

The Effect of Motivational Interviewing on Self-Efficacy and Decision-Making about Type of Delivery in Primigravid Women: A Randomized Clinical Trial

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ABSTRACT

Background: Childbirth self-efficacy is one of the most important factors affecting pregnant women's decision about the type of delivery. Low childbirth self-efficacy can lead to unnecessary cesarean sections (CS). **Objective:** This study aimed to examine the effectiveness of motivational interviewing (MI) on self-efficacy and the decision about the type of delivery in primigravid women requesting elective CS. **Methods:** A randomized controlled trial was conducted on 120 primigravid women at 28–31 weeks of gestation. The participants were selected through multistage sampling and randomly assigned into an intervention and a control group, each 60. The intervention group received four 90-min sessions of MI, whereas the control group received routine prenatal care. The Childbirth Self-Efficacy Inventory, and the Decision-Making Checklist were used to collect data before and 4 weeks after the intervention. Chi-square, independent-samples *t*-test, and paired *t*-test were used for data analysis. **Results:** The mean baseline childbirth self-efficacy score was 63.68 ± 18.91 in the intervention group and 71.58 ± 25.66 in the control group ($P = 0.57$). The mean score increased significantly in the intervention group at the end of the study ($P = 0.001$), whereas it decreased significantly in the control group ($P = 0.003$). Although all women preferred CS at baseline, 91.7% of the intervention group and 28.3% of the control group applied for normal delivery at the end of the study ($P < 0.001$). **Conclusions:** MI can increase childbirth self-efficacy and can be used by midwives and other health-care providers to encourage pregnant women to choose normal delivery.

KEYWORDS: Cesarean section, Decision-making introduction, Motivational interviewing, Self-efficacy

INTRODUCTION

The increasing rate of unnecessary cesarean sections (CS) is a public health challenge worldwide. In 2010, 25.7% of all deliveries in the world were performed by CS.^[1] In the same year, 50%–65% of all deliveries in Iran were performed through CS, and recently, this rate has increased to about 90% in some private hospitals.^[2] Regardless of medical reasons, some pregnant women prefer CS for nonmedical reasons such as misconceptions, fear of labor pain, and low childbirth self-efficacy. However, CS has several side effects for both mother and baby. Hemorrhage, suture site infection, low Apgar score, and increased neonatal death are

among these side effects.^[3] Therefore, many developed countries are trying to reduce the rate of unnecessary CS. However, in developing countries, the number of unnecessary CS continues to rise.^[4]

Childbirth is one of the most stressful situations in a woman's life, and according to Bandura, self-efficacy is

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the most important prerequisite for coping with stressful conditions^[5] such as childbirth. Self-efficacy is defined as a dynamic cognitive process through which a person evaluates his/her capabilities enough to cope with demanding conditions, including childbirth.^[6] Childbirth self-efficacy refers to a woman's perceived ability to have a successful birth. Women with low childbirth self-efficacy are afraid of harming their babies during childbirth or failing to cope well with labor pain.^[7] A study showed that 56% of pregnant women were worried about the inability to give birth.^[8] Pregnant women's concerns and childbirth self-efficacy largely depend on their expectations, understanding of clinical information, and participation in choosing the type of delivery.^[9] However, most studies show that women lack sufficient knowledge to make informed decisions about antenatal care and delivery. Providing appropriate information and support can increase women's confidence in the decision-making process.^[10] Teaching methodology has been found to have a significant impact on learners' skills, competencies, health behavior choices, and degree of participation in care programs.^[11] Various teaching methods have been used to increase labor self-efficacy; however, the results of the studies are contradictory.^[12] A study examined the effect of prenatal group education on expectant mothers' knowledge and self-efficacy in selecting between CS and normal vaginal delivery (NVD). However, there was no significant difference between the study groups in terms of NVD rates.^[13] Meanwhile, another study found that optimism training during pregnancy was able to reduce the decision to have CS from 43.8% to 15.6%.^[14]

Motivational interviewing (MI) is a short-term, directive, patient-centered counseling style that empowers patients to explore and resolve their own ambivalence and cause positive changes in their behaviors. Through empathetic listening, nonjudgmental guidance, and clarification of discrepancies between actual and ideal behaviors, the MI therapist enhances clients' self-efficacy and helps them achieve higher levels of readiness to change and verbalize the intention to change.^[15] MI has been applied to a variety of behavioral problems, with conflicting results.^[16] A study reported that MI increased pregnant women's awareness and motivation and improved their attitudes toward childbirth preparation classes.^[17] Another study showed the positive impact of MI on enhancing in exclusive breastfeeding.^[18] However, another study found that MI had no greater effect than social skills training on weight loss and self-efficacy in obese adolescents.^[19] Shakiba *et al.* also believe that MI can be a useful tool to change pregnant women's attitude toward unnecessary CS and reducing its rate.^[20] Despite the high rates of unnecessary CS and the associated risks to both mother

and infant, no study has examined the effectiveness of MI on self-efficacy and decision-making about the type of delivery in pregnant women who decided to have CS.

Objectives

This study was conducted to determine the effect of MI on birth self-efficacy and decision-making about the type of delivery in primigravid women requesting elective CS.

METHODS

Study design and participants

A randomized controlled trial was conducted on 120 primigravid women referred to Zahedan Comprehensive Health Services Centers in 2019. Zahedan is the capital of Sistan and Baluchestan province in southeastern Iran. The sample size was estimated using the formula for the comparison of two proportions and findings of a previous study where the ratios of CS in the intervention and control groups were 0.78 and 0.96, respectively.^[21] Then, considering values of $P1 = 0.78$, $P2 = 0.96$, $\alpha = 0.05$, and $\beta = 0.2$, and assuming a potential dropout of 15%, a sample size of 60 was calculated for each group. Then, 120 subjects with inclusion criteria were consecutively selected and randomly allocated into an intervention group ($n = 60$) and a control group ($n = 60$) [Figure 1].

Inclusion criteria were an age of 18–35 years, literacy, gestational age of 28–31 weeks, no midwifery indication for CS, singleton pregnancy, live fetus with cephalic presentation, normal amniotic fluid status and placental position, specific maternal body mass index between 18.5 and 29), no history of infertility, no comorbidities such as cardiovascular diseases, no contraindications for natural delivery (such as a history of hip fracture), and tendency to selective CS. Exclusion criteria included preterm labor, fetal death, symptoms of fetal distress during the study, and absence from more than

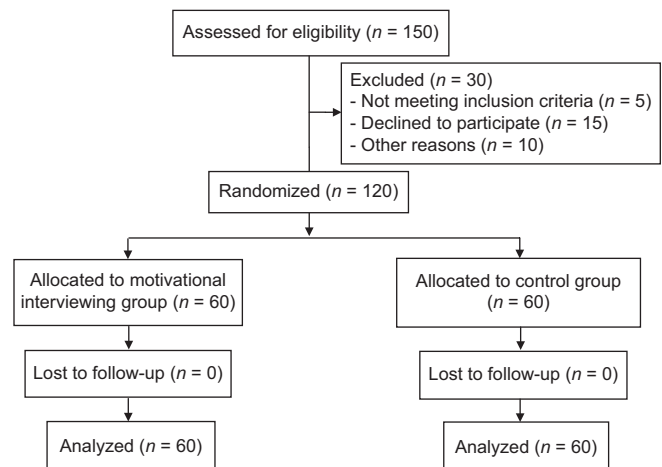


Figure 1: The study of flow diagram

one MI session. The women with a gestational age of 28–31 weeks were selected for two reasons: first, we planned to follow them for 2 months so that they could complete the posttest questionnaire before giving birth. Second, according to routine protocols, prenatal training is provided in the third trimester of pregnancy, and therefore, the control group also received routine training at this time.

A multistage sampling technique was used to recruit the participants. First, the city was divided into five geographic regions: north, south, east, west, and central. Then, two centers were randomly selected in each of the five districts of Zahedan. Based on a lottery, one center in each district was assigned to the intervention group and the other center to the control group, to either receive MI or be treated as usual. This type of allocation could also prevent the dissemination of information among the study groups. Referring to each center, the first researcher prepared a list of primigravid women from the maternal care registries or the integrated health system registries. The names and case numbers of those who were in weeks 28–31 of pregnancy were recorded, their electronic profiles were checked, and those with inclusion criteria were contacted via telephone. The following question was asked of each pregnant woman to assess their tendency for the type of delivery: “What kind of delivery would you prefer if there were no medical prohibitions?” Those who certainly preferred a cesarean delivery were invited to participate in the study, and if agreed, they were scheduled to come to the health center at a specific date and time and attend the MI sessions.

Data collection instruments

A demographic and pregnancy information questionnaire (DPIQ), the Childbirth Self-Efficacy Inventory (CBSEI), and the Decision-Making Checklist (DMC) were used to collect data. The DPIQ had questions on age, work experience, education level, income, spouse’s occupation, and fetal sex. The CBSEI is a self-report scale. It has 62 items in four subscales and two total scores.^[22] All items are scored on a 10-point Likert-type scale from “not at all helpful” to “very helpful.” Khorsandi *et al.* examined and verified the validity and reliability of the Persian version of the CBSEI.^[23] Cronbach’s alpha of the CBSEI in the present study was 0.81. The MDC was prepared by the researchers and contained 1 item about the pregnant woman’s decision regarding the type of delivery. The DPIQ was completed by all participants at the beginning of the study. The DMC and CBSEI were completed by all participants both at baseline and 1 month after the intervention.

Intervention

Participants in the intervention were assigned into small subgroups of 5–10 people. Each subgroup attended four 90-min MI sessions, whereas the control group received only routine prenatal care (i.e., individual education about the advantages and disadvantages of natural childbirth and CS). All MI sessions were facilitated by a postgraduate student in midwifery counseling who was trained and certified by an expert in counseling and reproductive health. In the MI sessions, open and closed questions were asked to assess the current behavior of pregnant women: What do you know about childbirth or would you like to learn more about it? Have you ever tried to get information about childbirth or become ready for childbirth? If you have information about childbirth, what are some of its potential benefits? What makes you ready for childbirth? In addition, concerns, questions, awareness, and stages of behavior change in pregnant women were identified. Mothers were encouraged to set clear and attainable goals for preparing for childbirth. In addition, they were asked to describe their strategies for overcoming barriers to childbirth preparation and to talk about their previous successes (overcoming other barriers to pregnancy). The counselor helped pregnant women prepare for childbirth and express their worries, hesitations, and concerns, and also boosted the women’s inner motivation by building a positive relationship with them. Through empathy, active listening, and acceptance, the facilitator tried to promote the women’s self-efficacy. A summary of the main issues was then discussed, including the benefits of natural childbirth and the aftermaths of CS, as well as relaxation techniques (such as breathing exercises and guided imagery) to reduce labor pain. During the MI sessions, the counselor tried to find an incentive to change the mothers’ beliefs about themselves. The interviewer tried to avoid prejudging the mothers’ previous views, knowledge, and behaviors. She also avoided questioning and marginalizing the pregnant women as much as possible and encouraged them to give birth without imposition, coercion, personal reasoning, or direct persuasion.

Ethical considerations

The Ethics Committee of Zahedan University of Medical Sciences, Zahedan, Iran, approved this study (code: IR.ZAUMS.REC.1397.294). Permission to conduct the study was obtained from the Zahedan Faculty of Nursing and Midwifery and presented to the relevant authorities. The participants were briefed about the study objectives, voluntary participation and withdrawal and were ensured of the confidentiality of their data. Moreover, we strived to protect participants’ rights according to the Declaration of Helsinki. Written informed consent was

obtained from all the participants. The study was also registered at the Iranian Registry of Clinical Trials under the code IRCT20150727023370N5.

Data analysis

Data were analyzed by SPSS 16 software (SPSS Inc. Chicago, IL, USA). Frequencies, percentages, means, and standard deviations were calculated to describe the participants' characteristics and their childbirth preferences. The Kolmogorov–Smirnov test illustrated that numerical variables were normally distributed. The paired *t*-test was used to compare the means in each group, and the independent *t*-test was employed to compare the means between the intervention and control groups. The Chi-square test was used to compare the frequencies of categorical and nominal variables between the two groups. The significance level was set at <0.05 .

RESULTS

The mean age of women in the intervention and control groups was 23.91 ± 4.46 and 25.36 ± 4.89 years, respectively ($P = 0.09$). The two groups also did not differ significantly in their income, occupation, type of pregnancy, and the one who encouraged them for pregnancy [$P > 0.05$; Table 1].

The mean baseline childbirth self-efficacy score was 63.68 ± 18.91 in the intervention group and 71.58 ± 25.66 in the control group ($P = 0.57$). At the end of the study, the mean score increased significantly

in the intervention group ($P < 0.0001$), whereas it decreased significantly in the control group ($P = 0.003$). The mean changes in childbirth self-efficacy scores were 57.35 ± 16.30 and -9.25 ± 23.36 in the intervention and the control groups, respectively [$P < 0.0001$; Table 2]. Although all women preferred CS at baseline, 91.7% and 28.3% of women in the intervention and control groups, respectively, applied for NVD at the end of the study [$P < 0.001$; Table 3].

DISCUSSION

The findings of the present study showed that MI could significantly increase pregnant women's childbirth self-efficacy and decrease their request for CS. These findings are in line with those of Ghazaie *et al.*, who studied the effects of cognitive-behavioral therapy on the fear of childbirth, fear of pain, childbirth self-efficacy, and tendency to CS in nulliparous women.^[24] Mojahed and Navidian also reported that MI could increase pregnant women's self-efficacy to quit hookah smoking.^[25] Another study also showed that MI was successful in promoting exclusive breastfeeding in primiparous mothers.^[26] MI could also increase self-efficacy, and decrease hospital readmissions and complications in adults with heart failure and multimorbidity.^[27] However, some studies have reported that MI failed to improve medication adherence and self-efficacy in disease management in adolescents with asthma^[28] and in those with type II diabetes.^[29] A study also reported that MI alone fails to improve self-efficacy and promote weight loss in overweight and obese adolescents.^[19] The discrepancy between studies regarding the effects of MI might be attributed to several factors, such as the number and duration of MI sessions, differences in study populations, and the severity of the threat perceived by clients. We conducted four 90-min sessions of MI for our participants. Our participants were also pregnant women, who are generally in a highly critical condition due to pregnancy; therefore, they were well motivated to make the right decision to protect themselves and their fetus.^[30] However, studies that reported the ineffectiveness of MI were conducted on overweight, asthmatic, or diabetic adolescents who were not in a critical condition, and the length of the interventions was also shorter. Agarwal *et al.* have also noted that MI is a subject-centered, guided approach focused on discovering the individual's motivations to change behavior and resolving doubts and ambivalence.^[31] Improved self-efficacy was an important outcome of MI in the present study. As reported by Navidian *et al.*, this outcome might be attributed to participation in decision-making, feelings of support and autonomy, and elimination of ambiguities related

Table 1: Between-group comparison of participant's characteristics

Characteristics	Group		P
	Control, n (%)	Intervention, n (%)	
Income			
Inadequate	20 (33.3)	12 (20)	0.09 ^a
Sufficient	40 (66.7)	48 (80)	
Job			
Employed	47 (78.3)	52 (86.7)	0.23 ^a
Housewife	13 (21.7)	8 (13.3)	
Pregnancy type			
Wanted	59 (98.3)	56 (93.3)	0.36 ^b
Unwanted	1 (1.7)	4 (6.7)	
The most important person in decision-making			
Doctor	23 (38.3)	14 (23.3)	0.31 ^a
Husband	19 (31.7)	24 (40)	
Mother	10 (16.7)	10 (16.7)	
Others	8 (13.3)	12 (20)	
Age, mean \pm SD	25.36 \pm 4.89	23.91 \pm 4.46	0.09 ^c

^aChi-square test, ^bFisher's exact test, ^cIndependent-samples *t*-test.

SD: Standard deviation

Table 2: Between- and within-group comparisons of the mean childbirth self-efficacy scores of pregnant women

Groups	Time			P (paired t-test)
	Before the intervention	After the intervention	Changes	
Intervention	63.68 ± 18.91	121.03 ± 17.20	57.35 ± 16.30	<0.0001
Control	71.58 ± 25.66	62.33 ± 22.93	-9.25 ± 23.36	0.003
P (t-test)	0.57	<0.0001	<0.0001	

Data are presented as mean ± SD. SD: Standard deviations

Table 3: The frequency of choosing vaginal delivery and cesarean delivery among pregnant women at the end of the study

Decision on the type of delivery	Group		P (χ ²)
	Intervention, n (%)	Control, n (%)	
Vaginal delivery	55 (91.7)	17 (28.3)	<0.001
Cesarean delivery	5 (8.3)	43 (71.7)	
Total	60 (100)	60 (100)	

to the method of delivery.^[32] MI is based on identifying and mobilizing the client's core values, emotional communication, and enhancing their self-awareness and self-efficacy.^[26] MI is the dialogic approach to change, where the change agent tries to help participants overcome their own ambivalence.^[14] Our results showed that MI can markedly influence NVD preference in pregnant women. Although not on NVD preference, a former study showed that MI successfully increased the propensity for physical activity in obese women.^[33] Asadi *et al.* also examined the effect of education based on rational practice theory on the choice of delivery method in women requesting elective CS. They intervened using a combination of methods, including question-and-answer, movies, lectures, pamphlets, and encouragement from physicians. The results showed that 80% of women in the intervention group intended to give birth naturally after the intervention.^[34] Although our findings were consistent with those of Asadi *et al.*, our intervention was more effective, such that after the intervention, 91.7% of our participants preferred NVD to CS. This finding shows that MI is more effective than other motivational methods. In contrast, Ghaffari *et al.* reported that education based on the health belief model failed to significantly reduce women's inclination toward CS.^[35] MI appears to be more effective than other motivational interventions. MI is a client-centered approach that focuses on the client's information needs, helps them detect their worries, and improves their attitudes. By strengthening intrinsic motives, MI corrects women's misconceptions, eliminates their uncertainties, and directs them to choose a safe delivery method.

The findings of this study are applicable only to urban women using prenatal care services. Different findings may be observed if the study is conducted in other

places due to different cultural practices, norms, and beliefs. One of the limitations of the present study was that it was not possible to blind the participants. We also did not include the woman's spouse or other significant persons (such as gynecologists or service providers) who might influence the choice of delivery method. These people can be included in future studies. Similar studies can also be conducted on multiparous women and those with a history of CS.

CONCLUSIONS

The current study showed that MI is effective in increasing childbirth self-efficacy and reducing the choice of CS by pregnant women. Good communication between pregnant women and healthcare providers has a crucial impact on the choice of delivery type, especially NVD. Midwives and other health-care providers are advised to use MI in the antenatal period to encourage pregnant women to choose NVD. It is recommended to examine the impact of this method on women from different societies with various educational backgrounds and cultures.

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Conflicts of interest

There are no conflicts of interest.

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