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The Effect of Group Counseling with Cognitive-Behavioral Approach on Self-Efficacy of Pregnant Women's Choice of Vaginal Delivery

Farideh Ghasemi [1], Nahid Bolbol-Haghighi [1, *], Zahra Mottaghi [1], Seyed Reza Hosseini [2] and Ahmad Khosravi [3, **]

[1] Department of Midwifery, School of Nursing and Midwifery, Shahroud University of Medical Sciences, Shahroud, Iran
[2] Amirolmonin Hospital, Khodabande Health Network, Zanjan University of Medical Sciences, Zanjan, Iran
[3] Center for Health Related Social and Behavioral Sciences Research, Shahroud University of Medical Sciences, Shahroud, Iran

[*] *Corresponding author*: Nahid Bolbol-Haghighi, Department of Midwifery, School of Nursing and Midwifery, Shahroud University of Medical Sciences, Shahroud, Iran. Email: nbhaghighi@yahoo.com
[**] *Corresponding author*: Ahmad Khosravi, Center for Health Related Social and Behavioral Sciences Research, Shahroud University of Medical Sciences, Shahroud, Iran. Tel: +98-2332374350, Fax: +98-2332365588, Email: khosravi2000us@yahoo.com

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Abstract

Background: Cognitive-behavioral approach has been used to overcome many problems among pregnant women such as fear and anxiety, self-efficacy improvement, depression during pregnancy and after childbirth, traumatic childbirth, as well as stress management.
Objectives: The aim of this study was to determine the effect of cognitive-behavioral group counseling approach on self-efficacy on the choice of a normal vaginal delivery.
Methods: In this randomized clinical trial study, 60 nulliparous pregnant women who had not chosen their method of delivery were randomly assigned into two intervention and control groups. The intervention group received three two-hour sessions of cognitive-behavioral group counseling between the 29 and 34 weeks of pregnancy, with weekly intervals. The control group received routine care provided in the health system. Before the intervention, immediately after the end of counseling and in the last month of pregnancy, self-efficacy questionnaire, with two dimensions of expected outcomes, as well as expected self-efficacy and sources of self-efficacy (outcome of past experiences of mastering a specific situation, vicarious experience provided by others, social persuasion and physiological and affective state (fear and anxiety)) were completed with the help of a collaborating midwife. The collected data were analyzed using a mixed analysis of variance.
Results: The results showed that after the intervention, 76.6% of mothers in the intervention group chose a normal vaginal delivery, however, there was no firm choice in the control group. There was a significant difference between the mean scores of expected outcome and expected self-efficacy of two groups immediately after and in the last month of the pregnancy; the difference increased with the passage of time.
Conclusions: Cognitive-behavioral group counseling during prenatal care can reduce fear and anxiety and increase self-efficacy of nulliparous pregnant women in choosing normal vaginal delivery, which can ultimately reduce the amount of selective caesarean section.

Keywords: Anxiety, Cognitive-Behavioral Counseling, Effectiveness, Fear, Group Counseling, Self-Efficacy, Vaginal Delivery

1. Background

Vaginal delivery is known as the best type of delivery, however, unfortunately, due to the growing popularity of cesarean section, the rate of vaginal delivery has fallen in recent decades (1). Cesarean rate has increased in many countries and this amount is much greater than the amount recommended by the World Health Organization (10% to 15%) (2). A systematic meta-analysis estimated the prevalence of cesarean in Iran as 48% (3). The mothers' request for cesarean section is one of the important reasons for a cesarean section in Iran as well as around the world (4, 5). Due to the high prevalence of cesarean in Iran, it seems necessary to assess the factors, which influence the mothers' choice of delivery method (6).

Self-efficacy is the belief of the individuals' ability to perform a particular behavior in special circumstances (7). Dilk and et al. in their study of the role of self-efficacy refers to it as a key factor in the choice of delivery method (8). In a study by Julia et al. it is stated that research using Bandura's self-efficacy theory has found that women

with high efficacy of labor reported low levels of perceived pain and high levels of delivery satisfaction. Self-efficacy plays an important role in the choice of type of delivery in multiparous women for their following pregnancies (9). Self-efficacy has two different components of expected outcomes and expected self-efficacy (perceived self-efficacy). Expectancy of the outcome depends on the person's belief that a certain behavior leads to a specific result, while expectancy of self-efficacy (perceived self-efficacy) points to the person's belief about his or her ability to succeed in implementing a behavior in particular circumstances, and his amount of control over a particular situation (10). The expected outcome and self-efficacy expectations may not always match in a person due to the fact that a woman may know that a certain behavior has a certain result, however, she may not be sure about her ability to accomplish the behavior (11). Self-efficacy has four sources. The most powerful source is the outcome of past experiences of mastering a specific situation. The additional sources are vicarious experiences provided by others, social persuasion, and physiological and affective state (fear and anxiety) (12).

Birgitta Salomonsson and colleagues, in 2013, reported that improving self-efficacy could be viewed as a part of prenatal care for women with the fear of childbirth. The results of their study show that women with the fear of giving birth have poor self-efficacy and prefer cesarean section to vaginal delivery (11). The results of the study by Dilks and Beal showed that women who choose repeated caesarean for their next deliveries have lower self-efficacy than women who have a vaginal delivery after cesarean section (8). Nulliparous women's knowledge of delivery types is limited to others' experience, birth stories of other women, educational films about birth, or birth training programs (10). Many of these sources of information have been criticized for showing unrealistic images of childbirth (13). Rastegari et al. in 2013, showed that participation in childbirth preparation classes improves the perceived self-efficacy of women (14). Research shows that women, who have low self-efficacy, regard vaginal delivery as something unattainable and they experience an intense fear during pregnancy. Given the importance of self-efficacy in choosing the delivery type, and its role in overcoming delivery fear, it seems necessary to study and determine the self-efficacy of pregnant women so that appropriate educational interventions can be planned to improve self-efficacy and cope with labor (15).

Group counseling is an inter-individual process that focuses on conscious thoughts and behaviors and includes allowed free health functions, realism and catharsis, trust and respect, as well as mutual acceptance and support. Group meetings are useful due to the fact that first, a time is devoted in the group to the concerns of the group members where they can share their concerns, second, people support each other in the group, and third, group members come to the conclusion that they are not alone in having specific problems (16). Identification and responding to the beliefs and attitudes of women during pregnancy is in the focus of international policies (17). The effect of behavioral-cognitive intervention on the promotion of women's self-esteem has been proven in various studies (18). Theorists of cognitive - behavioral approach such as Beck and Ellis believe that the reason is that individual's interpretation of an event has a major impact on his following emotions and behaviors. The first duty of a therapist is to help his or her clients to have the most reasonable and adaptable interpretation of an event and adopt a behavior, which is compatible with the new interpretation. In cognitive-behavioral counseling, Beck and Ellis focus most on behavioral and emotional change through changing beliefs (19).

It seems that childbirth preparation, using cognitive-behavioral counseling is an appropriate method to enhance self-efficacy and reduce the consequences of pregnancy such as a request for cesarean section (20). Cognitive-behavioral approach has been used to overcome many problems among pregnant women such as fear and anxiety, self-efficacy improvement, depression during pregnancy and after childbirth, traumatic childbirth, stress management, etc. (21). However, no study has been done on the self-efficacy of women for normal vaginal delivery through identifying and modifying efficacy-related beliefs. The aim of this study was to determine the effect of cognitive-behavioral group counseling approach on self-efficacy on choice of normal vaginal delivery.

2. Objectives

This study aimed to determine the effect of the cognitive-behavioral group counseling approach on the self-efficacy of women for choosing normal vaginal delivery.

3. Materials and Methods

In this randomized clinical trial, 60 nulliparous mothers who referred to health care centers in Khodabande in 2015 and had not chosen their delivery type were selected based on the inclusion and exclusion criteria. After the purpose of the study was explained to them and informed consents were obtained from them, based on blocks of four they were assigned into two intervention and control groups. The study was examined and approved by the

Ethics Committee of Shahroud University of Medical Sciences with the code of IR.SHMU.REC.1394.41 and was registered by the Iranian Clinical Trial Registry with the code of IRCT2015063022983N1.

3.1. Inclusion and Exclusion Criteria

nulliparous women with no history of abortion, still birth or live birth, no choice of delivery type upon entering the study, no known fetal illnesses reported by ultrasound, recipient of services from health centers or private medical offices, married, no primary infertility, wanted pregnancy, age 15 to 49 years, placing in the second trimester of pregnancy at the beginning of the study, and singleton pregnancy. Exclusion criteria included heart, pulmonary, renal, hepatic, hematologic and endocrine diseases, hypertension, diabetes, reproductive disorders, sexual disorders, thyroid disease and a history of mental illness in the past or at present, such as depression, anxiety, schizophrenia, bipolar disorder, and obsessive-compulsion and so on.

3.2. Intervention

After randomly assigning people to control and intervention groups, counseling sessions were determined at their convenience and they were contacted and asked to participate in counseling meetings in prenatal clinics of Khodabande Hospital. For this group of mothers between gestational weeks of 29 and 34, in accordance with the standards of group counseling three two-hour sessions were held each week and each group consisted of 6 to 10 people. The control group did not receive counseling with cognitive-behavioral approach and the mothers only received routine health care that were present with health care centers in rural and urban areas. Counseling sessions were held by a psychiatrist and an experienced midwife who had passed a two-year course on midwifery counseling. The following is the content of counseling sessions.

The first session included welcome, introduction and familiarization of participating together, emphasizing confidentiality of issues raised in the consultation sessions, informing the participants of the structure of counseling (including the number of sessions, duration and location of meetings, etc.,), training the participants in the cognitive-behavioral approach (triangle), providing explanations regarding efficacy in the selection and delivery, cognitive assessment participants of the discussion on vaginal childbirth, vaginal childbirth benefits and advantages and disadvantages of cesarean section through brainstorming, using the technique of how thoughts create feelings, grading physiological reactions (emotional) and the belief in the idea of vaginal childbirth, categorization of the cognitive deviations (in the form of four sources of efficacy), assigning homework, and dismissing the meeting.

The structure of the third session: Welcome, use of supporting and rejecting evidence for cognitions and beliefs on different types of delivery and eliminating misunderstandings by the counselor, evaluation of concerns (identification of concerns, the advantages and disadvantages of concerns), improving pain management and training relaxation skills with breathing techniques, checking homework of the previous session, assigning homework, dismissing the meeting.

The structure of the third session: Welcome, reviewing homework, solving the participants' problems of the above-mentioned cognitive exercise, practicing relaxation skills along with breathing techniques, individual assessment of her abilities, conclusion, dismissing the session, and completing the questionnaire.

3.3. Self-Efficacy Questionnaire

The questionnaire used in the study was designed using questionnaires of efficacy, beliefs and knowledge, as well as interviews with experts and a review of the theses on delivery self-efficacy (9, 22, 23); in addition, the reliability and its content and face validity were confirmed through expert judgment. In examining content validity, the clarity, simplicity, relevance, and comprehensiveness of the items were examined by 10 pregnant women, a psychiatrist, a methodologist, and four faculty members of the midwifery department. Relevancy of the questionnaire was 76.90%, while clarity of the questionnaire, according to experts' views, was 81.04%.

The reliability was examined with Cronbach's alpha coefficient. For the 20 questions of the expected outcome, it was to 0.96 and for 27 questions of expected self-efficacy it was 0.94. The questionnaire was administered to the participants once before the counseling sessions, then immediately after the end of counseling sessions, and for the third time in the last month of pregnancy (weeks 37 to 40). The questionnaire includes questions related to self-efficacy, questions related to outcome expectations (20 questions), and questions related to expected self-efficacy (27 questions). Questions on demographic features and medical and midwifery history were completed by the counselor and questions of the self-efficacy were completed by the mothers. The physiological reactions such as fear and anxiety as resources of self-efficacy were measured with a 10-point Likert scale.

The effect size was estimated from study of Khorsandi et al. (24) and using a significance level of 0.05, a power of 80%, and a dropout rate of 10%. A sample size of 30 per group (total = 60) to determine the intervention effect was calculated. Data were analyzed using SPSS software

through t-tests and Chi-Square and mixed repeated measure ANOVA. The significance level was set at 0.05.

4. Results

In this randomized clinical trial, 60 nulliparous mothers who had not chosen their delivery type were assigned to two groups and were studied for the effect of cognitive behavioral counseling on self-efficacy of delivery type. The average age of mothers in the study was to 26.3 ± 4.2. Demographic features of the mothers in intervention and control groups are presented in Table 1. The table shows that the two groups were not significantly different in terms of age, education, occupation, gestational age, and behavioral intention.

The results of this study show that after consulting 23 patients in the intervention group (76.7%) determined vaginal delivery as their choice of delivery type, however, in the control group, no one mentioned vaginal delivery as the certain decision. The results show that the intervention significantly increased behavioral intention in the choice of vaginal delivery.

Sources of self-efficacy included personal experience, physiological reactions (fear, anxiety), verbal persuasion, and vicarious experience of others. Since nulliparous mothers were studied, personal experience of the participants was not examined. Regarding the physiological reactions of fear and anxiety, Table 2 shows that before the intervention there was no significant difference between mean scores of fear and mean anxiety of intervention and control groups. However, immediately after and in the last month of pregnancy, the mean score of the intervention group in fear and anxiety significantly decreased compared to control group.

Books and media individuals were reported in this study as the most important sources of verbal persuasion. The results showed that after the intervention, 6 individuals in the intervention group and one person in the control group compared to pre-intervention chose the book as a source of self-efficacy (P = 0.044). Regarding the media, 13 people in the intervention group and 6 people in the control group chose media as a source of efficacy, which shows the significant effect of the intervention. Since the participants were nulliparous and vicarious experience cannot be treated through intervention, the two factors were investigated as predicting factors at the beginning of the study and the result showed no difference.

The results of mixed repeated measures ANOVA showed that with the passage of time there is a significant difference between the mean expected outcome between the two groups (interaction between time and group). The results also showed statistically significant differences between the two groups during two time periods (immediately and in the last month of pregnancy after intervention).

The results in Table 3 also showed that with the passage of time the mean expected self-efficacy scores between the two groups were significantly different and Green House-Geisser test showed the interaction between time and group. The results showed statistically significant differences between mean scores of expected self-efficacy in two groups at three-time intervals (before, immediately after, and in the last month of pregnancy) (P = 0.005)

5. Discussion

It is currently believed that pregnancy and delivery are totally physiological processes and most of the measures of the Department of Maternal Health focus on awareness raising of the mothers so that through training and education, improvement of the conditions and muscular, neural exercises they can maintain their physical strength and reduce pregnancy complications and thus, have a pleasant physiological experience.

Among those participating in the research, at baseline, no one cited vaginal delivery as the definitive choice, nonetheless, after consultation, 23 patients participating in the intervention group definitely chose vaginal delivery, however, none of the participants in the control group had a definitive decision for vaginal delivery. The findings of this study are consistent with results of a study by Khorsandi et al. (24), which reported that birth preparation using cognitive-behavioral skills as an appropriate method for reducing the consequences of pregnancy such as a request for caesarean section. The findings of the study are also in line with the results of the study by Shahraki Sanavi et al. (25), which indicated that training using the theory of planned behavior significantly increased the choice vaginal delivery by the study population. In a study by Sadat Asadi et al. (26), after the intervention more women wanted to have vaginal delivery. The results of the study by Kanani et al. also show that the expected outcome, the efficacy and women's attitudes towards vaginal delivery influences their willingness to choose vaginal childbirth (27). In addition, in another study it was demonstrated that group Psycho-education significantly increased the mothers' request for vaginal delivery in mothers who were afraid of delivery (28).

In the factors of this study, which influenced women's self-efficacy in choosing vaginal delivery, including fear and anxiety, were assessed through self-report and the results showed that the intervention had influenced fear and

Table 1. Demographic and Obstetric Variables of Intervention and Control Groups Before Intervention[a]

Variable	Intervention Group	Control Group	Test and P Value
Mother's age mean	25.8 ± 4.8	26.8 ± 3.4	T= - 0.93, P = 0.35
Mother's education, %			χ^2 = 0.07, P = 0.78
12 years or less	19 (63.3)	20 (66.7)	
More than 12 years	11 (36.7)	10 (33.3)	
Mother's job (housewife, %)	26 (86.7)	30 (100.0)	Fisher test, P = 0.11
Gestational age mean, week	26.7 (1.0)	26.4 (1.1)	T = 1.1, P = 0.27
Behavioral intention			χ^2 = 7.356, P = 0.061
Probably normal	7 (23.3)	4 (13.3)	
Probably caesarean	6 (20.0)	1 (3.3)	
Certainly normal	0	0	
Certainly caesarean	1 (3.3)	0	
Not chosen	16 (53.3)	25 (83.3)	

[a]Values are presented as mean ± SD or No. (%).

Table 2. Comparison Between Mean Scores of Sources of Self-Efficacy (Physiological Reactions) of Mothers in Two Groups Before Intervention, Immediately After Intervention and in the Last Month of Pregnancy

Time	Intervention Group[a]	Control Group[a]	T-Test	P
Fear				
Before intervention	8.6 ± 1.27	8.23 ± 1.07	1.205	0.233
Immediately after intervention	3.53 ± 1.0	8.87 ± 1.74	-11.82	< 0.001
In the last month of pregnancy	3.27 ± 1.07	7.47 ± 2.33	-9.051	< 0.001
Anxiety				
Before intervention	8.2 ± 1.73	7.23 ± 1.72	2.173	0.64
Immediately after intervention	3.1 ± 1.15	7.13 ± 2.19	-8.913	< 0.001
In the last month of pregnancy	3.0 ± 1.14	6.73 ± 2.91	-6.536	< 0.001

[a]Values are presented as mean ± SD.

Table 3. Comparison of the Mean Scores of Expected Outcome and Expected Self-Efficacy in the Two Groups in Three Time Intervals Using a Mixed ANOVA

Outcome	Intervention[a]	Control[a]	P Value
Expected outcome			F^b = 154.7, P < 0.001
Before intervention	99.5 ± 19.3	112.1 ± 22.4	
Immediately after intervention	177.7 ± 19.7	117.7 ± 25.9	
In the last month of pregnancy	178.5 ± 10.7	121.9 ± 32.2	
Expected self-efficacy			F^b = 116.3, P < 0.001
Before intervention	127.7 ± 22.5	141.1 ± 24.6	
Immediately after intervention	241.9 ± 24.0	151.2 ± 32.0	
In the last month of pregnancy	240.6 ± 24.2	161.9 ± 47.7	

[a]Values are presented as mean ± SD.
[b]Greenhouse Geisser test for interaction between time and group.

anxiety as two influencing factors on physiological reactions to delivery. The study is also consistent with Atghaei and Nouhi (29), which concluded that training and awareness raising of mothers can reduce the mothers' fear and

anxiety, which resulted from misconceptions of labor and can encourage them to have a natural delivery. The results also rally with the findings of Imani et al. (30) which concluded that cognitive-behavioral therapy reduced anxiety of nulliparous natural childbirth and its effect remains after delivery. Taheri maintains that planned education of pregnant women for controlling fear and anxiety can lead to increased skills and create confidence in natural delivery (31). The study by Salomonsson also indicated that self-efficacy is a base for coping with fear and self-efficacy theory can be an acceptable solution for overcoming fear. Therefore, the concept of self-efficacy should be presented by midwives to mothers who are afraid of delivery over the pregnancy health care period (11, 32). A study by Delaram and Soltanpour also showed that counseling in the third trimester of pregnancy could reduce anxiety in pregnant women upon delivery (33). In a qualitative study in 2015, Nieminen et al. concluded that programs such as ICBT (Internet based cognitive behavioral therapy) in women with severe fear of childbirth could change the negative attitudes of women towards the upcoming delivery to highly positive attitude. In addition, it helped mothers form positive and realistic expectations about themselves, their spouses, and their birth attendants (34).

Reviewing the effective sources of verbal persuasion to vaginal delivery as the second source of self-efficacy, intervention led to the increase in using books and media; no significant change was observed in other sources. The results of our study is consistent with the results of Besharati et al. (35), which reported the effect of education on encouraging natural delivery. Noticing the results of the control group, although an acceptable number of participants used the media as a verbal persuasion, it had no effect on their self-efficacy. Therefore, it is recommended that media programs on the choice of delivery type be increased and available to mothers as home displays, mothers be encouraged more to use relevant books, and these books be available in the libraries of health care. Moreover, training CDs related to the type of delivery need to be available to mothers.

To investigate the effects of cognitive-behavioral group counseling on self-efficacy of the choice of delivery type, two dimensions of self-efficacy, including expected outcomes and expected self-efficacy at three intervals before, immediately after intervention, and in the last month of pregnancy were investigated. The results showed that the intervention caused a significant increase in the mean scores of the expected outcome and efficacy expectations immediately after the intervention and in the last month of pregnancy. Since no similar study has been done no comparison can be made, however, in a study by Amidi-mazaheri et al. (36), the self-efficacy has been referred to as a factor, which can influence the willingness of mothers toward vaginal delivery and coping behavior toward labor. A study by Vasegh Rahimparvar et al. (37) also indicated the impact of computer educational programs on the self-efficacy of pregnant women to cope with labor. The findings of a study by Taheri et al. (38), show that self-efficacy education is effective in encouraging mothers to choose natural delivery and it has recommended the development and implementation of curriculums for increasing self-efficacy in pregnant women. Among the tasks that measured the effectiveness of CBT in women is a study by Ammerman, the result of which showed that cognitive behavioral therapy at home is effective in the treatment of depressed mothers (39). The findings of Waite et al. also showed that short-term cognitive behavioral therapy can be effective in the treatment of low self-esteem (40). Pearson et al. also found that cognitive behavioral approach in the process of maternal depression during pregnancy has been able to improve the attentional processes of depressed mothers to distress processes in infants before birth (41). The findings of Mahmoudjanlou shows that the cognitive behavior group intervention was effective in controlling blood pressure and reducing during pregnancy stress in pregnant women before pregnancy (42). Cho et al. (43) also found that cognitive and behavioral interventions can be effective in preventing postpartum depression.

5.1. Strengths and Limitation

This was a full-randomized clinical trial; however, due to the nature of the provided counseling, the blinding of patients was not done well. We used a fully trained midwife to conduct the intervention. This study is the first study on the improvement of pregnant women's self-efficacy in Iran. We did not gather any data after the delivery as an outcome of the study. Follow up of women after counseling until delivery and comparison of intention and delivery outcome can improve the validity of this study.

5.2. Conclusion

According to the results, it can be inferred that currently, the choice of the delivery method as well as counseling on this regard have no special place in prenatal care and there is a huge void in this area. Therefore, we need to do counseling to improve the self-efficacy as well as self-esteem of pregnant women so that they choose vaginal delivery; the consultant midwives can be a good option for solving this problem, to help reduce the caesarean section, and develop appropriate healthy behavior in pregnant women. Cognitive-behavioral approach counseling by trained personnel in health centers is suggested to strengthen the efficacy of pregnant women.

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Footnotes

Authors' Contribution: Farideh Ghasemi participated in designing the evaluation and interpretation of data, statistical analysis, implementation of intervention, and helped draft and revise the manuscript. Nahid Bolbolhaghighi conceived and designed the evaluation, interpreted the data, and drafted the manuscript. Zahra Mottaghi was the advisor of the thesis. Seyed Reza Hosseini participated in designing, implementation of intervention, the evaluation and interpretation of data, and helped draft and revise the manuscript. Ahmad Khosravi participated in designing, the evaluation and interpretation of data, performed parts of the statistical analysis, and helped draft and revise the manuscript. All authors read and approved the final manuscript.

Declaration of Interest: Standards authors Farideh Ghasemi, Nahid Bolbol Haghighi, Zahra Mottaghi, Seyed Reza Hosseini, Ahmad Khosravi, declare that they have no conflicts of interests to disclose.

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Ethical Approval: The authors have adhered to the appropriate ethical standards; all procedures performed in the study involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. The study was approved by the Ethical Committee of the Shahroud University of Medical Sciences (IR.SHMU.REC.1394.41)

Informed Consent: A written Informed consent was obtained from all individual participants included in the study.

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