The Effect of Beck's Cognitive Therapy On Anxiety and Fear of Childbirth: A Randomized Controlled Trial

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ARTICLE INFO	ABSTRACT
Article type: Original article *Article History:* Received: 30-Dec-2021 Accepted: 14-Mar-2022 *Key words:* Anxiety Fear of Childbirth Beck'S Group Cognitive Therapy Childbirth Experience Childbirth Satisfaction	***Background & aim:*** The prevalence of anxiety and fear of childbirth (FOC) during pregnancy is high. This study aimed to measure the effect of group counseling with Beck's cognitive therapy on anxiety and FOC in primiparous women. ***Methods:*** This randomized controlled trial was conducted on 68 primiparous women who referred to the health centers of Ardabil, Iran. The participants were randomly assigned to the counseling and control groups. The intervention group participated in six, 60-minute weekly sessions of cognitive group counseling. All women completed the Spielberger State-Trait Anxiety Inventory (STAI) before the intervention and during the active phase of labor. A questionnaire for the measurement of fear of childbirth (W-DEQ version A) was completed before the intervention, at the 36th week, and also two hours after delivery (W-DEQ version B). Mackey Childbirth Satisfaction Rating (MCSR) and childbirth experience questionnaire were completed 12 to 24 hours after delivery. Data were analyzed using Chi-square, independent t-test, ANCOVA, and repeated measures ANOVA. ***Results:*** There was no statistically significant difference between the two groups in terms of mean scores of state (P=0.842) and trait (P=0.859) anxiety during labor, FOC after the intervention (P=0.566), childbirth experience (P=0.400), and childbirth satisfaction (P=0.828). Also, there was no statistically significant difference in the frequency of vaginal delivery between the two groups (P=0.856). ***Conclusion:*** The findings of the present study showed that Beck's group cognitive therapy was not effective in reduction of anxiety and FOC. Therefore, it is recommended to do more research in this regard in the future.

Introduction

Childbirth is a painful process that may potentially threaten the mothers' life. Pregnancy is a stressful and traumatic period in which women's physical, psychological and social conditions will change. Therefore, antenatal common mental disorders such as maternal depression and anxiety can develop during pregnancy (1, 2). There is evidence that psychological factors, maternal anxiety, and fear may complicate the delivery process. Anxiety is a response to acute predictable threats and occurs during the process of extrinsically and intrinsically stimuli. It may cause physical, emotional, cognitive, or behavioral symptoms (3). Anxiety has a detrimental effect on childbirth. Pregnant women with high anxiety scores experience more labor pain (4). According to international data, the prevalence

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of psychological disorders in women is twice than men (5). It affects approximately 10% of pregnant women (6).

The Fear of childbirth (FOC) during pregnancy is a negative feeling which is associated with anxiety and stress. Factors such as women's perception of pregnancy risks, the FOC (7), age, low marital satisfaction (8), maternal literacy, poor economic status, poor relationship with spouse, and physical violence by spouse are strongly associated with development of antenatal anxiety (9). Many women, especially primiparous, experience fear of natural delivery because they don't know what happen during the labor process (10). In general, this fear manifesting as anxiety, nightmares, and physical symptoms, often lead to request for elective cesarean section (11). Severe FOC sometimes leads to avoid or deny pregnancy (12). According to a systematic review, prevalence of FOC in different countries varied from 6.3 to 14.8% (13). Negative information about childbirth and previous negative experiences about labor may enhance FOC (14). Pain is the most common reason for FOC (15). Indeed, FOC leads to negative childbirth experience and feelings of dissatisfaction (16). Studies have shown that dissatisfaction with delivery leads to request for cesarean section in subsequent delivery that increases maternal and neonatal risks and imposes unnecessary costs on individuals and governments (6, 17). Moreover, maternal satisfaction of delivery care increases self-confidence and positive expectation for future childbirth (13).

Various methods such as music therapy and relaxation (18), cognitive behavioral therapy (CBT) (19), massage therapy (20), and midwives' counseling (21) have been used to reduce fear or anxiety. Some studies evaluated fear of childbirth or anxiety and none of them assessed both of these variables (18-21). Also, group counseling was not used in these studies. However, women benefitted from group psycho-education (22). Also, no study has evaluated the effect of Beck's group cognitive therapy on anxiety or fear of childbirth. While as, the emotional and behavioral responses are usually triggered by cognitive processes. Meanwhile thoughts, beliefs, and other cognitive processes influence mood and emotion (23).

Beck's group cognitive therapy affects the patient's thoughts and may be an option to treat FOC. The group cognitive therapy is a problem-based approach which plays a critical role in reducing negative thoughts and feelings in pregnant women before and during childbirth (18). The group cognitive therapy is a psycho-social intervention that is used to identify negative thoughts and help the clients to eliminate problematic thoughts (19). Considering the critical role of anxiety and fear of childbirth on mother's mental well-being, birth experience and choice of cesarean section by women (25), this study was performed aimed to evaluate the effects of *Beck's* cognitive therapy on reducing anxiety and FOC in primiparous women.

Materials and Methods

CONSORT 2010 guidelines were adhered for reporting of this randomised controled trial. The trial was registered in Iranian Registry of Clinical Trials under code of IRCT20120718010324N43; registered 10 March 2018 (Site: https://en .irct.ir/ user/t rial/10817/view). The present study which was performed on human subjects was completely complied 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. Ethical approval was obtained from the ethics committee of Tabriz University of Medical Sciences (IR.TBZMED.REC.1397.837) and Ardabil University of Medical Sciences (Ethics Code: IR.ARUMS.REC.1396.232).
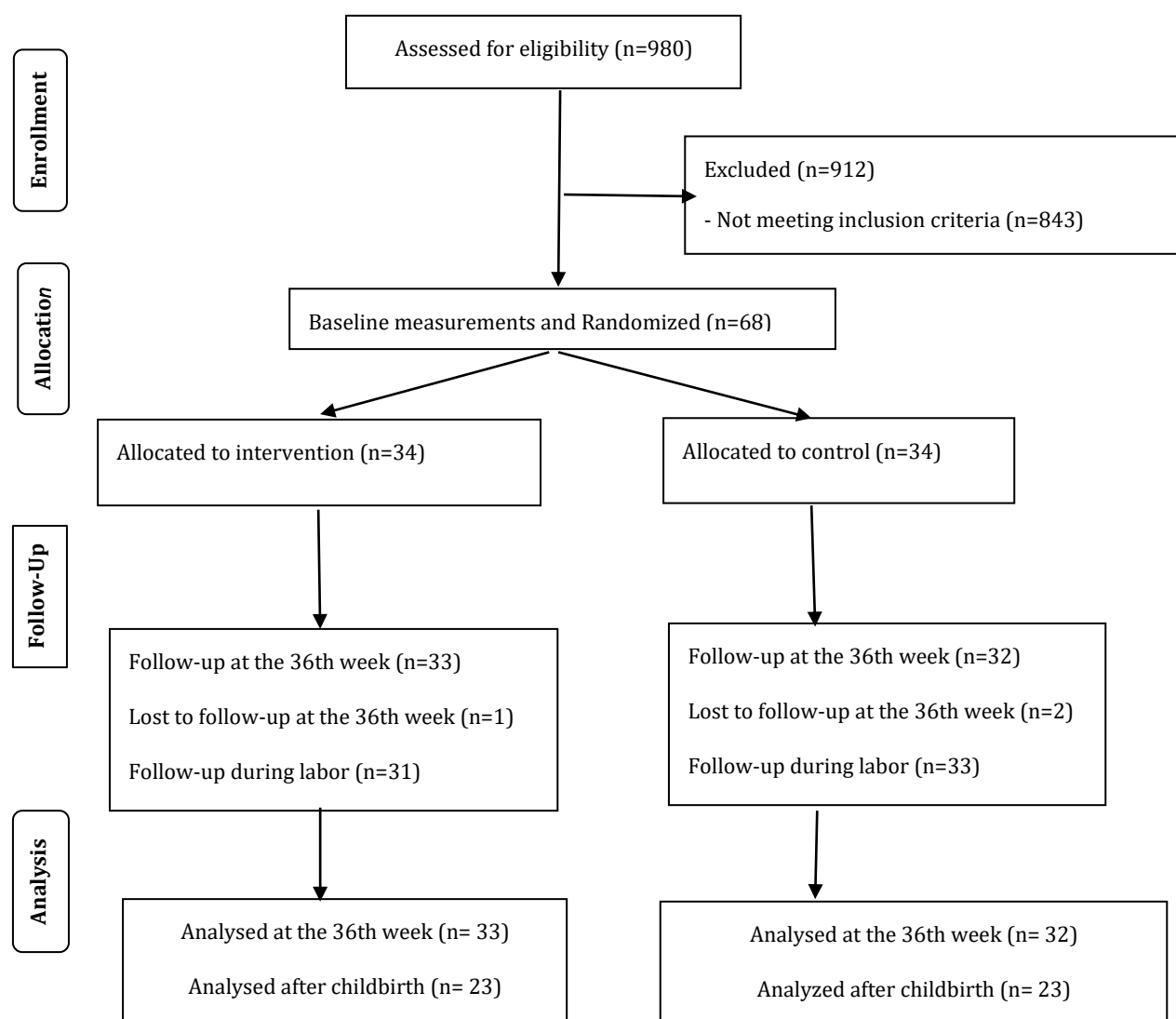
This randomized controlled trial with two parallel sides was performed on 68 pregnant women referred to the health centers in Ardabil, Iran, in 2018. Only the data analyzer was blinded to the intervention received by the study groups. The inclusion criteria were: primiparous pregnant women, age 18 to 35 years (pregnancy below 18 and above 35 years are high risk), gestational age 24–30 weeks, being *literate*, no history of infertility, depression score < 12 based on the Edinburgh questionnaire, no history of psychological disorders and gestational diabetes, no history of taking antidepressant medications, and no history of the placenta and amniotic fluid

disorders. The exclusion criteria were: unplanned pregnancy, maternal or fetal indications for cesarean delivery, cardiovascular diseases, and hypertension.

The sample size was calculated based on the scores of both FOC and anxiety using G-Power software, assuming a 15% reduction in the scores of both variables, with a test power of 95% and a 10% sample loss. Based on FOC data of the study by Khorsandi et al., m1=39.35 (The mean score of FOC before the intervention),

m2=33.45 (The mean score of FOC after the intervention), sd1=sd2=6.96, α=0.05) was calculated to be 31 and regarding the anxiety variable (m1=61.45 (The mean score of anxiety before the intervention), m2=52.19 (The mean score of anxiety after intervention) sd1=sd2=8.8, α=0.05) was calculated to be 25 (26). The sample size was calculated based on the fear of childbirth more than of other variables, considering a 10% attrition rate, the final sample size was calculated as 34 cases.

Figure 1. Flowchart of the study

The Ethics Committee of Tabriz University of Medical Sciences approved the study, and then the study was registered in the Iranian Registry of Clinical Trials site. Then, sampling was performed in six health care centers in Ardabil, Iran. During the sampling process, the researcher used the Integrated Health System to inquire about the information of pregnant mothers at 24-30 gestational weeks through and then contacted the mothers who had inclusion criteria. Also, the researcher briefed the research plan and its objectives by phone call. If the mothers were eligible and willing to participate in the study, they were asked to attend the health center at a determined time. When the mothers referred to the health centers, they were given comprehensive data including the goals, importance, and benefits of participation in the study, as well as the stages of the implementation of the research. The Edinburgh Depression Inventory was completed by all women in the first interview (n= 980). The women with depression scores >13 were excluded from the study and referred to a psychiatrist (n=142). The informed written consent was obtained from those pregnant women with depression scores ≤12 who met the inclusion criteria (n= 68). Then, the socio-demographic characteristics questionnaire, the W-DEQ version A questionnaire, and the Spielberger state-trait anxiety inventory (STAI) were completed by the participants. The W-DEQ version A was completed at gestational age of 36 weeks (27). The participants were followed up until delivery; they were asked to call the researcher when they referred to the hospital for delivery. After the participants' call, the researcher immediately attended the hospital and the STAI questionnaire was completed in the active phase of labor (28-30). Then, 2 hours after delivery, they completed the W-DEQ version B (31), childbirth experience questionnaire, and Mackey childbirth satisfaction Rating at 12 to 24 hours after delivery. All the questionnaires were completed through interview with participants.

Among 980 pregnant women referred to the health care centers for antenatal checkup, 912 ineligible women were excluded from the study. The reasons for exclusion included gestational age < 24 weeks and > 30 weeks (n= 418), age less than 18 and more than 35 years, depression score ≥13 (n= 142), multiparity (n= 202), a history of infertility and ectopic pregnancy (n= 18), diabetes mellitus and hypertension (n= 8), being illiterate (n= 10), and not willing to participate in the study (n= 69). A total of 68 pregnant women were assigned to the counseling and control groups (n=34 in each group). In the follow-ups, after six consecutive weeks of counseling, data from 33 participants in the counseling group and 31 in the control group were analyzed. There was only one loss of participants in the counseling group (due to family problems) and three losses of participants in the control group (due to family problems and unwillingness to continue participating in the study) (Figure 1).

Women were randomly assigned to the intervention (counseling group) or control groups using the website www.random.org. The type of intervention was written on a sheet of paper and sealed in matte envelopes to conceal the allocation. A person who was not involved in the sampling and data collection performed random allocation.

In the present study, Beck's group cognitive therapy (24) was used in the intervention group. Accordingly, counseling was implemented one time a week for six consecutive weeks in a small group setting (3-6 women). The first author (MSc in Midwifery counseling) under supervision of second author (Psychologist) and fourth author (Psychiatrist) implemented the intervention. In all sessions, the first author focused on counseling skills to communicate with the participants. The sessions of counseling were conducted in a special room of the health care centers.

The framework and content of group cognitive therapy sessions were designed and executed based on *Beck's* group cognitive therapy. The counseling protocol was prepared by the first author (NT) under supervision of second author (KE, Psychologist) and fourth author (MNM, Psychiatrist). The content validity of the protocol was confirmed by all members of the research team. A complete description of the content of the consultation sessions was presented in Table 1.

Table 1. Summary of the content of the counseling sessions

Sessions	Content	Homework
First	Introduction and explaining the study structure (number of counseling sessions, duration, and place). Arranging the next sessions. Explaining about benefits of natural childbirth and Beck's cognitive therapy.	Note disturbing thoughts about childbirth and their attitudes
Second	Reviewing the previous session homework. Giving information and responding to possible cognitive distortions. Explaining the anxiety and fear of childbirth. Asking about signs of fear and anxiety of clients and remembering a scary situation and paying attention to their symptoms. Teaching relaxation and mental techniques to control anxiety.	Determine their anxiety and how to dealing with anxiety. Write down feelings in the case of stressful situations.
Third	Reviewing the last session and receiving group feedback. Explain how thoughts and feelings influence behavior through Beck's Cognitive Therapy Triangle. Training to manage anxiety and fear thoughts through the identification of cognitive distortions. Training to identify irrational thoughts and decentralization of thoughts.	Labeling the cognitive distortions.
Forth	Reviewing the last session and homework. Expressing feelings and attitudes about delivery using the Socratic method and challenging the client's dysfunctional thinking. Educating to fill out the advantage and disadvantage sheets. Discussing the advantages and disadvantages of natural and cesarean deliveries to recognize the best delivery type.	Record your dysfunctional thoughts
Fifth	Reviewing the last session homework. Identifying the negative self-talk of clients about anxiety and fear of childbirth and learning to replace it with positive self-talk. Learning how to stop negative and anxious thoughts through enjoyable activities such as listening to music and talking to her baby.	Replacing positive self-talk with negative self-talk and practice stopping negative thoughts.
Sixth	Reviewing the session homework. Showing a normal childbirth video to the clients. Emphasis on continuing cognitive therapy after completion of the study.	Practice and repetition of training given to reduce anxiety and fear symptoms.

To collect data, at first written informed consent was taken from all the participants before entry to the study. Permission was also obtained from the health centers involved in this study. In the first session, a summary of the study was explained to the participants. The content of group counseling sessions was: introduction, set a meeting agenda in each session, expressing the study's goals, listening to the clients, paying attention to mental problems and conflicts, explaining about the delivery process and its stages, anxiety and fear of childbirth, its physical and psychological consequences and the relationship between FOC and anxiety, cognitive-behavioral techniques such as relaxation, Socratic dialogue, thoughts,

positively self-talking and retrieving content in each session and then re-test at the last session.

Data was collected by the socio-demographic characteristics questionnaire, the Edinburgh Depression Inventory, the W-DEQ versions A and B, and STAI. The STAI and the W-DEQ version A before the intervention, the W-DEQ version A were completed again at 36th weeks of gestation. The STAI were again completed at the active phase of labor, the Childbirth Experience Questionnaire, and the Mackey Childbirth Satisfaction Rating at 12 to 24 hours after delivery through interviews.

The socio-demographic characteristics questionnaire included the questions to extract the participant's information. These questions were related to personal data (age, job,

educational level, family income, fetus gender) and other questions such as husband's satisfaction of fetus gender, recent childbirth in relatives, etc.

Edinburgh Postnatal Depression Scale (EPDS) was used to exclude depressed women from this study. The EPDS is a 10-item self- report questionnaire to screen depressive symptoms in the women. The items of this questionnaire are measured on a Likert response scale (1 to 4). A score > 13 (maximum score 30) was considered probable depression. Three items (items one, two, and four) are scored from 0 to 3, and seven items (three, five, six, seven, eight, nine, and ten) are scored from 3 to 0. The validity and reliability of the Persian version of EPDS were evaluated by the study of Ahmadi Kani Golzar et al. (32).

The STAI is a 40-item self-reporting questionnaire that measures situational (state) and stable (trait) anxiety. The STAI is scored on a Likert response scale (4-point). The score range for both the state-trait is 20–80 (25). Higher scores on the STAI items indicate increased level of anxiety. The original authors have reported the reliability of the test, the Cronbach's alpha of trait anxiety 0.79, and in state anxiety 0.94 (33). Based on the study in Iran by Mahram, the Cronbach's alpha was 0.91 for the state anxiety scale and 0.90 for the trait anxiety (34). This questionnaire has been utilized in pregnant women in several studies in Iran (35, 36) and its reliability has been confirmed. In several studies, anxiety has been assessed in active phase of labor (28-30).

The W-DEQ was designed based on the cognitive assessment of women by Wijma et al. to measure the severity of fear of childbirth. Wijma developed Version A for measuring the structure of fear of childbirth during pregnancy by asking women about their antenatal expectations. Version B was developed based on women's postpartum experiences (27, 31). The W-DEQ version A and B contains 33 questions that scored on a six-point Likert scale from 0 to 5. The sum score range from 0 to 165. The higher scores indicate a higher *FOC*. The scores ≤37 are considered as low fear, the scores 38 to 65 indicate moderate fear, scores ≥66 indicate high fear, and scores > 85 show higher *FOC* (37). This questionnaire

was validated in Iran by Mortazavi et al., who reported the Cronbach's alpha of 0.914 (31).

Mackey Childbirth Satisfaction Rating (MCSR) was designed by Mackey et al. (2004) to measure the satisfaction of the childbirth experience (38). The MCSR is a 34-items scale which contains six subscale components of satisfaction (self, partner, baby, nurse, physician, and overall). The questionnaire is scored on a 5-point Likert scale ranging from 1 to 5 (1 = very dissatisfied, 2= dissatisfied, 3 = neither satisfied nor dissatisfied, 4 = satisfied, 5 = very satisfied). The scores range 34 to 170. This questionnaire was validated in Iran by Moudi et al. (2013), who reported the Cronbach's alpha of 0.78 (39). This scale was completed 12 to 24 hours after childbirth (40).

Labor Agentry Scale was designed by Hodnett and Simmons (1987) which measures the feeling of mothers at birth and personal control (41). The questionnaire consists of ten questions containing six positive and four negative items based on the 7-point Likert scale (always = 7, never= 1). The sum score ranged 10 to 70. The higher scores indicate the greater chance of a positive experience. This questionnaire was validated in Iran by Madadi et al (2017). The reliability of the labor agentry scale was confirmed with a Cronbach's alpha 0.84 (42). This scale was completed 12 to 24 hours after childbirth (42, 43).

Data were analyzed by SPSS software (version 21.0) (IBM Corp., Armonk, NY, USA) using descriptive statistical methods (frequency, percent, mean and standard deviation). The normality of quantitative data was evaluated using the Kolmogorov-Smirnov test. Analysis of covariance (ANOVA) was used to compare the mean score of state-trait anxiety during labor with controlling the baseline value. The repeated measure ANOVA test was used to compare the mean score of fear of childbirth after the intervention (at 36 weeks) and after delivery with controlling the baseline value. The independent t-test was applied to compare the mean score of satisfaction and experience of childbirth in the two groups. Finally, the Chi-square test was used to compare the frequency of cesarean delivery in the study groups. $P < 0.05$ was considered statistically significant. All

analysis was conducted based on intention-to-treat.

Results

Table 2 showed the socio-demographic characteristics of the participants in the study groups. There was no significant difference between the two groups in terms of socio-demographic information.

Table 2. Sociodemographic characteristics of the participants in the study groups

Characteristics	Counseling group N=34 N (%)	Control group N=34 N (%)	Characteristics	Counseling group N=34 N (%)	Control group N=34 N (%)
Age (Year)	23.5 (4.6)	24.8 (3.6)	**Fetus gender**		
Husband's age (Year)	28.6 (3.4)	30.2 (3.5)	Female	14 (41.2)	15 (44.1)
Participant's job			Male	20 (58.8)	19 (55.9)
Housekeeper	32 (94.1)	28 (82.4)	**Husband's satisfaction with fetus gender**		
Employed	2 (5.9)	6 (17.6)	Yes	33 (97.1)	34 (100.0)
Educational level			No	1 (2.9)	0 (0.0)
Secondary School	5 (14.7)	1 (2.9)	**Recent childbirth in relatives**		
High school	4 (11.8)	4 (11.8)	Yes	26 (76.5)	28 (82.4)
Diploma	15 (44.1)	9 (26.5)	No	8 (23.5)	6 (17.6)
University	10 (29.4)	20 (58.8)	**Recent childbirth experiences**		
Husband's educational level			NVD is scary	11 (40.7)	10 (34.5)
Illiterate	0 (0.0)	0 (0.0)	CS is scary	5 (18.5)	6 (20.7)
Elementary	3 (8.8)	0 (0.0)	The pain of NVD is unbearable	3 (11.1)	8 (27.6)
Secondary School	3 (8.8)	0 (0.0)	The pain of CS is unbearable	8 (29.6)	5 (17.2)
High school	5 (14.7)	3 (8.8)	**Viewing another person's delivery**		
Diploma	15 (44.1)	16 (47.1)	Yes	10 (29.4)	6 (17.6)
University	8 (23.5)	15 (44.1)	No	24 (70.6)	28 (82.4)
Husband's job			**Attending in Prenatal education classes**		
Unemployed	0 (0.0)	0 (0.0)	Yes	23 (67.6)	28 (82.4)
Worker	10 (29.4)	6 (17.6)	No	11 (32.4)	6 (17.6)
Employed	7 (20.6)	6 (17/6)	**Obtaining information from other sources**		
Shopkeeper	9 (26.5)	4 (11.8)	Yes	23 (67.6)	27 (79.4)
Other	8 (23.5)	18 (52.9)	No	11 (32.4)	7 (20.6)
Family income			**Information sources**		
Completely Sufficient	11 (32.4)	7 (20.6)	Health sources	0 (0.0)	1 (3.7)
Somewhat Sufficient	19 (55.9)	26 (76.5)	Lectures	3 (13.0)	3 (11.1)
Insufficient	4 (11.8)	1 (2.9)	Friends	15 (65.2)	10 (37.0)
			Health workers	5 (21.7)	13 (48.1)

Variables were reported as numbers (%), except for cases ¥ reported as mean (Standard Deviation).
*Independent t-test;§ Chi-squared test; ‡Fisher's exact test; †Chi-square for trend test

Primary outcomes

According to ANCOVA test with adjusting the baseline score, there was no statistically significant difference between the two groups in terms of state (AMD= -1.2; 95% CI: -6.7 to 8.2, P= 0.842) and trait (AMD= -0.3; 95% CI: -3.2 to 2.6, P= 0.859) anxiety scores during active phase of labor (Table 3).

According to the repeated measure ANOVA test with adjusting the baseline score, there was no statistically significant difference between the two groups in terms of the FOC score (AMD= -3.9; 95% CI: -17.6 to 9.7, P = 0.566) (Table 4).

Table 3. Comparison of state and trait anxiety score at different time-points by the study group

Variable	Counseling Mean (SD*)	Control Mean (SD*)	Comparison between groups†
			AMD (95% CI)‡; P-value
State anxiety			-1.2 (-6.7 to 8.2); 0.842
Before intervention	38.6 (10.9)	41.7 (9.7)	
After intervention	41.4 (12..4)	43.4 (14.0)	
Trait anxiety			-0.3 (-3.2 to 2.6); 0.859
Before intervention	36.8 (8.6)	39.6 (8.5)	
After intervention	39.9 (8.8)	40.1 (10.0)	

* Standard Deviation   ‡ Adjusted Mean Difference (95% Confidence Interval)
† ANCOVA test with baseline control was used to compare the groups.
- The anxiety score range is from 20 to 80.
- After the intervention, the number of participants in the counseling group was 33 and in the control group was 31.

Table 4. Comparison of fear of childbirth score at different time-points by the study groups

Time of assessment	Counseling Mean (SD*)	Control Mean (SD*)	Comparison between groups†	Time effect (P-value)	Time* effect group (P-value)
			AMD (95% CI)‡; P-value		
Before intervention	78.5 (25.7)	73.2 (27.8)	-3.9 (9.7 to -17.6); 0.566	0.121	0.872
After intervention (36 week)	67.5 (24.6)	68.9 (33.6)			
After child birth	74.8 (31.2)	75.7 (34.0)			

* Standard Deviation   ‡ Adjusted Mean Difference (95% Confidence Interval)
† Repeated measure ANOVA test with baseline control was used after the intervention.
- The higher the score of fear, the more fear. The range of fear of childbirth is zero to 165.
- The number of participants in the counseling group was 33 at 36 weeks and 23 after childbirth and the number of participants in the control group was 32 at 36 weeks and 23 after childbirth.

Secondary Outcomes

Independent t-test showed no statistically significant difference between the two groups in terms of the total satisfaction score of childbirth (MD= -1.7; 95% CI: -17.5 to 14.0, P= 0.828) and the childbirth experience score (MD= -1.9; 95% CI: -6.6 to 2.7, P= 0.400 (Table 5).

The frequency of cesarean section was 29.4% and 30.3% in the counseling and control groups, respectively.

Table 5. Comparison of the mean score of childbirth satisfaction and experience at 24 hours after delivery in the study groups

Variable	Counseling Mean (SD*) N=24	Control Mean (SD*) N=21	Comparison between groups†
			MD (95% CI)‡; P-value
Total satisfaction of childbirth	125.1 (37.0)	126.9 (24.4)	-1.7 (-17.5 to 14.0); 0.828
Neonate satisfaction	12.5 (3.0)	12.8 (2.5)	-0.2 (-2.0 to 1.4); 0.758
Self-satisfaction	33.0 (8.2)	32.5 (8.2)	0.3 (-4.0 to 4.7); 0.875
Midwife satisfaction	29.2 (9.0)	29.4 (7.2)	-0.3 (-5.2 to 4.7); 0.914
Doctor satisfaction	28.2 (9.9)	30.5 (7.3)	-2.3 (-7.6 to 3.0); 0.392
Partner satisfaction	7.9 (2.7)	8.2 (1.7)	-0.3 (-1.7 to 1.0); 0.604
Childbirth experience	49.0 (7.8)	50.9 (7.5)	-1.9 (-6.6 to 2.7); 0.400

* Standard Deviation   ‡ Mean Difference (95% Confidence Interval)
† Independent t-test was used to compare the groups.
- Childbirth satisfaction score range is 34 to 170 and its sub-domains include neonate satisfaction, self-satisfaction, midwife satisfaction, doctor satisfaction, and partner satisfaction.
- Childbirth experience score range is 10 to 70.

According to the Chi-square test, there was no statistically significant difference between the two groups in terms of the frequency of cesarean section (P= 0.856).

Discussion

The present study was the first study which evaluated the effect of counseling with Beck's group cognitive therapy on anxiety and FOC. According to the findings of the present study, group counseling had no significant result on primary outcomes (FOC and anxiety) and secondary outcomes (mode of delivery, satisfaction and experience of childbirth).

According to the findings of the present study, group counseling with Beck's cognitive therapy approach alone was not effective in reducing anxiety and FOC in primiparous women. The study by Haghighat et al. which was based on midwife counseling reported that spiritual counseling is effective in reducing the level of anxiety in pregnant women. They followed up 55 participants in the counseling group and found that the mean scores of the state anxiety were significantly lower in the counseling group, but they also showed that the counseling did not affect the trait anxiety (44). In another study, Parsa et al. evaluated the efficacy of prenatal counseling in reducing the level of anxiety among 110 nulliparous pregnant women. The intervention group participated in four weekly sessions of group counseling. They found that the state and trait anxiety levels of pregnant women significantly decreased in the intervention group (45). Salehi et al. compared the effectiveness of cognitive-behavioral therapy and interactive lectures in reducing anxiety among pregnant women. They found that the mean scores of the state and trait anxiety were lower in cognitive behavioral therapy and interactive lecture groups (46). The results of the above studies on anxiety are inconsistent with the results of this study. This inconsistency may be due to the differences in counseling method, and especially time of measurement. In the present study, the anxiety was assessed during the active phase of labor, while in the above mentioned studies, it was measured a few weeks after the intervention during pregnancy. Also, this study was conducted on primiparous pregnant women, while all above studies have been performed on

nulliparous and multiparous women; the results of some studies demonstrated more anxiety in primiparous women compared to the multiparous women (47, 48).

In the present study, group counseling with Beck's cognitive therapy approach had no effect on FOC, mode of delivery, satisfaction and experience of delivery. Inconsistent with the results of this study, Andaroon et al. reported that individual counseling could reduce FOC in primiparous women during pregnancy (49). One study from Finland on individual CBT led by an obstetrician (50) and one study from Australia on phone counseling provided by midwives (19), showed the positive effect of counseling on reducing the fear of childbirth. Also, Larsson et al. (2019) assessed women's experience of counseling and its influence on FOC at three Swedish hospitals. They found that counseling positively improved their confidence for childbirth and their childbirth experience and childbirth fear was described as reduced or manageable (51). However, in line with the results of this study, the results of Larsson et al.'s study showed that women in the counseling group reported higher childbirth fear and more negative birth experience (52). Ryding et al. in 2003 showed that counseling in pregnant women increases symptoms of post-traumatic stress related to delivery (53). In another study, individual CBT had no effect on satisfaction with childbirth (50).

The contradictions in these studies can be attributed to the difference in the female experience of childbirth, pregnancy training, and various social, cultural and personal conditions. Altogether, FOC and experience of delivery may depend on many psychological variables; Beck's cognitive group counseling is not a pain relief approach and has little effect on the pain and FOC. Therefore, counseling alone and without other pain relief treatment does not affect FOC and the experience of delivery. Previous studies have found that primiparous women have a more negative attitude toward pregnancy. Approaches such as relaxation techniques, care with psychologists, psychiatrists, and obstetric staff may assist women with FOC (43). Therefore, it seems that additional treatment options need to be evaluated, since counseling

might not meet the needs of all women with childbirth fear.

One of the strengths of this study is that it was the first study of counseling intervention with Beck's group cognitive therapy approach on anxiety and FOC. Using standard questionnaires is the other strength of this study. Also, all the principles of the clinical trial, including random allocation and concealment of allocation were observed to prevent bias in selection of participants.

This study has some limitations. The questionnaires were completed immediately after the intervention in the active phase of labor and short postpartum that had not yet alleviated the pain and discomfort. Most sessions were attended by a small group (3-6 participants), which may influence the results of the study. Indeed, women's thoughts and attitudes toward pregnancy and natural childbirth are influenced by many sociocultural factors such as low educational level, fear of unknowns, horror stories, fear of pain, losing control, and disempowerment [43, 44]. In this study, the researcher involved in sampling and data collection was not blinded to the condition that may cause bias in performance and detection. To minimize the social desirability bias (in terms of childbirth satisfaction and experience), the questionnaires were completed in a private room before discharge from the hospital and the participants were ensured about confidentiality and anonymity.

Conclusion

In this study, the group counseling with Beck's cognitive therapy approach was not effective on anxiety and FOC. The present study didn't provide sufficient information; therefore, more researches are needed in this field to obtain definitive results. It is suggested to implement the group counseling with Beck's cognitive therapy approach in other contexts with removing the limitations in the present study.

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conflicts of interest

Authors declared no conflicts of interest.

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