



Original Research / Orijinal Araştırma

The Effect of Childbirth Education and Birth Plan on Childbirth Self-Efficacy: A Randomized Controlled Trial

Doğum Eğitimi ve Doğum Planının Doğum Öz-yeterliği Üzerine Etkisi: Randomize Kontrollü Çalışma

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Abstract

Aim: The aim of this study is to investigate the effect of birth education given to pregnant women and the birth plan applied together with the education on birth self-efficacy. **Methods:** The study was conducted as a randomised controlled trial at seven Family Health Centers in Turkey. The pregnant women in the sample were divided into three groups. Group 1 received only childbirth education (Group Education-Group-ED), Group 2 received childbirth education and a birth plan (Group Education & Plan-Group-ED&P), and Group 3 was the control group, all of which included 51 pregnant women. The childbirth education was divided into two sessions of 40-50 minutes each. The Personal Information Form and the Childbirth Self-Efficacy Inventory were used to collect the data between April and September 2017. **Results:** When the pregnant women's intragroup self-efficacy mean scores were compared after the intervention, it was determined that the pregnant women's birth self-efficacy levels in Group ED and Group ED&P increased significantly ($P<0.05$), whereas there was no statistically significant increase in the pregnant women's self-efficacy levels in the control group ($P>0.05$). When the pregnant women's intergroup self-efficacy mean scores were compared after the intervention, it was discovered that Group ED's childbirth self-efficacy level was higher than that of the control group ($P<0.05$). It was also determined that the pregnant women in Group ED&P had similar levels of childbirth self-efficacy to those in the control and Group ED ($P>0.05$). **Conclusion:** The findings show that providing only childbirth education during pregnancy is the most effective method for increasing the childbirth self-efficacy of pregnant women. (Clinical trials number: NCT04525430)

Key words: prenatal education, labor, self-efficacy, midwifery, pregnancy.

Özet

Amaç: Bu çalışmanın amacı, (2) doğum eğitimi ile uygulanan doğum planının ve (1) yalnız uygulanan doğum eğitiminin gebelerin doğum öz-yeterliliklerini nasıl etkilediğini araştırmaktır. **Yöntem:** Araştırma, Türkiye'de yedi Aile Sağlığı Merkezinde randomize kontrollü olarak yürütülmüştür. Örneklemi oluşturan gebeler 3 gruba ayrıldı. Grup 1'e sadece doğum eğitimi (Grup Doğum Eğitimi-Grup-DE), grup 2'ye doğum eğitimi verildi ve doğum planı uygulandı (Grup Doğum Eğitimi & Plan-Grup-DE&P), grup 3 ise kontrol grubuydu. Her bir gruba 51 gebe dahil edildi. Doğum eğitimi, her biri 40-50 dakika süren iki oturumdan oluşuyordu. Veriler Nisan-Eylül 2017 tarihleri arasında Kişisel Bilgi Formu ve Doğum Öz-Yeterlik Ölçeği kullanılarak toplanmıştır. **Bulgular:** Gebelerin grup içi öz yeterlik puan ortalamaları karşılaştırıldığında; girişim sonrası Grup DE ve Grup DE&P'deki gebelerin doğum öz yeterlik düzeylerinin önemli düzeyde arttığı ($P<0.05$), kontrol grubundaki gebelerin ise öz yeterlik düzeylerinde istatistiksel olarak önemli bir artış olmadığı belirlendi ($P>0.05$). Gebelerin gruplar arası öz yeterlik puan ortalamaları karşılaştırıldığında; müdahale sonrası Grup DE'nin doğum öz-yeterlilik düzeyinin kontrol grubuna göre daha yüksek olduğu belirlendi ($P<0.05$). Ayrıca Grup DE&P'deki gebelerin doğum öz-yeterlik düzeylerinin, kontrol grubu ve Grup DE'ye benzer olduğu belirlendi ($P>0.05$). **Sonuç:** Bulgular, gebelikte sadece doğum eğitimi verilmesinin gebelerin doğum öz-yeterliliğini artırmada etkili yöntem olduğunu göstermektedir. (Clinical trials kimlik numarasi: NCT04525430)

Anahtar kelimeler: prenatal eğitim, doğum, öz yeterlik, ebelik, gebelik.

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Introduction

Childbirth, which is an important experience in a woman's life, is a physiological process that is largely enigmatic to the expectant new mother.^{1,7} For this reason, support for and education about childbirth are important during pregnancy.⁷ The purpose of childbirth education is to provide information about (1) the procedures to be performed as the labor starts, (2) what the pregnant woman needs to do to prepare for labor, and (3) the ways of coping with labor pain. Being ensured that the pregnant woman is aware of her ability to cope with childbirth through education, her childbirth self-efficacy increases, and she feels herself as part of the team.^{4,16,19,22} Prenatal education has been shown in studies to increase birth satisfaction, maternal knowledge about birth, childbirth-related self-efficacy, and a sense of control in birth.^{4,16,22}

Many childbirth classes also discuss birth plans. The application of a birth plan is an important step in prenatal education and antepartum preparation in pregnancy.⁵ A birth plan is a tool that includes the preferences of pregnant women for the management of labor pain.¹⁷ In other words, a birth plan is a document containing those preferences designated by the pregnant woman, prepared before or during pregnancy, that she thinks are necessary for the effective management of the childbirth process.²⁴ The purpose of creating a birth plan is to help the mother during birth by encouraging conscious decision-making, increasing self-confidence, and facilitating the expression of emotions and thoughts.^{12,15} The birth plan can help pregnant women have more realistic expectations by influencing their expectations of the birth. It increases the feeling of control during childbirth by encouraging them to think about how to cope with the process. Because of these features, the birth plan provides a significant contribution to the self-efficacy of pregnant women during labor.^{6,13,14}

Childbirth self-efficacy is important in that it affects how birth is perceived and physically handled. Childbirth educations provide the opportunity for pregnant women to share their experiences and concerns with other pregnant women participating in the education. At the same time, it increases the knowledge of the expectant mother and helps her gain skills in various subjects. The expectant mother, whose knowledge increases, feels that she is in control, and her sense of self-confidence also increases. Thus, the mother's ability to cope with her fears develops and her self-efficacy increases.^{11,13}

Midwives' antenatal care services include applications such as maternity support, childbirth education, and birth plans to increase childbirth self-efficacy in pregnancy. Primary health care services are the most important unit in which these services are provided. Primary health care services, which provide antenatal education, are also critical in terms of women's ease of access.. Primary health care services are the most important unit in which these services are delivered. Primary health care services, which provide antenatal education, are also critical in terms of women's accessibility. Increasing these trainings in primary care services, implementing a birth plan and making the birth plan by the pregnant women by easily accessing these trainings will make a great contribution to the pregnant women in the birth and postpartum period. Birth plans have also been also used in childbirth preparation education in different regions of the world to increase the childbirth self-efficacy of pregnant women. Although there are numerous studies examining the effects of childbirth education in Turkey,^{18,21} the effect of childbirth education administered with birth plans on childbirth self-efficacy is unknown. We assume that measuring the use and effectiveness of the birth plan in Turkey will make an important contribution to the literature. As a result, this study was carried out to determine how childbirth self-efficacy was affected by pregnant women receiving childbirth education with and without birth plans.

Methods

Aim

The aim of this study is to investigate the effect of birth education and birth plan applied together with education on the birth self-efficacy of pregnant women.

Study Setting and Participants

This is a randomised controlled experimental study with a pretest-posttest design. The research was carried out in seven family health centres (FHCs) in the Malatya province of eastern Turkey. Midwives and family physicians performed routine pregnancy follow-up on FHCs in accordance with the Ministry of Health's

Antenatal Care Management Guide. In these FHCs, there was no standard approach to childbirth education during antenatal care. Furthermore, the number of childbirth education classes in Turkey, as well as the rate of participation in these classes, have been low. The type and quality of education women receive during pregnancy has been determined by the care provider. None of the health professionals in these FHCs had discussed birth plans with the women. In the sample group randomly divided into three groups; Group 1 was given birth training only (Group ED), group 2 was given birth education by adding a birth plan (Group ED&P), group 3 formed the control group. Web-based applications were used to perform sample size/power calculations (<https://www.stat.ubc.ca/~rollin/stats/ssize/>). Based on the power analysis, the sample size was calculated as 51 pregnant women for each group (51 for Group ED, 51 for Group ED&P, and 51 for the control group). It was assumed that the change in the Childbirth Self-Efficacy Scale mean score of Group ED&P would be an increase of 60 points with a 95% confidence interval and 80% power at the 5% error level and the two-tailed significance level.

Inclusion criteria for the study were: (1) pregnant and in the third trimester (28-40 weeks of gestation), (2) literate and (3) not having any risky situation (diabetes, preeclampsia, oligohydramnios, heart disease, placenta previa or multiple pregnancy) and (4) women who do not have any diagnosed problems with the health of the fetus (fetal anomaly or intrauterine growth retardation). Those who had previous cesarean section were excluded from the study.

Randomization

Researchers used FHCs records to determine the number of pregnant women. For sample selection, pregnant women were listed and numbered, and the random sampling method was used. Randomization was determined based on a computer-generated random allocation list. Pregnant women with odd numbers were included in the experimental groups, while pregnant women with even numbers were included in the control group. After allocation, blinding for group assignment was not possible for participants or researchers. This is because birth education and birth plans are intended to be active tools that involve interaction between pregnant women and researchers.

Data Collection Tools

The data were collected between April and September 2017 through face-to-face interviews. Data were collected in approximately 30-40 minutes. The Personal Information Form and the Childbirth Self-Efficacy Inventory (CBSEI) were used as measures.

Personal Information Form: The form consisted of questions that were developed by the researchers on socio-demographic data (such as age, education level, working status, and income level) and obstetric characteristics (such as number of pregnancies, gestational week, and obstetric history) of the women.

The Childbirth Self-Efficacy Inventory (CBSEI) Short Version: A short version of the scale was developed by Ip, Chung, and Tang (2008), and the Turkish validity and reliability study was performed by Ersoy (2011). This scale was designed to determine the level of childbirth self-efficacy for women who were between 26 and 40 weeks pregnant. The scoring system of the responses was in the form of Likert-type measures ranging from one to 10 points. The scale consisted of two sub-dimensions: self-efficacy expectancy and outcome expectancy. Each sub-dimension of the scale consisted of 16 questions. The highest score to be obtained on each of the sub-dimensions was 160, and the lowest score was 16. A high score on a sub-dimension of the scale meant that the expectation of the pregnant woman was high in terms of the childbirth outcome and self-efficacy. The highest total score on the CBSEI was 320, and the lowest total score was 32. The Cronbach's alpha coefficient of the scale is 0.90.⁸ The Cronbach's alpha coefficient of the scale in the study was found to be 0.90.

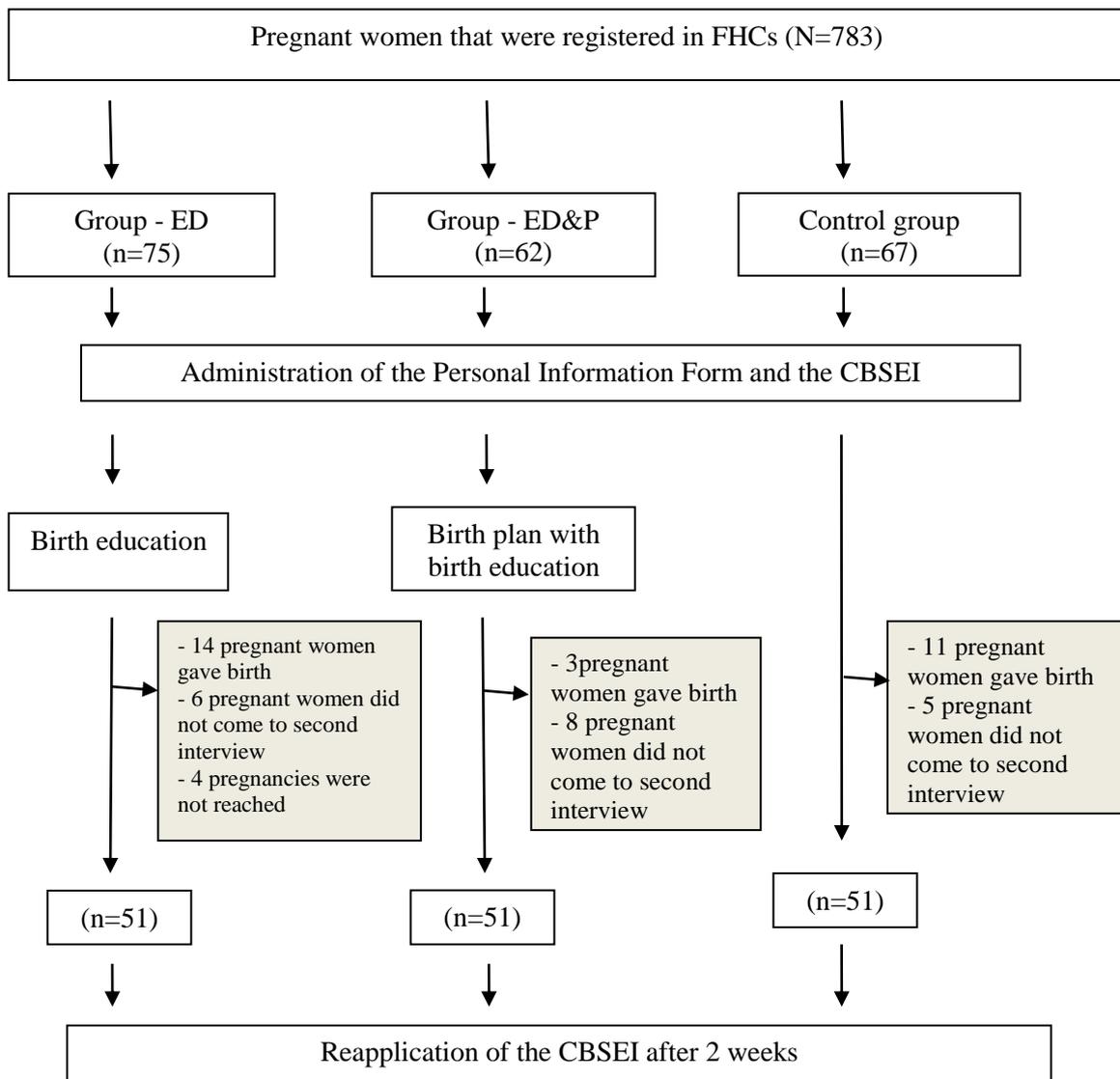
Procedures

The pregnant women were contacted using their phone numbers and were informed about the study. Those who agreed to participate in the study were invited to FHCs. In the first interview, Personal Information Form and CBSEI were applied to all pregnant women in three groups as a pre-test. After the pre-test data were collected, the pregnant women in Group ED were given childbirth education only. The pregnant women in Group ED&P were given childbirth education and information about developing a birth plan; they were also

informed on how to complete the plan. The education was administered individually, and the FHC training rooms were used for this purpose. The education program, which consisted of two sessions, lasted for approximately 40–50 minutes, with 15-minute intervals between the sessions that were scheduled on the same day. At the end of the education program, a Childbirth Education Booklet prepared by the researchers was given to the pregnant women. The researchers did not make any intervention for the control group provided standard care by the FHC. Except for the intervention measures, routine care in every group is completely the same.

After the pre-test data were collected, some pregnant women were dropped from the study, and new pregnant women were assigned in their place. Specifically, in Group ED, 14 pregnant women were dropped because they had given birth; an additional six were dropped because they did not come to the interview; and four who could not be reached were removed. In Group ED&P, three pregnant women were dropped because they had given birth, and another eight who did not come to the interview were removed. In the control group, 11 pregnant women were dropped because they had given birth, and five were removed because they did not come to the interview. All the steps in the study were applied to the pregnant women who were added to the study, and the required number of samples was completed for each group (Figure 1).

Figure 1. Flow chart of participants



CBSEI: Childbirth Self-Efficacy Inventory; Group-ED: Group Education; Group-ED&P: Group Education & Plan; FHC: family health center

The second interview was carried out two weeks after the first interview, and the CBSEI was administered as a post-test to the pregnant women in all three groups.

Childbirth Education Content

First Session: General information about labor, including affecting factors, signs of the start, steps in the process, and procedures applied during labor. Second Session: Methods of coping with birth contractions, including relaxation exercises, breathing exercises, changing position, massage, cold/warm application, music, focus, and walking.

Birth Plan

The pregnant women marked the process from the beginning of the birth to the end of the birth and their expectations and preferences regarding this process on the birth plan. On the birth plan, the information

provided included whom the women would contact when the labor started, where and when to go when labor started, what to take to the facility, what methods would be used to cope with labor pain in the first stage of labor, how she would push in the second stage of labor, what position she wanted to use, and the feeding options at the end of labor.

Ethical considerations

The research was approved by the author's university ethics review board (No: 2017/4-3) and it was registered at www.clinicaltrials.gov (NCT04525430). To conduct the study, the necessary permission was obtained from the Public Health Agency of Turkey and from the selected FHCs. Before starting the study, the purpose of the study was explained to all of the pregnant women, and their written consent was obtained. The researchers told the pregnant women that they could quit the study whenever they wanted to.

Data analysis

SPSS (Statistical Package for Social Sciences) 16.0 for Windows software (SPSS, Chicago, IL, USA) was used for statistical analysis of the data obtained. One-way analyses of variance and chi-squared tests were used to compare the characteristic features of the groups. Independent and dependent samples t-tests were used to compare the intergroup and intragroup CBSEI scores, respectively. The results were evaluated at a 95% confidence interval and $P < 0.05$ was the level of significance.

Results

A total of 153 pregnant women participated in the study, including 51 in Group ED, 51 in Group ED&P, and 51 in the control group. There was no statistically significant difference between the pregnant women in the three groups in terms of descriptive characteristics ($P > 0.05$). However, it was determined that the difference in the mean ages between the groups was statistically significant ($P = 0.045$) (Table 1).

Table 1. Basic personal information of the participants (n=153)

Characteristics	Control group	Group ED	Group ED&P	Total	p value
	(n=51)	(n=51)	(n=51)	(n=153)	
	n (%)	n (%)	n (%)	n (%)	
Age (years) (mean ± SD)	27.1 ± 5.7	27.2 ± 4.0	25.2 ± 3.7	26.5 ± 4.6	.045*
Education level					
Primary school	16 (31.3)	19 (37.3)	17 (33.3)	52 (34.0)	.631‡
High school	16 (31.4)	20 (39.2)	20 (39.2)	56 (36.6)	
University	19 (37.3)	12 (23.5)	14 (27.5)	45 (29.4)	
Working status					
Working	10 (19.6)	5 (9.8)	7 (13.7)	22 (14.4)	.365‡
Not working	41 (80.4)	46 (90.2)	44 (86.3)	131 (85.6)	
†Income level					
High	16 (31.4)	15 (29.4)	17 (33.4)	48 (31.4)	.963‡
Medium	34 (66.7)	34 (66.7)	32 (62.7)	100 (65.4)	
Low	1 (2.0)	2 (3.9)	2 (3.9)	5 (3.2)	
Family Type					
Nuclear	41 (80.4)	43 (84.3)	35 (68.6)	119 (77.8)	.153‡
Traditional	10 (19.6)	8 (15.7)	16 (31.4)	34 (22.3)	
Gestational week (mean ± SD)	34.5 ± 2.3	35.0 ± 2.2	34.8 ± 2.5	34.8 ± 2.3	.576§
Parity					
Primigravida	24 (47.1)	25 (49.0)	32 (62.7)	81 (52.9)	.224‡
Multigravida	27 (52.9)	26 (51.0)	19 (37.3)	72 (47.1)	
Having knowledge about childbirth					
Yes	7 (13.7)	3 (5.9)	6 (11.8)	16 (10.5)	.404‡
No	44 (86.3)	48 (94.1)	45 (88.2)	137 (89.5)	

SD: standard deviation

* $P < 0.05$ indicates significant difference, according to one-way ANOVA.

†Determined according to the statements of the pregnant women

‡ Results of the chi-square test.

§ Results of the one-way ANOVA

The comparison of the CBSEI total and sub-dimension pre-test and post-test mean scores of pregnant women in the control group and Group ED is shown in Table 2. No statistically significant difference was found between the CBSEI total and sub-dimension pre-test mean scores of the control group and Group ED ($P > 0.05$). Based on the evaluation of the post-test performed on the control group and Group ED, the mean scores of the outcome expectancy sub-dimension were 135.5 ± 18.2 and 144.0 ± 14.2 , respectively ($P = 0.011$). The mean scores of the other sub-dimension of the scale, self-efficacy expectancy, were 117.4 ± 25.0 and 124.2 ± 26.4 for the control group and for Group ED, respectively ($P = 0.185$). The mean post-test CBSEI total score was 253.0 ± 37.0 for the control group and 268.2 ± 35.3 for Group ED, respectively ($P = 0.036$) (Table 2).

Table 2. The comparison of the CBSEI total and sub-dimensions pretest-posttest means scores of pregnant women in the control group and Group ED

	Pretest (mean ± SD)		P value†	Posttest (mean ± SD)		P value†
	Control group (n=51)	Group ED (n=51)		Control group (n=51)	Group ED (n=51)	
Outcome expectancy	138.7±15.0	140.9±14.1	0.462	135.5±18.2	144.0±14.2	0.011*
Self-efficacy expectancy	113.7±26.1	115.5±28.8	0.730	117.4±25.0	124.2±26.4	0.185
CBSEI total	252.4±34.9	256.4±35.4	0.566	253.0±37.0	268.2±35.3	0.036*

CBSEI: Childbirth Self-Efficacy Inventory; Group-ED: Group Education; SD: standard deviation

* $P < 0.05$ indicates significant difference, according to independent samples t test.

† Results of the independent samples t test.

The comparison of the CBSEI total and sub-dimensions pre-test and post-test mean scores of the pregnant women in the control group and Group ED&P is shown in Table 3. No statistically significant difference was found between the CBSEI total and sub-dimension pre-test mean scores for the control group and Group ED&P ($P > 0.05$). Based on the evaluation of the post-test, the mean scores of the outcome expectancy sub-dimension were 135.5±18.2 for the control group and 138.5±17.5 for Group ED&P ($P = 0.390$). The mean scores of the self-efficacy expectancy sub-dimension were 117.4±25.0 for the control group and 122.9±24.3 for Group ED&P ($P=0.265$). The mean CBSEI total scores were 253.0±37.0 for the control group and 261.5±36.6 for Group ED&P ($P = 0.244$) (Table 3).

Table 3. The comparison of the CBSEI total and sub-dimensions pretest-posttest means scores of pregnant women in the control group and Group ED&P

	Pretest (mean ± SD)		P value†	Posttest (mean ± SD)		P value†
	Control group (n=51)	Group ED&P (n=51)		Control group (n=51)	Group ED&P (n=51)	
Outcome expectancy	138.7±15.0	136.7±16.9	0.526	135.5±18.2	138.5±17.5	0.390
Self-efficacy expectancy	113.7±26.1	114.9±26.5	0.819	117.4±25.0	122.9±24.3	0.265
CBSEI total	252.4±34.9	251.6±36.8	0.908	253.0±37.0	261.5±36.6	0.244

CBSEI: Childbirth Self-Efficacy Inventory; Group ED&P: Group Education & Plan; SD: standard deviation

† Results of the independent samples t test.

Table 4 shows the comparison of the CBSEI total and sub-dimension pre-test and post-test mean scores of the pregnant women in Group ED and Group ED&P. It was found that there was no statistically significant difference between the CBSEI total and sub-dimension pre-test mean scores for Group ED and Group ED&P ($P > 0.05$). The post-test mean scores of the outcome expectancy sub-dimension were 144.0±14.2 for Group ED and 138.5±17.5 for Group ED&P ($P = 0.090$). The mean scores of the self-efficacy expectancy sub-dimension were 124.2±26.4 for Group ED and 122.9±24.3 for Group ED&P ($P = 0.795$). The mean CBSEI total scores were 268.2±35.3 for Group ED and 261.5±36.6 for Group ED&P ($P = 0.347$) (Table 4).

Table 4. The comparison of the CBSEI total and sub-dimensions pretest-posttest means scores of pregnant women in Group ED and Group ED&P

	Pretest (mean ± SD)		<i>P</i> value†	Posttest (mean ± SD)		<i>P</i> value†
	Group ED (n=51)	Group ED&P (n=51)		Group ED (n=51)	Group ED&P (n=51)	
Outcome expectancy	140.9±14.1	136.7±16.9	0.182	144.0±14.2	138.5±17.5	0.090
Self-efficacy expectancy	115.5±28.8	114.9±26.5	0.901	124.2±26.4	122.9±24.3	0.795
CBSEI total	256.4±35.4	251.6±36.8	0.501	268.2±35.3	261.5±36.6	0.347

CBSEI: Childbirth Self-Efficacy Inventory; Group ED: Group Education; Group ED&P: Group Education & Plan; SD: standard deviation

† Results of the independent samples t test.

Table 5 shows the comparison of the CBSEI total and sub-dimensions pre-test and post-test mean scores of the pregnant women. It was determined that there was a statistically significant difference between the mean pre-test and post-test scores of the CBSEI sub-dimensions for the control group ($P < 0.05$) but not between the mean CBSEI total scores ($P > 0.05$). It was also determined that there was a statistically significant difference between the mean pre-test and post-test CBSEI total and sub-dimension scores for Group ED ($P < 0.05$). Further, there was a statistically significant difference between the mean pre-test and post-test scores for the CBSEI total and self-efficacy expectancy sub-dimension scores for Group ED&P ($P < 0.05$). There was no statistically significant difference between the mean scores of the self-efficacy expectancy sub-dimension ($P > 0.05$) (Table 5).

Table 5. The comparison of the CBSEI total and sub-dimensions pretest-posttest mean scores of pregnant women

		Pretest (mean ± SD)	Posttest (mean ± SD)	P value†
Control group	Outcome expectancy	138.7 ± 15.0	135.5 ± 18.2	.039
	Self-efficacy expectancy	113.7 ± 26.1	117.4 ± 25.0	<.001*
	CBSEI Total	252.4 ± 34.9	253.0 ± 37.0	.834
Group ED	Outcome expectancy	140.9 ± 14.1	144.0 ± 14.2	.009*
	Self-efficacy expectancy	115.5 ± 28.8	124.2 ± 26.4	<.001*
	CBSEI Total	256.4 ± 35.4	268.2 ± 35.3	<.001*
Group ED&P	Outcome expectancy	136.7 ± 16.9	138.5 ± 17.5	.225
	Self-efficacy expectancy	114.9 ± 26.5	122.9 ± 24.3	<.001*
	CBSEI Total	251.6 ± 36.8	261.5 ± 36.6	.010*

CBSEI: Childbirth Self-Efficacy Inventory; Group ED: Group Education; Group ED&P: Group Education & Plan; SD: standard deviation

* $P < 0.05$ indicates significant difference, according to dependent samples t test.

† Results of the dependent samples t test.

Discussion

It was determined that the CBSEI total and outcome expectancy sub-dimension mean scores for the pregnant women who were given only childbirth education by the researchers were higher than those of the control group with standard prenatal care. Many studies have found that childbirth education enhances childbirth self-efficacy.^{10,11,20} A study conducted in Turkey with 63 pregnant women found that antenatal education enhanced the self-efficacy of the mothers.²⁰ In the study carried out by İşbir and Önal (2016), antenatal education was found to increase childbirth self-efficacy, perceived support, and self-control during labor. Another study in Denmark found that antenatal education increased childbirth self-efficacy.³ Ip et al. (2009) found that self-efficacy improvement education delivered to nulliparous pregnant women in the last trimester improved self-efficacy and coping with childbirth. The findings of our study support these results that indicate that antenatal education increases childbirth self-efficacy.

Although birth plans, which are thought to influence childbirth self-efficacy, are implemented in some countries throughout the world, they have not yet been used in Turkey, and no study could be found examining their effectiveness in Turkey. In our study, it was determined that there was no statistically significant difference between the post-test CBSEI total and sub-dimension mean scores for the control group and the group to which childbirth education and a birth plan were provided by the researchers. Different results have been obtained in studies on birth plans in the literature. Specifically, it has been determined in various studies that pregnant women who prepared a birth plan had an unexpected birth experience, had less birth control, and experienced some disappointment.^{2,17} Contrary to these results, Yam, Grossman, Goldman, and Garcia (2007) showed in their study that women who had developed a birth plan found their experience to very satisfactory, although some things happened outside of their will at the time of delivery. Kuo et al. (2009) examined the effect of a birth plan on the childbirth experience, control, and fulfilling expectations in Taiwanese women who had reached at least the 32nd gestational week. They found that the experimental group that had prepared birth plans had more positive birth experiences, and, at the same time they could control themselves better during labor.¹³ The differences in the results of the studies are thought to be since

there is no unified standard for the specific content and time of implementation for a birth plan at the present time. Another reason may be that in many countries, birth plans are not yet very active in terms of their application. As a matter of fact, it is thought that pregnant women are still strangers to the implementation of birth plans in Turkey, and that they might refrain from developing such a plan due to the negative reaction of health personnel.

In our study, it was determined that there was no statistically significant difference between the post-test CBSEI total and sub-dimension mean scores for the pregnant women receiving childbirth education and the scores of the pregnant women who received childbirth education and developed a birth plan. The goal in creating a birth plan is for the pregnant woman to record preferences that are thought to be necessary to manage the childbirth process. However, our findings suggest that it was insufficient for pregnant women to only indicate their preferences, without the assistance of health personnel, to increase childbirth self-efficacy. The birth plan could allow women to debate practices that could enhance their childbirth satisfaction even if such plans are not sufficient to improve childbirth self-efficacy. On this point, Whitford and Hillan (1998) studied women's perceptions of childbirth, and most women expressed that there was a benefit of preparing a birth plan for a positive childbirth perception. For this reason, birth plans can be used to enhance the quality of care during delivery.

Study limitations

This research consisted of the first generic birth plan introduced into Turkish as a trial plan. While there are strengths of our research, such as the inclusion of a strong design (randomized allocation) in seven FHCs settings, this study has some limitations. The fact that the sample of the present study consisted of pregnant women who registered at seven FHCs in Turkey limits the generalizability of the study results. Second, data were only collected once in the FHCs in the prenatal period; thus, those feelings related to long-term postnatal outcomes were not explored. Third, the opinion and influence of birth professionals remains unclear. Future research should therefore include the opinions of birth professionals and pregnancies on the birth plan.

Conclusion and Recommendations

It was determined that the childbirth self-efficacy levels of the pregnant women who received only childbirth education were higher than those of the control group. The childbirth self-efficacy levels of the pregnant women who developed a birth plan together with receiving childbirth education were like those of the control group and those who received only childbirth education. Considering these results, it can be suggested that:

- *Prenatal education should be widespread, and women should have access to such education.
- *Within the support that is to be given to expectant mothers during childbirth education, women should make decisions and have preferences that are appropriate for their health status, and they should be encouraged to prepare their own birth plans.
- *Standardizing the birth plan and applying it in a certain period of pregnancy can increase its efficiency.
- *Health personnel should respect the pregnant women's birth plans that include their preferences and should give precedence to those preferences if there is no risk during the practice.

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