

# Comparison of childbirth training workshop effects on knowledge, attitude, and delivery method between mothers and couples groups referring to Isfahan health centers in Iran

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## ABSTRACT

**Background:** The World Health Organization announced the acceptable level of cesarean section (CS) as 10-15%. In recent years, the rate of CS has been increasing irregularly. Lack of appropriate knowledge and attitude among couples plays a major role in this regard. This study tried to compare the effects of a childbirth training workshop on knowledge, attitude, and delivery method.

**Materials and Methods:** The present study is a randomized clinical trial conducted in four stages on 180 subjects referring to Isfahan health care centers in three groups of mothers (alone), couples (mothers and their respective partners), and control. After sampling, a pre-test and intervention in the form of an educational workshop were conducted. Then, post-test was conducted immediately after, 1 month later, and in puerperium in all three groups. Data were analyzed by SPSS version 15.

**Results:** The analysis showed that the knowledge mean was statically significant in mothers ( $P < 0.0001$ ), couples ( $P < 0.0001$ ), and control group ( $P < 0.0001$ ) before and after intervention. Also, the attitude mean was statically significant in mothers ( $P < 0.0001$ ), couples ( $P < 0.0001$ ), and control groups ( $P < 0.0001$ ) before and after intervention. Analysis of delivery method showed that in mothers, couples, and control groups, normal vaginal delivery was the most preferred method in that order, which was significant ( $P = 0.017$ ).

**Conclusions:** Workshop education of pregnant women and their spouses was effective on encouraging them to natural delivery. Therefore, designing educational and counseling programs through collaborative methods for mothers and their spouses is suggested to reduce the rate of cesarean deliveries.

**Key words:** Attitude, couples, delivery, Iran, knowledge

## INTRODUCTION

Pregnancy and delivery are two beautiful and wonderful phenomena<sup>[1]</sup> which cause many physical, psychological, and social changes in women.<sup>[2]</sup> Pregnancy is a process which can be ended in its physiological form as a vaginal delivery, or sometimes due to medical and non-medical causes, to cesarean section (CS).<sup>[3]</sup> Nowadays, CS is a common surgery among women.<sup>[4]</sup> Although CS can save mother's and her infant's life in emergency cases, when

the mother is unable to have vaginal delivery, it is not out of risk.<sup>[1]</sup> Unfortunately, CS has unnecessarily grown in number<sup>[5]</sup> and is counted as a concern in modern midwifery.<sup>[6]</sup> Number of deliveries by CS has increased in different countries in the world from the middle of 20<sup>th</sup> century.<sup>[7]</sup> From 1970 to 2007, the rate of CS in the USA has grown from 4.5% of all deliveries to 38%.<sup>[3]</sup> Based on the statistics of Isfahan Midwifery Association, about 47% of deliveries in Iran and 62% of all deliveries in the year 2012<sup>[8]</sup> and 60% in 2013<sup>[9]</sup> in the Isfahan province were CS. This rate reaches 99% in some hospitals, which is very high, compared to national mean rate, and should be noted.<sup>[8]</sup> Meanwhile, the World Health Organization (WHO) recommends 10-15% of deliveries at the most as the acceptable rate of CS.<sup>[3,10]</sup> Based on modern midwifery science, CS with no indication imposes high costs to families and brings about problems for the hospitals with regard to personnel and medical equipments,<sup>[11]</sup> and influences the quality of life.<sup>[12,13]</sup> In addition, its mortality rate is notably higher than in vaginal delivery.<sup>[14]</sup> CS results in more acute and frequent complications including the risk of unconsciousness, puerperal infection and high hemorrhage,<sup>[3]</sup> postpartum depression,<sup>[15]</sup> and birth of preterm infants,<sup>[16]</sup> compared

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to vaginal delivery. Generally, the mortality rate is fourfold to fivefold more in CS compared to vaginal delivery. The mortality rate is 2.1 in vaginal delivery; 5.9 in elective CS (risk ratio = 2.84), and 18.2 in emergency CS (risk ratio = 8.48) out of 100,000 cases.<sup>[7]</sup> One of the reasons that plays a major role for the high CS rate is clients' own requests,<sup>[5]</sup> which is due to lack of knowledge about the trends of vaginal delivery and CS.<sup>[17]</sup> Planning prepares the pregnant woman and her spouse for facing delivery and reduces their concerns.<sup>[18]</sup> As marital life is a common life, active cooperation and participation of the spouses in fertility is essential.<sup>[19]</sup> Participation of the men, who are strategy and decision makers in the family unit and society, is less observed in strategies related to lowering maternal mortality. They have no access to the information which help them make an informed decision and protect their spouses' as well as their own health.<sup>[20]</sup> In maternal health promotion, men play a specific role and are a part of problem solving, although they were considered as an obstacle in the past.<sup>[21]</sup> Encouragement, involvement, and education of the men concerning stages of vaginal delivery, the advantages and disadvantages of different modes of delivery, and convincing them to transfer the data to their spouses affect pregnant women's knowledge, attitude, and practice.<sup>[19]</sup>

On the other hand, the root of women's negative attitude is their experiences of previous vaginal deliveries, concerns and depression, unpleasant memories of their childhood, and their difficult socioeconomic conditions.<sup>[22,23]</sup> Education is an activity through which the individuals increase their knowledge or change their methods of thinking and behavior.<sup>[24]</sup> Educational programs and selection of educational methods should be consistent with conditions, efficiency, applicability, and learners' interest. One of the common methods of education is workshop method.<sup>[25]</sup> Workshop education is one of the advantages of group education, which is used for learners' extracurricular programs and promotion of their families' knowledge and participation.<sup>[26]</sup> Methods such as discussion, role play, and group work are selected based on their goals. In workshop education and discussion sessions, all members equally participate.<sup>[27]</sup> The Ministry of Health has tried to increase mothers' knowledge in the past 5 years through different ways. With regard to the priority of CS reduction as the fourth priority in maternal health,<sup>[28]</sup> the commitment of Islamic Republic of Iran is to achieve the Millennium Development Goals (maternal mortality by 2015 = 18-20 out of 100,000 of live births).<sup>[24]</sup> With regard to the high rate of CS in Iran, especially in Isfahan, compared to the standard rate determined by the WHO and with respect to the efficacy of collaborative education in promotion of knowledge and attitude, this study aimed to compare the effect of a childbirth training workshop on knowledge, attitude, and delivery mode.

## MATERIALS AND METHODS

This is a clinical trial conducted on 180 subjects in three groups during four stages in health care centers in Isfahan. Sample

size was calculated to be 25 subjects in each group, but was increased to 30 considering possible dropouts ( $\alpha = 0.05$ ,  $\beta = 0.1$ ). Convenient random sampling was conducted in 18 health care centers in three groups: intervention group of mothers alone, intervention group of couples, and control. For random allocation of the subjects, the sequence of subjects' allocation to either of the above-mentioned groups was made by draw as mothers, couples, and control.

The subjects were allocated to the related group based on their sequence of arrival to clinic during sampling and the groups were completed in number. A total of 90 couples attended the study ( $n = 30$  randomly assigned to each group). Inclusion criteria were being primiparous in 26-32 weeks of gestational age, spouses' literacy, having adequate physical and physiological health to actively attend the workshop, and absence of the following: Severe midwifery problems related to pregnancy, any baseline specific diseases, any diagnosable contraindication for CS during pregnancy, any psychological diseases, and an unexpected pregnancy. Exclusion criteria were absenteeism of the pregnant women or their spouses in educational sessions in the study groups, no complement of the questionnaire, occurrence of a specific disease or problem contraindicating subjects' attendance in the study, and the need for a complete bed rest. Data were collected by a questionnaire that was completed during four stages (before intervention, immediately after intervention, 1 month after intervention, and within 6 weeks postpartum). This questionnaire contained three sections. The first section included eight fertility and personal demographic questions, i.e., mother's age, spouse's age, mother's occupation, spouse's occupation, mother's education, spouse's education, gestational age in weeks, and mode of conducted delivery (for postpartum stage). The second section contained 24 four-point questions on knowledge. Knowledge score was calculated by the points scored by the subjects for the correct answers to the questions in the questionnaire. Correct answers were given one point and wrong answers were given zero.

The third section contained 29 attitude questions scored on five-point Likert scale. Content validity of the tool was checked. The initial questionnaire was modified by using valid references and texts and through supervision of the supervisors and approval of 15 experts of medical and midwifery education, and its validity was confirmed. Reliability of the tool was confirmed by split-half method in a pilot study on 30 subjects (not attending the study) and through calculation of Cronbach's alpha for questions on knowledge ( $\alpha = 0.83$ ) and attitude ( $\alpha = 0.76$ ).

## Ethical considerations

The subjects were explained about the design of research, method of education, and confidentiality of their data as

well as the goal of study, and were asked to sign a written consent to enter the study.

The subjects in each group were invited to attend the educational workshop. The workshop was held in three 4-h sequential weekly sessions in groups of 30 members separately.

Lecture method, questions and answers, role play, problem solving, and educational pamphlets were used to teach educational materials to promote subjects' knowledge and group dynamicity, as well as to attain the highest participation of the subjects. Educational content included issues on couples' communication, parental role, the role of the spouse in mother's selection of delivery mode, attendance of the spouse or a relative at delivery stages, childbirth fear, delivery pain, delivery mechanism, medicational pain relief techniques and their effects, non-medicational pain relief methods, advantages and disadvantages of CS and vaginal delivery, indications and contraindications of CS, hemorrhage and infection after every mode of delivery, postpartum sorrow and depression, mother-infant attachment, breast feeding, and infants' intelligence, growth, and development. The control group received conventional and routine education during maternal care by the midwives in health care centers, gynecologists, and their other relatives. Stages one to four of the questionnaire complement for the subjects in the study groups were conducted before intervention at the beginning of the first educational workshop session and after intervention at the end of the last educational workshop session, 1 month after intervention, and 6 weeks after delivery, respectively. After the delivery stage, the details of delivery mode were asked and recorded in the questionnaire. All these four stages were conducted for the control group in the same time intervals. Questionnaires related to couples were given to pregnant women in the intervention groups of mothers alone and control group during all stages and were collected after complement by the couples.

Data were analyzed by Chi-square, Kruskal-Wallis, repeated measure analysis of variance (ANOVA), and one-way ANOVA through SPSS version 15.

## RESULTS

Mean (SD) of female subjects' age in mothers alone group was 25.83 (2) years, in the group of couples was 25.93 (2) years, and in control group was 30.53 (2) years. One-way ANOVA showed no significant difference between mothers' age ( $P = 0.968$ ,  $F = 0.033$ ) and spouses' age ( $P = 0.612$ ,  $F = 0.494$ ). The highest education level was middle school and high school in 50% women and 56.7% men of mothers alone group and in 36.7% women and 43.3% men in the control group, but it was bachelor's degree in 56.7% women and 43.3% men of

the couples group. Kruskal-Wallis test showed a significant difference in women's education ( $P = 0.013$ ) and men's occupation ( $P = 0.011$ ) between the three groups.

ANOVA test showed no significant difference in women's ( $P = 0.823$ ) and men's ( $P = 0.442$ ) mean scores of knowledge between the three groups before educational intervention. ANOVA showed a significant difference in mean scores of knowledge in women ( $P < 0.0001$ ) and men ( $P < 0.0001$ ) between the three groups immediately after intervention, 1 month after intervention, and after delivery [Table 1].

Repeated measure ANOVA showed a significant increase in mean scores of knowledge in women of all three groups, i.e., mothers alone ( $P < 0.0001$ ), couples ( $P < 0.0001$ ), and control ( $P < 0.0001$ ), and in men of all three groups, i.e., mothers alone ( $P < 0.0001$ ), couples ( $P < 0.0001$ ), and control ( $P < 0.0001$ ), immediately after intervention and after delivery [Table 1]. ANOVA showed no significant difference in mean scores of women's ( $P = 0.120$ ) and men's ( $P = 0.112$ ) attitude between the three groups before educational intervention. ANOVA showed a significant difference in mean scores of women's ( $P < 0.0001$ ) and men's ( $P < 0.0001$ ) attitude between the three groups immediately after intervention, 1 month after intervention, and after delivery [Table 2].

Repeated measure ANOVA showed a significant increase in mean scores of women's attitude between the three groups of mothers alone ( $P < 0.0001$ ), couples ( $P < 0.0001$ ), and control ( $P < 0.0001$ ), and in men between the three groups of mothers alone ( $P < 0.0001$ ), couples ( $P < 0.0001$ ), and control ( $P < 0.0001$ ) immediately after intervention, 1 month after intervention, and after delivery [Table 2].

As presented in Table 3, higher mode of vaginal delivery in women was observed in mothers alone, couples, and control, in that order. Chi-square test showed a significant difference between the three groups concerning the conducted mode of delivery ( $P = 0.017$ ).

## DISCUSSION

This study aimed to apply workshop education to promote the levels of knowledge, attitude, and pregnant women's and spouses' encouragement toward vaginal delivery and reduction of CS in groups of mothers alone, couples, and control in Isfahan. The present study showed that holding organized educational programs for pregnant women and couples could lead to formation of a positive attitude in pregnant women through knowledge transfer and spouses' emotional support, and consequently, a reduction in the rate of CS. No similar study had been conducted prior to the present study to educate the couples simultaneously. Evidence shows that the related studies were conducted either on just pregnant

**Table 1: Mean scores of women's and men's knowledge in groups before intervention, immediately after intervention, 1 month after intervention, and after delivery**

Groups Variable	Mean			df	F	P value
	Mothers alone	Couples	Control			
Women's knowledge (0-24)						
Before intervention	13.10	13.63	13.27	2	0.195	0.823
Immediately after intervention	21.60	22.20	14.47	2	104.228	<0.0001
One month after intervention	21.97	22.30	15.10	2	94.009	<0.0001
After delivery	21.40	21.50	15.03	2	69.749	<0.0001
F	71.142	112.810	11.410			
P value	<0.0001	<0.0001	<0.0001			
Men's knowledge (0-24)						
Before intervention	12.40	12.60	12.10	2	0.823	0.442
Immediately after intervention	18.03	21.37	12.73	2	71.516	<0.0001
One month after intervention	18.30	21.30	13.33	2	70.509	<0.0001
After delivery	17.73	20.50	13.37	2	57.576	<0.0001
F	31.486	80.204	5.236			
P value	<0.0001	<0.0001	<0.0001			

**Table 2: Mean scores of women's and men's attitude in groups before intervention, immediately after intervention, 1 month after intervention, and after delivery**

Group Variable	Mean			df	F	P value
	Mothers alone	Couples	Control			
Women's attitude (0-116)						
Before intervention	47.23	48.70	46.67	2	2.223	0.120
Immediately after intervention	76.20	92.80	51.60	2	26.216	<0.0001
One month after intervention	85.07	97.73	53.80	2	35.980	<0.0001
After delivery	86.13	98.07	52.20	2	33.265	<0.0001
F	75.649	49.819	11.864			
P value	<0.0001	<0.0001	<0.0001			
Men's attitude (0-116)						
Before intervention	38.97	45.73	42.00	2	2.243	0.112
Immediately after intervention	69.87	89.87	46.27	2	29.744	<0.0001
One month after intervention	76.80	94.40	49.60	2	37.137	<0.0001
After delivery	79.20	94.27	48.07	2	36.187	<0.0001
F	34.822	58.984	10.530			
P value	<0.0001	<0.0001	<0.0001			

**Table 3: Frequency of delivery mode in groups**

Group Delivery mode	Mothers alone		Couples		Control	
	No.	%	No.	%	No.	%
Vaginal	18	60	17	56.7	8	26.7
CS	12	40	13	43.3	22	73.3
Total	30	100	30	100	30	100
df	2					
$\chi^2$	8.105					
P value	0.017					

women alone or on couples (only one study). In the present study, the levels of men's and women's knowledge about and attitude toward delivery modes and their advantages and disadvantages were low before intervention in the three groups of mothers alone, couples, and control, possibly due to inefficiency of the education provided in health care centers. There was a significant difference between knowledge and attitude scores of men and women in the study groups and control before and after educational intervention. Mean scores of men's and women's knowledge and attitude in the three groups of couples, mothers alone, and control increased after



intervention, respectively, but this effect was more in couples and mothers alone groups compared to the control group. It should be noted that scores of knowledge and attitude were more in the group of couples than mothers alone group. It can be concluded that education was effective on promotion of women's and their spouses' levels of knowledge and attitude. The education provided in the present study was more effective compared to the conventional education that is often imparted in health care centers for just the mothers as an official routine to be recorded in their medical files. Higher scores of men's and women's knowledge and attitude in the group of couples can be attributed to the fact that attendance of women accompanied with their spouses and mutual consultation could have increased couples' motivation to learn educational material and have more appropriate function. Besharati *et al.*,<sup>[6]</sup> in a study on 80 pregnant women in Rasht, Iran, could increase their scores of knowledge about and attitude toward delivery modes. Sharifirad *et al.*,<sup>[19]</sup> in a study on 88 pregnant women and their spouses in Isfahan, could increase women's and men's knowledge about and attitude toward delivery modes by holding just one educational session for the pregnant women's spouses, which is consistent with the present study. In the present study, men's mean scores of knowledge were lower than women's mean scores in all three groups before intervention, possibly due to lower access of men to maternal education held in health care centers. Mortazavi *et al.*<sup>[20]</sup> reported poor level of knowledge about pregnancy problems among 77% of men. Mortazavi, in two other studies on men's participation in maternal care, showed that although men were interested in participating in maternal care, their poor awareness of appropriate health behavior and very low knowledge about pregnancy problems and delivery acted as a major obstacle in occurrence of their supportive behavior.<sup>[29]</sup> Another study reported that from women's viewpoint, men's participation in maternal care and delivery was essential, acceptable, and possible.<sup>[30]</sup> Ghafarifarid *et al.*,<sup>[24]</sup> Tofighi Niaki *et al.*,<sup>[17]</sup> Rahimi Kian *et al.*,<sup>[5]</sup> Hosseini *et al.*,<sup>[31]</sup> and Direkvand *et al.*<sup>[32]</sup> are among the other similar consistent studies on the effect of education on women's and their spouses' knowledge.

Contrary to the present study results, which showed a significant association between subjects' education and the attitude change, Toghiani found a significant effect of maternal and pregnancy education given on pregnant women's attitude.<sup>[33]</sup> In another study, it was shown that the women who had undergone education had the same negative attitude toward vaginal delivery as before the study and selected CS (by threefold to sixfold) as their favorite mode of delivery,<sup>[34]</sup> possibly due to the differences in the effect of educational contents on emotional domain and the adopted educational method. In these two studies, it should be noted that a slight increase in the levels of women's and men's knowledge and attitude in the control group could have resulted from subjects' curiosity and personal search to find the answers to questions, followed by reviewing

the questionnaire. Anyhow, this increase in knowledge and attitude is not as much as that in the study groups. Also, the changes in levels of knowledge and attitude had an ascending trend in all three groups immediately after intervention, 1 month after intervention, and after delivery, compared to before intervention. Therefore, it can be concluded that storage of information and attitude change remained until after delivery. Rate of vaginal delivery was high in mothers alone, couples, and control groups in that order, which showed a significant difference between the study groups (mothers alone and couples) and the control group. Number of vaginal deliveries in the couples group was one case (3.3%) less than that in mothers alone group, possibly due to a higher level of education, which consequently led to higher economic status, more referrals to private offices, as well as harder attitudes to be changed among the subjects in this group. Khorsandi *et al.*<sup>[35]</sup> could increase the rate of vaginal delivery after educating the women in intervention group, compared to control, which is consistent with the present study. Besharati *et al.*,<sup>[6]</sup> TofighiNiaki *et al.*,<sup>[17]</sup> Ajh *et al.*,<sup>[36]</sup> RahimiKian *et al.*,<sup>[5]</sup> and Sharifi *et al.*<sup>[19]</sup> obtained results consistent with the present study. Contrary to the present study results, Ghafari *et al.*<sup>[24]</sup> could neither increase the rate of vaginal delivery nor decrease CS despite promotion of subjects' knowledge and attitude in the study group, possibly due to the method of education and lack of spouses' attendance. Farzan *et al.*,<sup>[37]</sup> in a study on CS and the related factors in governmental and private hospitals of Isfahan, reported the rate of conducted CS as 73.6%, which is consistent with the rate of CS obtained in our control group (73.3%).

## CONCLUSION

Generally, the results obtained in this study show the positive effect of workshop education. It is suggested to highlight patients' education as a part of job description of midwives in midwifery counseling centers. Although the mode of delivery in mothers alone and couples group showed no significant difference, the level of increase in knowledge and attitude was more in women, and, especially, men in the couples group.

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