The effectiveness of group cognitive behavioral training in changing nulliparous women's attitudes and choice of delivery route

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Abstract

Background and Aim: Considerable increase in the rate of cesarean section is currently a major health challenge in our country, Iran. Cesareans are performed mostly without having a medical indication and due to pregnant women's negative attitude to normal vaginal delivery. This study was conducted to measure the effectiveness of group cognitive behavioral training in changing nulliparous women's attitudes and choiceof delivery route.

Methods: Forty nulliparous women referring to Imam Khomeini Hospital, Mahallat, Iran, were recruited conveniently to this quasi-experimental study. The women were assigned to either the control or the experimental groups—20 women in each group. In the control group, the women solely received routine prenatal care while the women in the experimental group, received group cognitive behavioral training in addition to routine prenatal care. The data collection tool was the Attitude to Delivery Questionnaire. The SPSS software (v. 18.0) as well as the paired- and the independent-samples t, the McNemar's, the Chi-square, and ANCOVA tests were used for data analysis. The level of significance was set at below 0.01.

Results: Results show that in the experimental group, the mean of ADQ score significantly increased after the study (P=0.001), while in the control group, it did not change significantly. Moreover, the results of ANCOVA also revealed a significant difference between the study groups regarding the mean score of attitude (P=0.001). The results of the McNemar test were also significant. In other words, the number of women in the control and the experimental groups who chose normal vaginal delivery after the study intervention was equal to one and eight respectively (P=0.008).

Conclusion: Group cognitive behavioral training positively affects nulliparous women's attitudes and their choice of normal vaginal delivery.

Key Words: Cognitive Therapy; Education; Delivery; Obstetric; Women; Attitude

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Introduction

The rate of cesarean section (C-section) has progressively increased both in developing and developed countries in the last decades (1). Since 2009, 50%–65% of all deliveries in Iran have been through C-section from which, 90% have been performed in urban areas and in private hospitals (2). Compared with normal vaginal delivery (NVD), C-section is associated with greater health risks for both mothers and babies (3).

The two main reasons behind choosing C-section by pregnant women are their lack of knowledge and negative attitude about NVD (4). Pregnant women have limited knowledge about the adverse effects of C-section on mothers and babies and falsely believe that C-section is less problematic for babies (5). Such lack of knowledge and negative attitude about NVD cause women to have fear of childbirth. Studies have reported that the commonest factor behind nulliparous women's request for C-section is their fear of childbirth; the greater the fear of childbirth in the third trimester of pregnancy, the higher the likelihood of choosing to deliver through C-section (6). Fear of childbirth is more terrible among nulliparous women. Given pregnant women's lack of knowledge about the benefits of NVD and its preference over C-section and considering the significant relationship of knowledge with attitude, educational programs can be implemented for enhancing women's knowledge of NVD and helping them foster positive attitude toward it (7).

One of the strategies for enhancing individuals' knowledge and changing their attitudes is cognitive behavioral therapy (CBT) which was developed through integrating behavioral therapy with cognitive therapy. In fact, the strengths of behavioral therapy (such as objectivity and evaluation) and the strengths of cognitive therapy (such as using memory for reconstructing and interpreting information) have been included in CBT (8). CBT-based programs educate self-regulation skills (such as relaxation) as well as the skills for coping with stress and pain (9) and help individuals correct their irrational and incorrect cognitions (10).

We searched the Persian and the English scientific databases of Magiran, SID, ScienceDirect, and Wiley by using the keywords of 'normal vaginal delivery', 'cesarean section', 'cesarean delivery', and 'cognitive behavioral training/interventions'. However, no study was found on the effectiveness of CBT interventions on changing women's attitudes to delivery. Consequently, given the high C-section rate in Iran and the fact that healthy pregnancy and NVD are among the goals of the Iranian Ministry of Health and Medical Education, the present study was conducted to measure the effectiveness of group cognitive behavioral training in changing nulliparous women's attitudes and choice of delivery route.

Methods

This was a two-group pretest-posttest controlled quasi-experimental study. The study population comprised all pregnant women referring to Imam Khomeini Hospital, Mahallat, Iran, in 2013 for receiving routine prenatal care. The inclusion criteria were having Iranian nationality, being able to read and write in Persian, being nulliparous, having a wanted singleton pregnancy, having a gestational age of more than three months (based on the first day of the last menstrual period), and having neither a history of infertility nor a contraindication for NVD. As the minimum sample size for interventional studies is equal to fifteen (11, 12), we recruited a convenient sample 40 women to the study.

After obtaining the necessary permission for the study, posters were hanged up in the study setting for informing women about the training program and inviting them to the study. The aims of the study were explained to the referring women and then, informed consent was obtained from eligible individuals, and they were enrolled in the study. Thereafter, all the recruited women were randomly assigned to either the

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control or the experimental groups—20 women in each group—by using drawing method. Women in the control group solely received routine prenatal trainings from a Master's holder in midwifery while in the experimental group, women received cognitive behavioral training from a psychologist in addition to routine prenatal care. Training was provided in eight 90-minute weekly sessions. The contents of the sessions were as follows.

Session 1. Introducing group members to each other (presenting an overview of the program, explaining the aims, methods, and ethical considerations of the study, explaining the importance of becoming a mother, presenting an overview of the contents of the next session);

Session 2. Assessing women's beliefs about NVD(reviewing the contents of the previous session, asking women to share their beliefs about NVD, holding a discussion among the women about NVD, educating them about different phases of delivery, presenting an overview of the contents of the next session)

Session 3. Introducing the Beck's cognitive model (reviewing the contents of the previous session, explaining automatic thoughts and negative core beliefs, explaining the contents of negative thoughts, explaining logical errors, and presenting an overview of the contents of the next session);

Session 4. Educating NVD-related cognitive errors (reviewing the contents of the previous session, explaining NVD-related negative automatic thoughts, negative core beliefs, and logical errors, and presenting an overview of the contents of the next session);

Session 5. Educating the ways for avoiding NVD-related cognitive errors (reviewing the contents of the previous session, educating positive internal dialogue and self-ordering, educating muscular relaxation, and presenting an overview of the contents of the next session);

Session 6. Educating rational analysis(reviewing the contents of the previous session, educating cortical intentional inhibition, educating how to create contradictory beliefs, and presenting an overview of the contents of the next session);

Session 7. Educating Lamaze and painless delivery exercises (reviewing the contents of the previous session, explaining breathing techniques for relieving labor pain, exercising accurate massaging during delivery, showing a movie about painless delivery, and presenting an overview of the contents of the next session);

Session 8. Reviewing educations and exercises and introducing a real case (reviewing the contents of the previous session, evaluation of the program, presenting a real case, and finalizing the program).

The Attitude to Delivery Questionnaire (ADQ) was used for evaluating participants' attitudes to delivery before and after the study intervention. Developed by Parvanehvar (2002), the ADQ contains 34 five-point Likert-type items. The possible responses to each item are 'Completely agree', 'Agree', 'Have no idea', 'Disagree', 'Completely disagree' which are scored respectively from 1 to 5. Higher scores show more positive attitude to NVD. The validity of the ADQ had been upheld by using the content validity assessment method while its reliability had been confirmed by a Cronbach's alpha of 0.87 (13). We also assessed the internal consistency of the ADQ which yielded a Cronbach's alpha of 0.85. Moreover, participants' choice of delivery route was assessed both before and after the study intervention by asking a Yes/No question.

The SPSS software (v. 18.0) as well as the Paired- and the independent-samples t, the McNemar's, the Chi-square, and the analysis of covariace (ANCOVA) tests were used for data analysis. The level of significance was set at below 0.01.

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Results

The Chi-square and the independent-samples t tests showed that the study groups did not differ significantly from each other regarding variables such as previous history of abortion and stillbirth, educational status, age, and the length of pregnancy (Table 1).

Table 2 shows the results of the paired-samples t test. This test revealed that in the experimental group, the mean of ADQscore significantly increased after the study while in the control group, it did not change significantly. Moreover, after the study, the difference between the study groups regarding ADQ score was statistically significant (P=0.001).

Table 1: Participants' characteristics in both the study groups

Variables		Groups		P value
		Experimental N (%)	Control N (%)	
History of abortion	Yes	19 (95)	19 (95)	1.00
	No	1 (5)	1 (5)	
History of stillbirth	Yes	18 (90)	19 (95)	0.56
	No	2 (10)	1 (5)	
Educational status	Diploma or lower	4 (20)	2 (10)	0.68
	Associate diploma	9 (45)	10 (50)	
	Bachelor's and higher	7 (35)	8 (40)	
Age	Mean± standard deviation	24.90±1.55	25.05±1.50	0.75
The length of pregnancy	Months	6.30±2.31	6.50±2.18	0.78

Table 2: Comparing the pretest and posttest scores of attitude to delivery in both study groups

Groups	Phases		P value
	Pretest	Posttest	
	Mean±standard deviation	Mean±standard deviation	
Experimental	89.20±6.01	102.95±5.19	<0.001
Control	89.35±5.36	90.55±5.59	<0.49
P value	0.93	<0.001	-

Table 3: The results of the McNemra's test for the choice of delivery route in both study groups

Group	Pretest	Posttest		P value
		NVD	C-section	
Control	NVD	7	0	1.00
	C-section	1	12	
Experimental	NVD	8	0	0.008
	C-section	8	4	

Table 4: The results of ANCOVA on attitude to delivery in both study groups after adjusting the pretest scores

Variables	Sum of squares	Df	Mean squares	F	P value	Effect size	Statistical power
Attitude to delivery	1516.945	1	1516.945	51.63	0.000	0.73	1.000

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As shown in table 3, the results of the McNemar's test revealed that in the control group, the number of women who chose NVD did not change significantly after the study. In this group, only one participant decided to change her choice of delivery route from C-section to NVD. However, in the experimental group, eight women who had previously chosen C-section, decided to undergo NVD after the intervention. The results of the McNemar's test indicated that this pretest-posttest change in the choice of delivery route in the experimental group was statistically significant (P<0.008).

The results of ANCOVA (Table 4) also showed that after adjusting the pretest scores, the difference between the study groups regarding ADQ scores was statistically significant. This finding confirms that group cognitive behavioral training was effective in changing nulliparous women's attitudes and choice of delivery route. The effect size of the intervention as well as statistical power were 0.73 and 1.000 respectively.

Discussion

This study was conducted to measure the effectiveness of group cognitive behavioral training in changing nulliparous women's attitudes and choice of delivery route. The findings showed that the mean of attitude score in the experimental group increased significantly after the study while it did not change significantly in the control group. The difference between the study groups regarding the mean scores of attitude was also significant after the study (P=0.001). Moreover, in the control group, only one woman decided to change her preferred delivery route from C-section to NVD while in the experimental group, this number was equal to eight. The McNemar's test showed that in the control group, pretest-posttest change in the number of women who changed their preferred delivery route from C-section to NVD was not statistically significant while it was significant in the experimental group (P=0.008). The results of the ANCOVA also revealed that the effect size of the independent variable was 0.73, meaning that 73% of changes in ADQ scores were induced by cognitive behavioral training.

Previous studies had also attempted to decrease the rate of C-section through implementing different interventions. For instance, Fathian et al. (2007) conducted a study to evaluate the effects of Behavioral Intention Model education on nulliparous women's NVD-related knowledge, attitude, and performance and found that their intervention significantly reduced the rate of C-section and exerted positive effects on women's knowledge, attitude, performance, intention, and evaluation of results (14). Khorsandi et al. (2008) also found that relaxation training was effective in reducing primpiparous women's fear of childbirth and increasing the rate of NVD (15). Saisto et al. (2006) evaluated the effects of therapeutic group education and reported that after their intervention, 85% of women ignored their request for C-section (16).

JamshidiManesh et al. (2009) noted that prenatal education programs, video presentation, and sharing positive experiences and attitudes of women who have had successful NVD can help pregnant women prefer NVD over C-section (17). Shahraki Sanavi et al. (2012) employed personal education (an educational package) and group education (an educational package as well as group discussion sessions) for encouraging pregnant women to undergo NVD. Their findings revealed that both educational methods were equally effective in enhancing women' s knowledge while the direct educational method had more positive effects on women's attitudes and perceived controlled behavior and greatly reinforced their NVD-related behaviors (18). TofighiNiaki et al. (2010) also undertook a study to investigate the effects of prenatal education on primiparous women's knowledge and attitude and found that women's knowledge and attitude were improved significantly after the study (19). All these studies confirm the effectiveness of educational interventions in reducing the rate of C-section.

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However, contrary to our findings, Toghyani et al. (2008) found that their educational program had no significant effect on pregnant women's attitudes (20). Ryding et al. (2003) also noted that prenatal education was not effective in enhancing women's knowledge and encouraging them to undergo NVD (21). This contradiction can be attributed to the contents of educations in that our intervention actively involved the participants and affected both cognition and behavior.

As pregnant women have fear of childbirth and negative attitude to NVD and also are affected by others' talks about the simplicity of C-section, healthcare professionals can adopt effective educational techniques for helping them choose NVD.

Conclusion

This study showed that group cognitive behavioral training positively affected nulliparous women's attitudes and choice of NVD. The participating women fostered a more positive attitude to NVD and a greater number of them chose to undergo it. Consequently, group cognitive behavioral training is recommended for changing pregnant women's attitudes to NVD and maximizing the likelihood of choosing it among them.

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