

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