

Effect of a Mobile Application intervention on Knowledge, Attitude and Practice Related to Healthy Marriage among Youth in Iran

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Research article

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Abstract

Background:

Pre-marriage counseling coupled with enriching the couple's relationships skills can lead to better relationships. New approaches and programs are being developed today to improve youth skills. Mobile app education is one of the new educational models in this field. The purpose of this study was to determine the effectiveness of mobile app intervention on knowledge, attitude and practice of youth for healthy marriage.

Methods:

This quasi-experimental study was conducted in 2019 on 88 young people (44 couples) who were selected by convenience sampling from youth referred to the premarital counseling center of Falavarjan city (Isfahan). At first, the pre-marriage skills training and counseling app was designed and produced, then this app was installed on the intervention group's cellphone. Data were collected using questionnaire based on the content of the app and its validity and reliability were confirmed. Data were analyzed using SPSS (20) and paired t-test and independent t-test were applied.

Results:

The mean (SD) of couples' age was 21.11 (5.06) years. The results showed that after 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:

The results of the study showed that using mobile-based educational and counseling app increases couples' knowledge, attitude and practice in pre-marital education. Therefore, it is recommended that this type of education (mobile app) be used to promote pre-marriage education classes.

Introduction

The youth are the best constructive forces of every society, and the efforts and perseverance of this influential class leads to the society's growth and advance (1). Marriage is considered as one of the important indicators for evaluating the physical and mental health among the members of a society (2). Undoubtedly, encouragement of marriage in a society requires investigation and recognition of the factors involved in the phenomenon of marriage and the youth's attitudes towards marriage (3–5). The formation of the couples' relationships can affect the individuals' attitudes in a positive or negative manner. Therefore, it seems necessary to make the youth aware and prepared for a successful marriage; because successful marital life requires special capabilities and skills in addition to other facilities (6).

According to psychologists, in order to be ready for marriage, the person should have the three characteristics of social maturity, motivation, and enough information (7). Premarital counseling provides the opportunity of promoting life skills, knowledge of spouse selection criteria, and acceptance of the role of gender in marriage, and so, it can be considered as one of the important components of marriage strength (7). Premarital counseling services provide the men and women with the awareness and knowledge of communication with themselves and their future spouse, the importance and goals of marriage and marital life (8). Life skill training promotes mental and social abilities and helps people to effectively face with their living conditions, adapt to other people, the society, culture, and the environment, and meet their mental health. Furthermore, the mentioned process can increase the people's ability to handle their life, recognize their own and others' emotions and needs, and also promote marital satisfaction and adaptability (7, 9).

Therefore, it is so important for every health care system to provide quality premarital training and counseling programs; so that, World Health Organization (WHO) 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 (10). The supporting effect of premarital training and counseling programs has been frequently discussed (11, 12). The studies performed by Yazdanpanah (11), Moudi and Sharifzadeh (13), and Shahhosseini (7) in Iran have addressed the effect of premarital counseling programs on marriage strength. Also, the studies conducted by Stanley in America (14), Sullivan and Bradbury (15), and Schumm (16) suggested that people participating in premarital training programs reported a significantly higher level of satisfaction and commitment in marriage compared with the control group. This finding suggests the positive effectiveness of marital training programs.

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 (17). Therefore, in addition to provide the couples with premarital educational programs, the quality of these programs should be also paid more attention in order to achieve a sustainable change in their behavior and promote their health (18). 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 (13, 19).

Based on the studies reported in Iran such as the studies conducted by Hazavehei Hazaveei et al (20), Amirzadeh et al (21), Moudi and SHarifzadeh (13), 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 Keramet (22) 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 in order to help the people to recognize their spouses, clarify their expectations from each other, and promote their life skills (7). Barnes and Milliken have suggested using computer and new technologies as a tool for improving learning and teaching quality.

Their findings showed that educational media are effective in promoting the people's knowledge, attitudes, and practice. Educational media involve more senses of learners, create a new learning condition, stabilize the learned contents and preserve them for a longer time. In addition, they provide the learners with the possibility of learning with a higher speed and better performance (23).

Nowadays, one of the modern education models is education through mobile phones. This educational model 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. 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 (24). Various studies such as Tran review study including 10 papers have addressed the benefits of using smart phones (25). Proper use of mobile phone 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 (26).

In the systematic review conducted by Haghani and Rezaei (2017), it has been suggested to use the various internet-based education methods such as mobile learning (27). In 2018, Parsa performed a study on designing, implementation, and evaluation of self-care software for pregnant women; their findings suggested that an educational mobile app can be effective in promoting the women's knowledge of preeclampsia (28). Previous studies including the studies performed by Papzan(29), Mcconatha(30), and Wang(31) have emphasized the positive effect of using modern education methods in health promotion programs (29).

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 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).

Sampling was done by convenience and simple random sampling. 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 10 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 to 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 and its reliability was obtained 0.75 by Cronbach's alpha test.

After coordinating with 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, pre-marital skills educational and counseling app was installed on their cellphone and they were taught how to use it during one 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. In order to learn pre-marriage skills more effectively, multimedia educational videos packages (acquaintance-love-marriage) prepared by Isfahan General Welfare Office were used after obtaining the necessary permission.

In the second step, after producing the educational content, 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. The design and production phase of the application were conducted by an IT expert introduced by the university's research deputy according to the opinions of consultants and professors of health education and promotion. Software programming was done in two stages. The first step was graphical user interface (GUI) and the second step was programming using Java and android Studio. The final program consists of 5 main application: educational text, communication with counselor, premarital skills, tests, and workshop video. The content of the software includes 9 main parts including marriage preparation, spouse selection criteria, proposal questions, tests, workshop videos, skills, introduction to premarital centers, couples mutual rights, and marriage rules. Skills part includes 9 skills of sexual

restraint, decision making in selecting spouse, ethical skills during 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. The benefits of this software is not only educational content and videos, but also is the contact counselor icons that by using which, anyone can ask any question or problem online free of charge and receive answer of their questions through email or SMS.

Before collecting data, the youth of both groups were trained by the researcher in terms of instruction about the purpose of the study and how to answer to the questionnaire. All participants in the intervention group became member of a channel (virtual networks) through national messenger entitled Premarital Skills. During the one 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 and to answer the questionnaire questions in the app and rate the app through 5 stars rating system. After one month of intervention, they were invited to the premarital center to complete the post-test questionnaire. Finally, data were collected from both groups (intervention and control). Data were entered into SPSS(20). Descriptive statistics indicators (frequency, percentage, mean and standard deviation) and analytical statistics including t-test and paired t-test were used. Significance level was considered less than 0.05.

Findings

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 intervention and 54.5% in control group) and a middle-income status in both groups. The test showed that there was no significant relation between two groups. Most of individuals were self-employment in both groups and their spouses were students. More than 60% of participants in both groups were located in city and others were located in village ($P = 0.563$). About type of marriage 65.9% in intervention group and 68.2 in control group had no relation to each other. Selection of their spouse in both groups was by self-selection. The analytical test showed there were no significant relation about demographic information among two groups. [Table 1]

As both groups participated in routine pre-marriage 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.

The mean score of couples' knowledge in the intervention group before intervention was 32.40 ± 6.45 and after that it was 45.04 ± 4.74 and in the control group before intervention was 33.09 ± 5.39 and after the intervention was 37.61 ± 4.97 ($p < 0.0001$). The mean score of couple's attitude in the intervention group before intervention was 71.54 ± 5.55 and after that it was 78.93 ± 8.26 and in the control group before

intervention was 70.93 ± 4.50 and after that it was 73.79 ± 6.10 ($p < 0.0001$). The mean score of couple practice in the intervention group was 6.61 ± 2.71 before intervention and 7.90 ± 1.96 after intervention and in the control group was 6.56 ± 2.56 before intervention and 6.65 ± 2.42 after intervention ($p < 0/0001$).[Table 2]

Table 1
Comparison of demographic factors among two Groups

Variables		Intervention N(%)	Control N(%)	p-value
Level of Education	Elementary	1 (2.3)	5 (11.4)	0.543
	High school	6 (13.6)	6(13.6)	
	Diploma	26 (59.1)	24(54.5)	
	University	11 (25)	9(20.5)	
Education level of spouse	Elementary	1 (2.3)	3 (6.8)	0.745
	High school	7 (15.9)	11(25)	
	Diploma	25 (56.8)	23(23.3)	
	University	11 (25)	7(15.9)	
Occupation of Husband	Employee	8 (18.2)	0(0)	0.671
	Worker	2(4)	7(15.9)	
	Self-employment	33 (75)	32(72.7)	
	Student	0(0)	0(0)	
	Unemployed	0(0)	1(2.3)	
	Others	1(2.3)	4(9.1)	
Occupation of Wife	Employee	3(6.8)	0(0)	0.234
	Worker	0(0)	1(2.3)	
	Self-employment	6(13.6)	9(20.5)	
	Housewife	11(25)	19(43.2)	
	Student	19(43.2)	14(31.8)	
	Jobless	5(14)	0(0)	
	Others	0(0)	1(2.3)	
Family income	Very good	2(4.5)	0(0)	0.682
	Good	19(43.2)	10(22.7)	
	Medium	5(22)	32(72.7)	
	Poor	1(2.3)	1(2.3)	
	Very weak	0(0)	2.3(1)	

Table 2

Mean (SD) of knowledge, attitude and practice before and one month after intervention in two groups

Variables	Group	Before intervention Mean (SD)	1 month after intervention Mean (SD)	P-value*
Knowledge	Intervention	32.40 (6.45)	45.04 (4.74)	0.001
	Control	33.9(5.39)	37.61(4.97)	
P-value**		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)	
P-value**		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)	
P-value**		0.931	0.001	

As Table 2 showed that in the intervention group, the mean scores of knowledge ($P = 0.00$), attitude ($P = 0.01$) and practice ($P = 0.010$) were significantly higher after the intervention than before the intervention. In the control group, the mean scores of knowledge and attitude was significant because of routine pre-marriage 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.

Finally, 34% of young people have asked their questions from counselors and received consult. Then, evaluation was performed through ratings it's content by users, and over 80% of users have expressed their satisfaction with giving a 5-star rating to the app.

Discussion

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

The results of the study showed a significant difference in the mean score of knowledge, attitude and practice of young people by using mobile app based education in pre-marriage education classes. This change reflects the impact of educational intervention using educational and counseling app on increasing knowledge, attitude and practice of young people about marriage. 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 its 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 are consistent with the results of review study of Moudi and SHarifzadeh (7) in Iran and the study of Milliken (2002) 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 condition for learners to learn faster with more practice and to have more satisfaction for attending the class (23). Haghani and Rezaei (27) also showed the role of using electronic education in particular training through mobile in increasing level of learning and promoting knowledge and attitude.

Various studies have also shown the effect of pre-marital education and counseling on increasing and promoting the knowledge and attitude of couples (15, 16, 33–38). The study conducted by Massoudi et al. suggests that education using new technologies such as mobile phones can be effective in parallel with face-to-face education (39). Moody et al.'s study showed an increase in couples' knowledge and attitude after the training program with good and productive communication, and the use of appropriate educational aids was recommended to increase advantages of classes for couples (40). However, the results of this study are consistent with the results of the study conducted by Vaona (41) that showed it is unclear whether e-learning improves or reduces the skills of health professionals. He stated "There is little difference between e-learning and traditional learning in terms of the disease outcomes and behavior, skills and knowledge of healthcare professionals." In addition, even if we claim that e-learning is more successful than traditional learning in specialized medical meetings, this claim may be misleading.

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 method of holding the classes and the use of new topics along with increasing class time in routine pre-marriage training that the need to increase the time of pre-marriage education classes was previously suggested by Farnam et al. (42). Several studies have previously shown that pre-marital training with previous contents and attitudes increases the level of knowledge and attitude of couples, but this increase in knowledge and attitude change is not as expected and acceptable. (13). This result is consistent with the results of other studies so that these studies also did not consider the increase in knowledge and attitude significant and recommended to revise the method of holding pre-marriage education classes (13, 20, 33, 37, 38) because at the time of classes, couples may be distracted by marginal issues of their wedding and may also not listen carefully to lessons due to their current problems.

In this study, the mean score of 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 advisor 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 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's advisor to change users' practice are also well received because of the limited use of the application at a specific time and place. Also effective in enhancing youth practice.

Increasing the level of practice and behavioral skills in pre-marriage period helps individuals to transfer their message clearly and effectively. In addition, couples who learn how to resolve their conflicts effectively and efficiently, are able to continue their lives together better and to resolve conflicts in their life appropriately over couples who don't have such skills (43, 44).

Limitations:

Some of participants want to put text relating healthy sexual relation that was not possible because of limitations and the need for ethical considerations. Of course, this would be useful for commercializing the app with the approval of the Ethics Committee within the framework of Islamic Republic of Iran laws. Considering the effect of the mobile app on the increase of the knowledge, attitude and practice of youth in training classes, it is suggested to use mobile apps along with routine training to facilitate learning in the basic and important fields in other societies as same as universities.

Conclusion

The results of the study showed that using mobile educational and counseling app increases couples' knowledge, attitude and practice in pre-marital education, and using videos of workshops and help from counselors could help to facilitate learning and acquiring life skills and problem-solving skills. Therefore, due to the role of e-learning software and the importance of using mobile software in facilitating youth learning, it seems that paying attention of educational authorities and managers to develop such software in order to raise the level of knowledge, attitude and practice of youth is necessary.

Declarations

Ethics approval and consent to participate: All participants provided informed consent.

Also, this study was reviewed and approved by the Isfahan University of Medical Sciences's

Institutional Review Board.

Consent for publication: 'Not applicable

Availability of data and materials: Data used for this manuscript will be available upon reasonable request (i.e., no personal identifying information can be shared) by the corresponding author of this manuscript.

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