

# The effect of training in pregnant women on beliefs and intention to do FGM

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## ABSTRACT

This study aimed to evaluate the effect of group training on the beliefs and intention to do female genital mutilation (FGM) in pregnant women referring to community health services centers in Qeshm city. This quasi-experimental study was conducted on 64 pregnant women. The test group received four 2-hour training sessions with a one-week interval. A three-section questionnaire on FGM, including demographic questionnaire, beliefs about FGM, and evaluation of intention to do FGM was completed by the researcher once before the random division of the subjects and once after the completion of the sessions.

There was no statistically significant difference between the two groups in terms of beliefs and intention to do FGM based on independent t-test and Fisher's exact test. In the intra-group comparison, based on the Paired T-test, the difference in beliefs in the test group was significantly different than that in the control group immediately and one month after the intervention, but there was no difference between immediately and one month after the intervention. Based on Fisher's exact test, the intention to do FGM, immediately and one month after the intervention in the test group was statistically significant, but there was not a statistically significant difference between immediately and one month after the intervention ( $P=1.000$ ). The results of this study showed the positive effect of group training on pregnant women in beliefs and intention to do FGM.

**Keywords:** Belief, Female genital mutilation, Pregnant, Women

## Introduction

FGM refers to any partial or whole removal of external genital parts [1]. According to the WHO it is divided into four types. [2]. It depends on the culture and beliefs of the community. Each community has its specific reasons for continuing the FGM, preserving the virginity of the girl until the wedding night, and guaranteeing her loyalty to her spouse [3]. In some communities, the reason for FGM is increasing the likelihood of survival of their child. The age of FGM has been seen in girls from two weeks after the birth until her marriage. Traditional midwives most often perform this method in an unsanitary way without anesthesia [4]. Based on the latest UNICEF report in

2016, at least 200 million women and girls in the 30 countries were victims of genital mutilation worldwide. However, with the development of countries and the empowerment of women, the rate of genital mutilation is decreasing in all countries [5, 6]. Based on a WHO report, women of some other African countries (Sudan, Nigeria, Ivory Coast, Uganda, Mali, Benin, Burkina Faso, Egypt, Ethiopia, Eritrea, Somalia, and Djibouti) and the Persian Gulf, Indonesia, Malaysia and some ethnic minorities in Yemen, Oman, Iran, Iraq and among immigrant communities in Europe, Canada, United States, Australia, and New Zealand seen genital mutilation [7].

Bokaie *et al.* (2020) conducted a study about FGM in Southern Iran [8]. Waigwa *et al.* (2018) conducted a review to evaluate the effect of health education as an intervention in preventing FGM. [9]. Sakeah *et al.* (2018) conducted a cross-sectional study on the prevalence and factors associated with FGM in women of reproductive age. In this study, three-quarters of participants believed that health education could be effective in preventing FGM [10, 11]. As previous studies have shown, the most important factor affecting the reduction of FGM is the women's self-esteem [12] and the most important factor in men's support of leaving FGM is their level of education [13].

## Access this article online

Website: [www.japer.in](http://www.japer.in)

E-ISSN: 2249-3379

**How to cite this article:** Mojahed S, Shekari M, Bokaie M, Dehghani A. The effect of training in pregnant women on beliefs and intention to do FGM. J Adv Pharm Educ Res. 2021;11(4):136-42. <https://doi.org/10.51847/WM4E80chDe>

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Therefore, it is necessary to identify the target group in our country and provide clear information about the outcomes of FGM to raise public awareness and correct the misconceptions using a collaborative approach [14]. Since the influential factor of culture in FGM cannot be neglected and as targeted educational interventions are effective in correcting wrong beliefs. Due to the high prevalence of FGM in Qeshm [8], this study was conducted to investigate the effect of education on beliefs and intention to perform circumcision in pregnant women referred to comprehensive health centers in Qeshm.

## Materials and Methods

This research was a pre-post quasi-experimental study with interventional and control group. It was conducted in three steps: 1) pre-test (before training) 2) post-test (immediately after training) 3) follow-up (one month after training). The study population included pregnant women referring to comprehensive health centers in Qeshm. These centers include Delbari (10 people), Holvar-e Sofla [15], Olya [16], and Qebleh health centers (6 people). Informed consent was taken from samples and 64 subjects were selected through purposeful sampling in two months. Then, they were divided into two groups of control (n=32) and a interventional (n=32) through the random numbers table. The interventional group participated in 4 2-hour training sessions. The control group did not receive any interventions. The inclusion criteria of the study included Iranian citizenship, willingness to participate in the study, the gestational age between 20 and 30 weeks, and the spouse's consent, and being native of Qeshm city. The exclusion criteria of the study included pregnancy complications and the use of psychoactive substances and drug abuse. The

questionnaire used in this study was a three-section questionnaire. The first section of the questionnaire included demographic characteristics, the second section was related to the beliefs about FGM, and the third section was related to the evaluation of the intention to do FGM. To perform the research, the researcher through the interview completed a questionnaire. The second section of the questionnaire was about beliefs about FGM (24 questions). The questions were answered based on a five-point Likert scale (strongly agree, agree, no idea, disagree, strongly disagree), and the third section evaluated the intention to do FGM (7 questions).

The questionnaire was designed based on the review of the literature using the questionnaire of Ahadi *et al.* The content validity of this tool was determined by 12 faculty members of midwifery (6 people from Yazd and 6 people from Bandar Abbas Faculty) and two senior experts working at Bandar Abbas Health Centers (Cronbach's alpha= 0.78). A midwife to facilitate the presence of pregnant mothers at Holvar and Olya health centers implemented a group-training program (4 sessions of 2 hours, one session per week on Saturdays). Sixteen participants participated in each group training session.

The Shahid Sadoughi University of Medical Sciences (IR.SSU.REC.1397.003) approved this study. Data were analyzed using parametric and non-parametric tests and SPSS-24 software and the results were reported. T-test and paired t-test were used to analyze the score of beliefs. To evaluate the intention to do FGM, Fisher's exact test, T-test, and Chi-square test were used.

## Results and Discussion

**Table 1** presents the demographic data of the participants.

**Table 1. Comparison of socio-demographic characteristics**

Variable		Intervention group N=32	Control group N= 32	P-value
Maternal age (year)*		32.34±6.24	30.00±7.34	0.156
Spouse age (year)*		36.31±6.46	33.97 (7.01)	†0.169
Education	Under diploma	19 (59.4)	15 (46.9)	†0.621
	Diploma and academic	13 (40.6)	17 (59.1)	
Spouse education	Under diploma	19 (59.4)	17 (59.1)	†0.324
	Diploma and academic	13 (40.6)	15 (46.9)	
Job-status	Housewife	30 (93.8)	29 (90.6)	§1.000
	Employed	2 (6.3)	3 (9.4)	
Spouse job	Employee	5 (15.6)	3 (9.4)	§0.708
	Self-employed	27 (84.4)	29 (90.6)	
Number of children*	Male	0.94 (0.8)	0.91 (0.93)	‡ 0.792
	Female	1.38 (1.34)	0.88 (0.83)	
Number of pregnancies*	Number of abortions	0.28 (0.58)	0.28 (0.58)	†0.010
	Number of deliveries	2.28 (1.51)	1.78 (1.45)	
				§1.000
Do you have information on FGM?	Yes	28 (87.5)	29 (90.6)	
	No	4 (12.5)	3 (9.4)	
Source of obtaining information	Social networks	3 (9.4)	3 (9.4)	‡0.878
	Relatives and friends	23 (71.9)	23 (71.9)	
	No knowledge and	3 (9.4)	3 (9.4)	

information			
Others (set of these cases)		3 (9.4)	3 (9.4)
Analysis of numbers has been reported as number (%), except for the cases * reported as mean and SD.			
§ Fisher's exact test			
¥ Chi-square test			
‡ Mann-Whitney test			
† independent t-test			

**Table 2** shows Both groups reported themselves and their spouses as the most influential people in FGM.

**Table 2. Comparison of socio-demographic characteristics**

Variable		Intervention group N=32 N(%)	Control group N=32 N(%)	P-value
The most influential person (s) in FGM	Herself or her spouse	14 (43.8)	14 (43.8)	0.563 <sup>§</sup>
	Families	9(28.1)	10(31.3)	
	People who do FGM	2(6.3)	2(6.3)	
	Clerics and media, relatives	3(9.2)	1(3.1)	
	Others (multi-option set)	4(12.4)	5(15.5)	
Time for FGM if intended to do it	Neonatal period	16(50.0)	20(62.5)	§0.574
	Infancy and before puberty	16(50.0)	12(37.5)	
FGM method in your region	Cutting a small part of the female genital	3(10.0)	8(26.7)	¥0.095
	Blading female genital (without removing the organ)	27(90.0)	22(73.3)	
The person who does FGM in your region	Local nursemaid	32(100)	32(100)	

§ Fisher's exact test

¥ Chi-square test

† independent t-test

In **Table 3**, participants' beliefs about FGM in two groups of intervention and control have been shown in different stages of the study. As shown in **Table 3**, before the intervention, the most important factor affecting FGM was the tradition with 81.3%, followed by belief in religious obligations with 68.8%. The difference created before and after the intervention was also stable one month after the intervention. Most of the participants believed that before the intervention, women

without FGM had more sexual desire than women with FGM. Additionally, among women's beliefs, FGM to give male birth had the lowest number. Beliefs after the intervention in the interventional group were significantly different from those before the intervention. However, there was no significant difference between immediately and one month after the intervention.

**Table 3. Participants' beliefs about FGM**

Variable		Before intervention N=32 N(%)		After intervention N=32 N(%)		One month after intervention N=32 N(%)	
		Intervention	Control	Intervention	Control	Intervention	Control
Religious obligation	Agree or strongly agree	22(66.8)	21(65.6)	1(3.1)	23(71.9)	1(3.1)	24(75.0)
	No idea	6(18.8)	6(18.8)	4(12.5)	6(18.8)	3(9.4)	6(18.8)
tradition	Disagree or strongly disagree	4(12.5)	5(15.6)	21(84.4)	3(9.4)	28(87.5)	2(6.3)
	Agree or strongly agree	26(81.3)	26(81.3)	1(3.1)	25(78.1)	1(3.1)	30(93.7)
	No idea	3(9.4)	2(6.3)	2(6.3)	3(9.4)	1(3.1)	1(3.1)
	Disagree or strongly disagree	3(9.4)	4(12.5)	29(90.6)	4(12.5)	30(93.7)	1(3.1)
The advice of the jurisprudents	Agree or strongly agree	13(40.6)	13(40.6)	1(3.1)	9(28.1)	24(75.0)	12(37.5)
	No idea	6(18.8)	10(31.3)	9(28.1)	13(40.6)	6(18.8)	9(28.1)
	Disagree or strongly disagree	13(40.6)	7(21.9)	22(66.8)	10(31.3)	2(6.3)	11(34.4)
	Agree or strongly agree	12(37.5)	5(15.6)	0(0.0)	7(21.9)	0(0.0)	8(25.0)
Real Muslim girls	No idea	3(9.4)	8(25.0)	1(3.1)	7(21.9)	2(6.3)	6(18.8)
	Disagree or strongly disagree	17(53.1)	19(59.4)	31(96.9)	18(56.2)	30(93.7)	18(56.2)
Considering non-mutilated girls unclean	Agree or strongly agree	9(28.1)	6(18.8)	0(0.0)	7(21.9)	0(0.0)	12(37.5)
	No idea	4(12.5)	8(25.0)	2(6.3)	5(15.6)	1(3.1)	6(18.8)
	Disagree or strongly disagree	19(59.4)	18(56.2)	30(93.7)	20(62.5)	31(96.9)	14(43.7)
	Agree or strongly agree	14(43.7)	9(28.1)	0(0.0)	10(31.3)	0(0.0)	9(28.1)
Removing harmful part of genital organ	No idea	7(21.9)	11(34.4)	1(3.1)	9(28.1)	2(6.3)	11(34.4)
	Disagree or strongly disagree	11(34.4)	12(37.5)	31(96.9)	13(40.6)	30(93.7)	11(34.4)
Higher sexual desire in non-mutilated girls	Agree or strongly agree	19(59.4)	12(37.5)	3(9.4)	15(46.9)	1(3.1)	9(28.1)
	No idea	5(15.6)	11(34.4)	1(3.1)	9(28.1)	0(0.0)	9(28.1)
Fitness and beauty of body	Disagree or strongly disagree	8(25.0)	9(28.1)	28(87.5)	8(25.0)	31(96.9)	12(37.5)
	Agree or strongly agree	17(53.1)	14(43.7)	0(0.0)	6(18.8)	0(0.0)	31(96.9)

Not considering the girls flagrant	No idea	7(21.9)	10(31.3)	1(3.1)	8(25.0)	1(3.1)	31(96.9)
	Disagree or strongly disagree	8(25.0)	8(25.0)	31(96.9)	18(56.2)	31(96.9)	12(37.5)
	Agree or strongly agree	9(28.1)	4(12.5)	1(3.1)	5(15.6)	1(3.1)	8(25.0)
Lower divorce	No idea	3(9.4)	6(18.8)	3(9.4)	6(18.8)	0(0.0)	7(21.9)
	Disagree or strongly disagree	20(62.5)	22(68.8)	28(87.5)	21(84.4)	31(96.9)	17(53.1)
	Agree or strongly agree	11(34.4)	5(15.6)	0(0.0)	7(21.9)	21(84.4)	6(18.8)
Avoiding infertility	No idea	7(21.9)	17(53.1)	3(9.4)	11(34.4)	0(0.0)	12(37.5)
	Disagree or strongly disagree	14(43.7)	10(31.3)	29(90.6)	14(43.7)	11(34.4)	14(43.7)
	Agree or strongly agree	8(25.0)	9(28.1)	0(0.0)	6(18.8)	0(0.0)	5(15.6)
Higher chance of marriage	No idea	11(34.4)	12(37.5)	2(6.3)	11(34.4)	1(3.1)	14(43.7)
	Disagree or strongly disagree	13(40.6)	11(34.4)	30(93.7)	15(46.9)	31(96.9)	13(40.6)
	Agree or strongly agree	7(21.9)	6(18.8)	1(3.1)	12(37.5)	0(0.0)	11(34.4)
Safe against rape	No idea	8(25.0)	8(25.0)	1(3.1)	8(25.0)	0(0.0)	7(21.9)
	Disagree or strongly disagree	18(56.2)	18(56.2)	30(93.7)	12(37.5)	32(100.0)	14(43.7)
	Agree or strongly agree	9(28.1)	5(15.6)	0(0.0)	6(18.8)	0(0.0)	8(25.0)
Higher value of girls	No idea	5(15.6)	10(31.3)	0(0.0)	6(18.8)	2(6.3)	8(25.0)
	Disagree or strongly disagree	18(56.2)	17(53.1)	32(100.0)	20(62.5)	30(93.7)	16(50.0)
	Agree or strongly agree	5(15.6)	8(25.0)	0(0.0)	7(21.9)	0(0.0)	9(28.1)
Lower still birth	No idea	10(31.3)	8(25.0)	2(6.3)	9(28.1)	1(3.1)	9(28.1)
	Disagree or strongly disagree	17(53.1)	16(50.0)	30(93.7)	16(50.0)	31(96.9)	14(43.7)
	Agree or strongly agree	4(12.5)	3(9.4)	0(0.0)	5(15.6)	0(0.0)	5(15.6)
Give more male birth	No idea	10(31.3)	15(46.9)	1(3.1)	13(40.6)	2(6.3)	12(37.5)
	Disagree or strongly disagree	18(56.2)	14(43.7)	31(96.9)	14(43.7)	30(93.7)	15(46.9)
	Agree or strongly agree	3(9.4)	3(9.4)	0(0.0)	5(15.6)	0(0.0)	5(15.6)
Late menopause	No idea	12(37.5)	10(31.3)	1(3.1)	11(34.4)	1(3.1)	9(28.1)
	Disagree or strongly disagree	17(53.1)	19(59.4)	31(96.9)	16(50.0)	31(96.9)	18(56.2)
	Agree or strongly agree	3(9.4)	6(18.8)	0(0.0)	6(18.8)	0(0.0)	5(15.6)
	No idea	14(43.7)	17(53.1)	1(3.1)	15(46.9)	2(6.3)	14(43.7)
	Disagree or strongly disagree	15(46.9)	9(28.1)	31(96.9)	11(34.4)	30(93.7)	13(40.6)

**Table 4** shows the beliefs of participants about complications of FGM in two groups of interventional and control at various stages of the study. Most of the participants believed that FGM

increased the risk of developing AIDS, tetanus, bleeding, pain, and infection. Participants in this study considered the likelihood of psychological complications at a lower level.

**Table 4. Beliefs of participants about complications of FGM**

Variable		Before intervention		After intervention		One month after intervention	
		N=32		N=32		N=32	
		N(%)		N(%)		N(%)	
		intervention	control	intervention	control	intervention	control
Lower sexual dysfunction in spouse	Agree or strongly agree	10(31.3)	7(21.9)	0(0.0)	8(25.0)	1(3.1)	7(21.9)
	No idea	12(37.5)	16(50.0)	3(9.4)	9(28.1)	3(9.4)	12(37.5)
	Disagree or strongly disagree	10(31.3)	9(28.1)	29(90.6)	15(46.9)	28(87.5)	13(40.6)
Creation of complications such as pain	Agree or strongly agree	14(43.7)	19(59.4)	26(81.3)	17(53.1)	5(15.6)	18(56.2)
	No idea	4(12.5)	2(6.3)	1(3.1)	2(6.3)	2(6.3)	3(9.4)
	Disagree or strongly disagree	12(37.5)	11(34.4)	5(15.6)	12(37.5)	25(78.1)	10(31.3)
Possibility of creation of complications such as bleeding	Agree or strongly agree	14(43.7)	19(59.4)	6(18.8)	13(40.6)	24(75.0)	11(34.4)
	No idea	4(12.5)	2(6.3)	1(3.1)	2(6.3)	3(9.4)	3(9.4)
	Disagree or strongly disagree	12(37.5)	11(34.4)	25(78.1)	17(53.1)	5(15.6)	18(56.2)
Probability of creation of infection at FGM site and adhesion	Agree or strongly agree	19(59.4)	18(56.2)	27(84.4)	21(84.4)	28(87.5)	9(28.1)
	No idea	7(21.9)	4(12.5)	1(3.1)	2(6.3)	1(3.1)	4(12.5)
	Disagree or strongly disagree	6(18.8)	10(31.3)	4(12.5)	9(28.1)	3(9.4)	19(59.4)
Probability of creation of complications such as urination problems	Agree or strongly agree	11(34.4)	8(25.0)	0(0.0)	14(43.7)	31(96.9)	15(46.9)
	No idea	6(18.8)	5(15.6)	3(9.4)	3(9.4)	1(3.1)	4(12.5)
	Disagree or strongly disagree	15(46.9)	14(43.7)	29(90.6)	15(46.9)	0(0.0)	13(40.6)
Probability of creation of complications such as psychological and mental problems	Agree or strongly agree	5(15.6)	4(12.5)	22(68.8)	4(12.5)	24(75.0)	4(12.5)
	No idea	5(15.6)	4(12.5)	5(15.6)	3(9.4)	5(15.6)	3(9.4)
	Disagree or strongly disagree	22(68.8)	24(75.0)	5(15.6)	25(78.1)	4(12.5)	25(78.1)
Probability of increasing AIDS, tetanus, bleeding following FGM with non-sanitary devices	Agree or strongly agree	21(84.4)	21(65.6)	32(100.0)	8(25.0)	32(100.0)	7(21.9)
	No idea	6(18.8)	5(15.6)	0(0.0)	2(6.3)	0(0.0)	3(9.4)
	Disagree or strongly disagree	5(15.6)	6(18.8)	0(0.0)	22(68.8)	0(0.0)	22(68.8)

**Table 5** shows the mean total score of beliefs about before, immediately, and one month after intervention in two groups of interventional and control in different stages of the study. According to an independent t-test, there was no significant difference between the two groups in the beliefs about FGM

before the intervention ( $P = 0.521$ ). Based on the paired-sample T-test for intra-group comparison and independent t-test for inter-group comparison, this value was statistically significant immediately after the intervention ( $P = 0.000$ ). One month after the intervention, the mean  $\pm$  standard deviation

was  $98.34 \pm 6.7$  in the test group and  $72.42 \pm 7.8$  in the control group and it showed a significant increase ( $P=0.000$ ). This value was not significantly different immediately and one

month after the intervention ( $P = 0.877$ ). These differences were not significant in the control group at any time.

**Table 5. Mean of the total score of beliefs about FGM before, immediately, and one month after the intervention**

Study stages	Study groups	Before intervention	Immediately after intervention	One month after intervention	P-value
		Mean (SD)	Mean (SD)	Mean (SD)	
	Intervention group (N=32)	76.10(10.30)	98.21(7.80)	98.34(6.70)	0.001 0.130 , 0.172
	Control group (N=32)	73.90(9.0)	73.90(8.9)	72.42(7.8)	
	P-value	0.521 <sup>I</sup>	0.001	0.001 <sup>II</sup>	
	F	0.449	0.651	0.414	

I T Test

II Paired Test

**Table 6** shows The intention to do FGM was statistically different based on Fisher's exact time. However, the difference

between immediately and one month after the intervention was not statistically different ( $p= 1.000$ ).

**Table 6. Comparison of FGM intention**

Study stages  Variable		Before intervention		After intervention		One month after intervention		P-value
		N=32		N=32		N=32		
		N(%)		N(%)		N(%)		
		Intervention	Control	Intervention	Control	Intervention	Control	
If your neonate is a girl, do you want to mutilate your daughters?	Yes	29(90.6)	32(100.0)	3(9.4)	31(96.9)	3(9.4)	31(96.9)	1.000 <sup>§</sup>
	No	1(3.1)	0(0.0)	24(75.0)	1(3.1)	23(71.9)	1(3.1)	
	I do not know	2(6.3)	0(0.0)	5(15.6)	0(0.0)	6(18.8)	0(0.0)	
Do you think you will have to mutilate the female genital?	yes	13(40.6)	24(75.0)	3(9.4)	23(71.9)	2(6.3)	24(75.0)	0.036 <sup>§</sup>
	No	3(9.4)	0(0.0)	16(50.0)	0(0.0)	19(59.4)	0(0.0)	
	I do not know	16(50.0)	8(25.0)	13(40.6)	9(28.1)	11(34.4)	8(25.0)	
What is the most important person in deciding FGM	myself	12(37.5)	14(43.7)	11(34.4)	13(40.6)	12(37.5)	12(37.5)	0.001 <sup>†</sup>
	myself	2(6.3)	1(3.1)	2(6.3)	1(3.1)	2(6.3)	1(3.1)	
	My family	4(12.5)	6(18.8)	2(6.3)	6(18.8)	2(6.3)	3(9.4)	
	Family of my spouse	1(3.1)	0(0.0)	1(3.1)	0(0.0)	1(3.1)	1(3.1)	
	Other cases	13(40.6)	11(34.4)	16(50.0)	12(37.5)	15(46.9)	15(46.9)	

†: independent t-test

§: Fisher's exact test

**Table 7** shows the complications observed in FGM in interventinal and control groups at various stages of the study.

**Table 7. Complications observed in FGM in two groups**

Study stages  variable		Before intervention		After intervention		One month after intervention		P-value
		N=32		N=32		N=32		
		N(%)		N(%)		N(%)		
		intervention	control	intervention	control	intervention	control	
FGM complications in your relatives	yes	2(6.3)	3(9.4)	1(3.1)	3(9.4)	1(3.1)	2(6.3)	1.000 <sup>‡</sup>
	no	30(93.7)	29(90.6)	31(96.9)	29(90.6)	31(96.9)	30(93.7)	

This study evaluated the effect of group training on beliefs and intention to do FGM in pregnant women . A study conducted by Sakeah *et al.* in 2019, entitled " Persistent FGM despite its illegality in Ghana", showed that historical traditions, religious narratives, and women's lack of independence along with men's power are important factors influencing the FGM [17]. The result of this study was in line with that of the current study on the effect of traditional beliefs and religious obligations on FGM. However, in our community, the ultimate decision-maker for FGM was women themselves. However, in a study conducted in Ghana, men's role was more pronounced.

In a review study conducted in 2018, Dunn examined the barriers to discontinuation of FGM in Africa. The results of this study showed that the most important factor in FGM in these countries is the tradition and cultural context of the Arabs [18]. However, in the present study, the most important reason for FGM was tradition and belief in religious obligations, which was consistent with the result of the above study. Basiri *et al.* examined the views of Islamic scholars and specialist physicians on FGM. they concluded that there is no valid evidence to recommend FGM in Islam. Therefore, according to Islam, FGM is not obligatory [19].

Moreover, as this study and other studies indicated that FGM is more common in traditional areas; explicit statements of jurisprudents can decrease this action. the majority of people believe that FGM is a religious or traditional action. Most participants also believed that sexual desire was greater in non-mutilated girls. However, regarding the complications of FGM, the only complication reported by the participants was the pain. In the study conducted by Adiguzel *et al.* (2019) to examine the beliefs and attitudes of Somali women about FGM, results showed that 79% of the participants considered FGM as a tradition and 21% considered FGM as a religious action. Moreover, 74% of participants believed that FGM reduced their sexual desire. In this study, 82% of FGM cases were type I. Additionally, 75% of the participants believed that FGM could be associated with complications such as hepatitis, pain, and so on [20]. This study was consistent with our study in all respects. In this study, Ahmed *et al.* (2019) reviewed the views of 29 religious jurisprudents of Irbil and Iraqi Kurdistan. The results of this study showed that most jurisprudents in these areas agree with the continuation of FGM, and they considered reducing female sexual desire and increasing the likelihood of virginity as the causes of this attitude. Also, all of these jurisprudents stated that there is no explicit hadith in Islam to support or deny FGM [21]. The results of this study were not consistent with those of our study. This inconsistency might be because the participants were jurisprudents in the mentioned study, while in the present study; most of the participants had low levels of education. The results of the present study showed that the majority of participants did not observe a specific complication on FGM before the intervention, and their belief in the complication of FGM was poor. Training in the interventional group caused the participants to become familiar with the complication of FGM. The difference between the two interventional and control groups is visible. In a review study conducted by Mahgoub and Ali (2019- Sudan), the physical and psychological complications of women after FGM were investigated. The results of this study showed that even girls who do not experience chronic pain and bleeding after FGM often experience complications during pregnancy. There is also pain during sexual intercourse, delivery problems, and the transmission of disease in people who have been mutilated non-sterile. The results of this study were not consistent with those of the present study. The reason might be related to the questions of the present study's questionnaire assessing the short-term complications after FGM, while the mentioned study investigated the long-term complications of FGM.

The results of this study showed that the participants' views were favorable in this regard. However, the belief score after the intervention in the interventional group was more favorable. Alosaimi *et al.* (2019) evaluated the relationship between personal and social characteristics and FGM in Yemen. In this study, the results revealed that girls who had experienced FGM had a higher chance of early marriage and marriage with relatives [22], which was consistent with the present study. The results of the present study reported the desired attitude of the participants. However, training in the interventional group

improved the scores of these two questions at both times immediately and one month after the intervention. In a study conducted by Ahmed *et al.* in 2019, they examined the attitudes of Iraqi women about the reasons for FGM in their daughters. The results of the study showed that women believed that FGM reduces their sexual desire and increases the satisfaction of their spouses but also causes that their spouse to view them as clean and licit [23]. The results of this study were relatively consistent with those of the present study. The results revealed that the intention to do FGM immediately and one month after the intervention was significantly reduced in the interventional group compared to that in the control group and this difference was statistically significant. It was not statistically significant between immediately and one month later ( $P = 1.000$ ). However, there was no difference before, immediately, and one month after intervention in the control group. This indicated that all research hypotheses were confirmed. Modrek *et al.* explored the best ways to reduce FGM in Egypt. The results of this study showed that improving socioeconomic status, social media messages, and the empowerment of women have a direct impact on the intention to do FGM. However, the most important predictor of intention to do FGM is maternal education and family wealth [24]. As the most important decision-maker for FGM was a mother in this study, increasing the knowledge of pregnant women plays an important role in this regard. In a national study in Nigeria, Ossai *et al.* investigated the maternal factors related to FGM. The results of this study showed that although there was a positive attitude towards the lack of doing FGM, the prevalence of FGM was still high in this country [25]. The results of this study were consistent with those of the present study. In this study, except for one person in the control group, no one considered the view of the girl herself as a criterion to do FGM. In the present study, most of their participants considered themselves as the most important person in decision making. Haji Fogaha *et al.* conducted a review study to examine the views of Islam, Christianity, and Judaism religions on FGM. The results of this study revealed that the main factors involved in FGM were tradition and religion [26]. While the greatest factor of belief in FGM in this study was tradition and religious commitment, most of the participants considered themselves as the decision-makers to do FGM. In the present study, only two subjects in the control group and three subjects in the interventional group reported side effects. There was no statistically significant difference between the two groups. In a review study conducted in 2018, Klein *et al.* examined FGM, its complications. This study reported bleeding, urinary problems, cysts, infections, and delivery complications as the most important complication of FGM [15]. This result was not in line with that of our study. In this study, 90% of the subjects in the interventional group and 73.3% in the control group stated that in circumcision was only blading a small part of the clitoris without removing the organ, but the type of FGM might be different in other geographic locations. Therefore, the



inconsistency in the results of different studies in terms of FGM consequences might be attributed to the type of FGM.

## Conclusion

According to the results of this study, it is possible to eliminate the FGM by implementing this intervention in all areas where FGM is considered a tradition.

## Limitations of the study

In this study most participants considered themselves and their spouses as the most effective person in deciding to do FGM, but men could not participate in the classes. It is recommended that similar research can be conducted on a population of men and women. Moreover, the results cannot be generalized to highly educated populations.

**Acknowledgments:** Thanks from deputy of research, Shahid Sadoughi University of Medical Sciences for supporting this study.

**Conflict of interest:** None

**Financial support:** None

**Ethics statement:** None

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