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Effect of education on knowledge of fertility counseling and attitudes toward fertility control

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Abstract:

BACKGROUND: The development of any society depends on proper planning in various fields such as population and birth control. Fertility control is designed to create a level of population growth appropriate to the resources available and to ensure a good life. Receiving information and education is one of the basic strategies to change the attitude toward fertility and awareness in most people in society. Therefore, this study was conducted to determine the effect of education on knowledge of fertility counseling and attitudes toward fertility control in health workers.

MATERIALS AND METHODS: The present study was a randomized clinical trial with a control group that was conducted in the presence of 107 health workers of health centers and community health centers working in Mashhad in 2017. The research units were randomly divided into three groups (webinar training, group discussion training, and control). Research tools were researcher-made questionnaires on attitudes toward fertility and measuring healthy reproductive awareness that all study participants completed at the beginning of the study and 2 weeks after the intervention. Data analysis was performed by the Chi-square, one-way analysis of variance, and independent *t*-test using the SPSS software version 16.

RESULTS: The results of this study showed that at the beginning of the study, all three groups were homogeneous in terms of quantitative and qualitative demographic variables including age, education, work experience, type of employment, and number of family members. The results of Kruskal–Wallis test showed that before the intervention, the three groups did not have a statistically significant difference in terms of mean scores of awareness about fertility counseling ($P = 0.77$) and attitude toward fertility control ($P = 0.523$), but this relationship was significant after the interventions. Furthermore, the results of Mann–Whitney intragroup test showed that the scores before and after the intervention were significant in both educational groups ($P = 0.001$).

CONCLUSION: Considering the importance of healthy fertility counseling and the important place of education in promoting awareness and attitude toward healthy fertility, it is recommended to use active educational methods to promote the awareness and attitude of health workers to provide healthy fertility services to couples.

Keywords:

Attitude to fertility control, awareness, education, fertility counseling, health workers

Introduction

Fertility decline is a global issue in some countries, including Japan, France, Germany, Korea, etc., as well as Iran is very acute and complicated.^[1,2] If developing countries such as Iran do not control

their declining fertility and population growth, they will face the problem of population aging and dangerous population decline in the coming years, which will cost the country's economy dearly.^[3] The development of any society depends on proper planning in various fields, including population and birth control. Fertility

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control is designed to create a level of population growth that is appropriate to the resources available and ensures a good life.^[4] Human development is one of the important pillars of sustainable development of societies, it has a special place in the discussion of reproductive health.^[5] Receiving information and education, which is one of the main strategies to change attitudes toward fertility in most people in society, has had a clear effect on couples' fertility behavior in recent years. In the past, the role of health-care personnel in the reproductive discourse has included providing training and counseling to clients in terms of acceptance, selection, and use of contraceptive methods. At present, the role of many employees in disseminating attitudes and providing counseling and family planning services has not changed significantly, and some of them do not have the necessary attitude to align with the new population policies of the country. As a result, it has led to conflicting messages about fertility in society. These findings indicate the need for training and changing the attitude of employees in the field of counseling to promote fertility in society.^[6] In recent years, along with changes in population policies in the country, measures have been taken to increase fertility. However, staff have not received the necessary training to provide family planning counseling with the approach of increasing fertility. Reproductive health and childbearing health are mentioned in the draft policies of the office of Population-Family and School Health to improve the overall fertility rate. This draft emphasizes on educating personnel about providing reproductive health rights, improving the quality of counseling services, reviewing the indicators of the reproductive health program, and improving the existing educational content.^[7] Many fertility problems can be solved through careful counseling, and the quality of counseling can be significantly improved by incorporating the principles of information, education, and communication into counseling. In fact, counseling is a process and the implementation of a good counseling depends on how to establish the right relationship between health personnel and clients and provide the correct information to improve the knowledge of clients and their encouragement.^[8] Due to the importance of counseling in regulating fertility, the counselor has a serious responsibility and must receive the necessary training and skills before doing so. The counselor should be someone who is interested in communicating with people and working with them and is fully aware of and believes in the importance of fertility regulation and its benefits.^[9]

Due to the new policy of the country in the field of fertility promotion, health workers are now expected to provide a very different performance in terms of fertility counseling than the usual performance over the past two decades. However, without gaining

knowledge, improving attitudes and improving the skills of employees, it is not possible to provide appropriate and effective advice by them.^[10] Improving attitudes and improving the scientific level and skills of health workers are the basic pillars for improving the quality and quantity of health services. Attitude improvement leads to improved performance and by increasing the level of knowledge and skills of employees, they will monitor their own activities.^[11] Considering that health workers have a major role in promoting the health of the family and the community, they are at the forefront of the population and implement fertility regulation programs. Changing their knowledge, attitude, and practice through the use of active and effective methods of education is of particular importance.^[6]

Applying active and modern training methods will help employees to play their role more effectively. One of the components of community health is the educational ability of the staff of health centers in that community, as a result, changing and improving the structures, systems, processes and classical methods of education can be helpful in this regard.^[12] Meanwhile, midwives play a very important role in providing health services. According to the regulations of the Ministry of Health, midwives can provide reproductive health services (from birth to old age) to women, family, and society and promote the health of mother, baby, and ultimately society.^[12,13] Among educational methods, group discussion is an effective and common way to change the attitude of health workers. In this method, all participants, while discussing, defend their thoughts and attitudes by stating reasons based on facts, concepts, and scientific principles. On the other hand, with the advancement of science and technology, new technologies have quickly replaced the old technologies and provided powerful tools for users.^[13] The use of these technologies in the field of health with the aim of achieving three outcomes including learning the right information, changing health-related attitudes, and creating new behaviors consistent with health is considered.^[14] Web-based education is one of the new educational methods that is able to increase the critical thinking and decision-making ability of learners and improve their psycho-motor skills and performance.^[15] Web-based learning allows learners to focus on their learning goals and content and to learn at their own pace.^[16] According to Friedman *et al.* (1970), quoted by Karimi (2006), it is a durable military attitude that includes a cognitive element, an emotional element, and a desire for action. Part of the importance of attitude stems from the fact that attitudes determine behaviors, and this implicitly implies that by changing people's attitudes, their behavior, and performance can be changed. Reasons for the importance of attitude can be mentioned as follows: it affects social thoughts, affects the way of thinking and processing information, acts

as a mental plan, organizes, and maintains cognitive frameworks of information about concepts and situations and ultimately affects the process of behavior.^[17]

The staff of health centers are able to facilitate the achievement of reproductive health goals in the community by providing proper advice and attracting the participation of clients. Considering their role model and guidance in the field of fertility, it is necessary for health workers to be justified in this regard and their attitude and practice to be corrected. Given the vacuum of a program that empowers employees to play their expected role in the current state of society and promote the country's population policies and considering the need to use effective and efficient training methods that enable the widespread training of skills needed by employees as soon as possible, the aim of this study was to determine the effect of education on knowledge of fertility counseling and attitudes toward fertility control in health workers.

Materials and Methods

Study design and setting

The present study is a randomized controlled trial with a three-group design and pretest-posttest, which has been approved by the Ethics Code No. (Ir. Mums. Rec. 1393.1438) in the Vice Chancellor for Research, Mashhad University of Medical Sciences in 2018. The aim of this study was to investigate the effect of education on knowledge of fertility counseling and attitudes toward fertility control in health workers.

Study participants and sampling

This study was performed on 108 midwives and health-care workers working in health centers and community health centers and health centers. Sampling was performed in health centers subset of health centers 2-3 and 5 (random selection method) in Mashhad in 2015. Sample size using the following formula:

$$n = \frac{(s_1^2 + s_2^2) \left(Z_{1-\alpha/2} + Z_{1-\beta} \right)^2}{(\bar{x}_1 - \bar{x}_2)^2}$$

Moreover, with 95% confidence interval (1.96) and 80% power factor (0.84), 108 people were calculated considering the probability of 10% drop in the number of samples. The research units were randomly assigned to three groups: webinar, group discussion, and control (36 people in each group).

The inclusion criteria were as follows: having a degree in midwifery (associate, bachelor, or master) or a degree in family health or public health (bachelor or master),

employed in maternity, child and family planning units, counseling or health care plan (polyvalan) of selected health centers, have at least 6 months of experience in health-care centers, written consent to participate in the research, lack of experience attending fertility counseling classes and workshops for at least the last 6 months, no history of major stressful event (serious illness of the participant or spouse and child, death of a first-degree relative, accident, severe family dispute, divorce, financial bankruptcy) 6 months before the intervention, ability to use computers and the Internet, access to internet, and computer or smartphone. The exclusion criteria were as follows: Occurrence of major stressful events during the study. It should be noted that the criteria for the decline of the study were: unwillingness to continue participating in research, not participating in one of the training sessions.

Data collection tool and technique

The instruments used in this study included a fertility attitude questionnaire and a knowledge questionnaire about fertility counseling training. A 47-item fertility attitude questionnaire was prepared based on a qualitative study by Khadivzadeh *et al.* (2013). Its items were scored on a five-point Likert scale (strongly disagree = 1, disagree = 2, have no opinion = 3, agree = 4, and strongly agree = 5). Validity was confirmed by content validity method. Its reliability was confirmed by internal consistency method by Cronbach's alpha method with $\alpha = 0.65$. The Fertility Counseling Awareness Questionnaire had eight two-choice questions. This questionnaire was prepared based on the Listening Skills Assessment Questionnaire taken from the book Family Planning Counseling, authored by the Ministry of Health and Medical Education and the United Nations Population Fund. The correct answer was given a score of 2 and the incorrect answer was given a score of 1. Awareness was then divided into three levels: weak (8 and <8), moderate (8.1-12), and good (12.1-16). Validity was confirmed by content validity method. Its reliability was confirmed by internal consistency method by Cronbach's alpha method with $\alpha = 0.64$. The whole questionnaire was completed once before the start of the research and once 2 weeks after the end of the research by the participants of all three groups (webinar, group discussion, and control). In order to conduct the research, after obtaining the necessary permits, the researcher referred to the research environments and after presenting the goals and working methods to the study target group, invited them to participate in the research. Then, if the inclusion criteria were met, individuals completed the written consent to participate in the study and were randomly divided into three groups. The two groups of webinars and group discussions that were intervention groups separately participated in four training sessions

(first session = 90 min, second session = 65 min, third session = 50 min, and fourth session = 80 min). The educational content was prepared according to the protocol of the Ministry of Health and Medical Education and books and scientific resources.^[8,18,19] It should be noted that the educational content of both groups was the same and only the teaching method was different from each other. Finally, data analysis was performed using the descriptive and analytical statistical tests and statistical software IBM SPSS package version 16 (IBM, SPSS Inc., Chicago, Illinois, USA).

Ethical consideration

It should be noted that this study was performed after approval in the research department of Mashhad University of Medical Sciences and receiving the code of ethics (Ir. Mums. Rec. 1393.1438). At the beginning, the goals and working methods were explained to all participants. Then, written consent was obtained from all participants. Study participants were assured that they could leave the study at any stage of the study and that the final results of the study would be made available to them if desired. At the end of the study, educational booklets were given to the control group.

Results

In this study, data analysis was performed on 107 health workers (36 in the control group, 36 in the webinar group, and 35 in the group discussion group). At the beginning of the study, all three groups were homogeneous in terms of quantitative and qualitative demographic variables such as: age, education, work experience, type of employment, and number of family members.

The results of the one-way analysis of variance showed that the mean scores of knowledge in the three groups at the beginning of the study there was no statistically significant difference ($P = 0.77$), but after the intervention, there was a statistically significant difference between the three groups ($P = 0.001$) [Table 1].

The results of Kruskal–Wallis test showed that before the interventions, the three groups did not have a statistically significant difference in terms of the mean rank of knowledge scores compared to fertility counseling ($P = 0.59$) [Table 2].

The results of Kruskal–Wallis test showed that after performing the interventions, the three groups had a statistically significant difference in terms of the mean rank of knowledge scores compared to fertility counseling ($P = 0.001$) [Table 3].

The mean scores of attitude toward fertility control in the three groups with the one-way analysis of variance showed that the three groups did not differ significantly in mean scores of attitude toward fertility control at the beginning of the study. However, at the end of the study and after the interventions, there was a statistically significant difference between the three groups ($P = 0.03$) [Table 4]. Tukey test showed that this difference between group discussion and control groups ($P = 0.02$) was significant.

Discussion

Healthy fertility counseling means stating the facts about the fertility of the community that can be done by the health personnel of health centers individually, in groups or through mass media with important goals such as ensuring family health by achieving the goals of empowering families.^[20-26] Proper provision of healthy fertility counseling in health centers depends on the knowledge, attitude, and scientific skills of health personnel who need to receive practical and correct training. Therefore, the present study investigated the effect of education on knowledge of fertility counseling and attitudes toward fertility control in health workers. The results of the present study regarding the knowledge scores regarding fertility counseling in the intervention and control groups before the interventions showed no statistically significant difference in the mean knowledge score between the three groups. However after the interventions, the three groups had a statistically significant difference in the mean rank of knowledge scores compared to reproductive counseling. In this regard, various studies show the effect of education on promoting fertility awareness. In this regard, Parsa *et al.* by examining the effect of group counseling on improving the reproductive awareness of adolescent girls showed that group educational intervention is significantly effective in promoting awareness of different dimensions of fertility.^[23] Also, regarding the levels of awareness in the groups, the results of the present study showed that

Table 1: Mean and standard deviation of knowledge scores regarding fertility counseling training of research units in three groups receiving training by group discussion, webinar, and control methods

Variables	±SD			P
	Group discussion	Webinar	Control	
Awareness scores before the intervention	12.7±1.8	13.0±1.1	12.8±0.9	0.77
Awareness scores after the intervention	15.2±1.0	15.0±2.1	13.2±0.75	0.001
Mann-Whitney test results	0.001	0.001	0.452	

SD=Standard deviation

there is no statistically significant difference between the three groups in terms of the level of awareness before the interventions. But after the interventions, there was a statistically significant difference between the three groups in terms of the mean rank of awareness scores compared to reproductive counseling. There are studies in line with the findings of the present study, including the study of RahimiKian *et al.*, Modabber, Shokri, and Morgan.^[24-26]

The study was conducted by Rahimikian *et al.* entitled The effect of training emergency contraceptive methods on the knowledge and attitude of health workers working in health centers. The results showed that the highest percentage of research units had poor knowledge about emergency contraceptive methods before the intervention, which reached a good level after the intervention.^[24] Modabber *et al.* Conducted a study entitled “The effect of group discussion training on raising awareness of women using intermittent contraception” concluded that after training, the proportion of women aware of contraceptive methods increased.^[27] Shokri, By examining the effect of web-based education on students “awareness in the field of reproductive health, observed that web-based education as an effective method leads to raising students” awareness in the field of reproductive

health.^[28] He *et al.* Emphasized that in order to improve the level of knowledge and awareness of couples about reproductive health and the correct use of contraceptive methods at the right scientific time, it is necessary to improve the knowledge and awareness of health personnel and assess their knowledge about proper fertility counseling. They also stated that we should teach proper fertility counseling using educational methods.^[29] In his research, Morgan examined the knowledge gap associated with contraceptive methods in students. By providing educational interventions, Morgan showed that students do not have sufficient level of knowledge and awareness in the use of contraceptive methods, and this level is improved by performing educational interventions. In their study, Morgan *et al.* Recommended that various educational methods be tried to improve public awareness of contraceptive methods.^[30]

Regarding the attitude toward fertility, the results showed that the mean attitudes about fertility control in the three groups at the beginning of the study was not significantly different but at the end of the study and after the interventions there was a statistically significant difference between the three groups. The result of the present study is consistent with the results of research by Ramazani *et al.*, Modabber *et al.*, Alami *et al.*, Shokri *et al.*, He *et al.*^[19,27-29,31,32] In the study of Ramazani *et al.* Entitled “The effect of premarital education and counseling program on the knowledge and attitude of couples towards reproductive health” a significant increase was observed in the mean score of couples’ attitudes about reproductive health after the intervention. Attitudes about reproductive health increased from 10.25 ± 1.75 to 11.12 ± 1.71 .^[31] In the study of Alami *et al.*, The results showed the effect of education on promoting couples’ attitudes regarding childbearing.^[32] The results of the study of Modabber *et al.* Regarding the effect of group training on promoting the attitude of women using intermittent contraception showed that group training improves the attitude of women.^[27] The study of Shokri. Entitled the effect of web-based education on students “awareness in the field of reproductive health, showed that web-based education promotes students” attitudes in the field of reproductive health.^[28] The study by He *et al.* Entitled the effect of using new educational methods in comparison with traditional methods and mere lectures, showed that the fertility attitude and

Table 2: Distribution of level of frequency sometimes compared to fertility counseling of research units in three groups receiving training by group discussion, webinar, and control methods at the beginning of the study

Variables	n (%)	n (%)	n (%)	P
Poor (8 and <8)	1 (2.9)	-	-	0.59
Medium (between 8.1 and 12)	11 (31.4)	10 (27.8)	14 (38.9)	
Good (from 12.1 to 16)	22 (62.9)	26 (74.2)	22 (61.9)	
Total (16)	34 (97.1)	36 (100)	36 (100)	

Table 3: Frequency distribution of knowledge about fertility counseling of research units in three groups receiving training through group discussion, webinar, and control at the end of the study

Variables	n (%)	n (%)	n (%)	P
Poor (8 and <8)	-	-	-	0.001
Medium (between 8.1 and 12)	7 (20)	4 (11.1)	16 (44.4)	
Good (from 12.1 to 16)	28 (80)	32 (88.9)	20 (55.6)	
Total (16)	35 (97.1)	36 (100)	36 (100)	

Table 4: Mean and standard deviation of attitude scores regarding fertility control of research units in three groups receiving training by group discussion, webinar, and control methods

Variables	±SD			P
	Group discussion	Webinar	Control	
Attitude scores before the intervention	10.64±1.3	9.31±2.3	10.32±1.2	0.523
Attitude scores after the intervention	14.8±2.1	15.4±1.4	15.9±1.4	0.001
Mann-Whitney test results	0.001	0.001	0.001	

SD=Standard deviation

the use of contraceptive methods in new educational methods are improved.^[29] The reason for the increase in attitude in these studies can be considered in the use of different educational methods and establishing more and appropriate communication and interaction with people and expressing new concepts in the framework of educational intervention. Using a logical message transmission system in the curriculum can be effective in changing behavior and attitude.^[29] Also, the results of Rahmati *et al.*'s study showed that counseling can increase the attitude and practice of health workers in providing counseling with a fertility promotion approach and raising the level of awareness and attitude toward fertility and fertility counseling skills of health workers.^[33,34]

There are some studies that are inconsistent with the findings of the present study, including the study of Moshki *et al.*, Lanken *et al.*^[35,36] In the study of Moshki *et al.* entitled "Comparison of the effectiveness of nutrition education through two methods of group discussion and multimedia package on the learning areas of pregnant women," attitude scores after the intervention did not show a significant difference.^[35] Perhaps the reason for this difference with the present study is due to the nature of the issue because the attitude to nutrition is an individual attitude and is related to the individual's economy. But in this study, the attitude towards fertility is a social attitude, and the practice of the attitude toward fertility may occur every few years. Lanken *et al.* Conducted a study in the United States entitled "The effect of web-based education and small group discussion on attitudes toward patients with substance abuse disorders and trainees' communication skills with them" in the United States. The results showed that the residents of the control group had a more positive attitude about the effectiveness of treatment and self-efficacy than the residents of the intervention group.^[36] Probably the reason for the difference with the present study is the knowledge of the intervention group about the ineffectiveness of treatment and the high rate of treatment failure in patients with substance abuse disorders.

Limitation and recommendation

It should be noted that the widespread use of mass media by participants in the study could distort the results of the study. For this purpose, this case was one of the limitations of the present study. It is recommended that future studies be conducted with respect to this limitation and that future studies be reviewed using other teaching aids.

Conclusion

The results of the present study showed that the level of knowledge about healthy fertility counseling and

attitude towards healthy fertility control in health personnel after receiving training through webinars and group training increased significantly. Therefore, considering the importance of healthy reproductive counseling and the important position of education, it is recommended to use active educational methods to raise the awareness and attitude of health workers in order to provide healthy reproductive services to couples.

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Conflicts of interest

There are no conflicts of interest.

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