THE ROLE OF ANTENATAL EDUCATION IN REDUCING TURKEY HIGH CESAREAN SECTION RATES: A RANDOMIZED CONTROLLED TRIAL

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AİM:

In this context, given the increase in cesarean section rates, we designed a study incorporating both quantitative and qualitative data to investigate the effect of educating pregnant women about childbirth, the labor process, and the postpartum period. We aimed to examine the relationship between participants' receipt of antenatal education and mode of delivery (vaginal birth/cesarean section), the institution where the birth took place, age, and the number of informational phone calls received. In addition, among volunteers who participated in the pregnancy education program, we aimed to evaluate their educational needs, birth preferences, satisfaction with the training, and the impact of the training on their.

METHODS:

Antenatal education sessions are organized in accordance with regulations at the Üsküdar Healthy Life Center, which operates under the Üsküdar Health District. In this context, all pregnant women in the Üsküdar district who are at or beyond the 28th week of gestation are contacted by telephone and provided with information regarding their planned place of delivery, as well as details concerning

pregnancy, childbirth, and prenatal care. These telephone calls are recorded. Pregnant women identified through these records are informed about the Childbirth Preparation Class and invited to attend. A total of 120 pregnant women, selected from a pool of 575 identified via telephone call records, were included in our study, which was conducted between December 1, 2025, and May 1, 2026.

Inclusion criteria

- Years over 18.
- Pregnancy over 28 weeks (primiparous).
- To live in Üsküdar.
- No additional diseases that may affect maternal and neonatal outcomes.**Exclusion criteria**
- Patients with high-risk pregnancies.
- Patients with maternal comorbidities (gestational hypertension, preeclampsia, uncontrolled diabetes or gestational diabetes, malignancy, vascular diseases, degenerative joint and connective tissue diseases, mental illness).
- Women with known chronic disease.
- Have a history of cesareans.

Pregnancy Information Class

Pregnancy information training is conducted by a family medicine specialist and a midwife using the Ministry of Health's current guidelines and presentations provided as training material, with theoretical instruction and one-on-one question-and-answer sessions. The training lasts a total of 4 hours in two sessions per day.In the first session of the training:

- Introduction to the training
- Pre-pregnancy and Pregnancy Process
- Psychology of Pregnancy and Childbirth
- What is Childbirth? What are the Signs of Childbirth?
- When Should I Go to the Hospital?

- Steps to Preparing for Childbirth
- The Importance of Exercise and Movement During Pregnancy
- Advantages of Normal Childbirth for Mother and Baby, Disadvantages of Cesarean Section
- Methods of Coping with Labor Pains
- Roles of Family Members During and After Childbirth, Parenting

In the second session of the training;

- Nutrition During Pregnancy and Breastfeeding
- Newborn Care
- The Importance of Breast Milk and BreastfeedingPostpartum Mother Care (Postnatal Period)
- First Skin-to-Skin Contact with the Baby and its Importance
- Baby Vaccinations, Routine Follow-ups

Breathing exercises, relaxation techniques, psychological relaxation techniques, and exercise practice applications could not be included in the training. This research was designed to improve and plan the quality and content of these training sessions in the future. It is planned to ensure the participation of expert personnel in their fields, such as dieticians, psychologists, and physiotherapists, in the training.

Population: Pregnant women residing in Üsküdar district or registered with a family physician in Üsküdar district between December 1, 2025 and May 1, 2026.

Sample: Pregnant women who are experiencing their first pregnancy, have not previously undergone a cesarean section, are not high-risk pregnant, and are in the last three months of their pregnancy (28th week of gestation and beyond).

Sample size: Calculated using G*Power 3.1 software. The chi-square test was used to compare the mode of delivery between pregnant women who received education and those who did not. A moderate effect size (Cohen's w=0.30), a 95% confidence level (α=0.05), and 80% test power ($1-\beta$=0.80) were accepted. As a result of the analysis, the required minimum sample size was

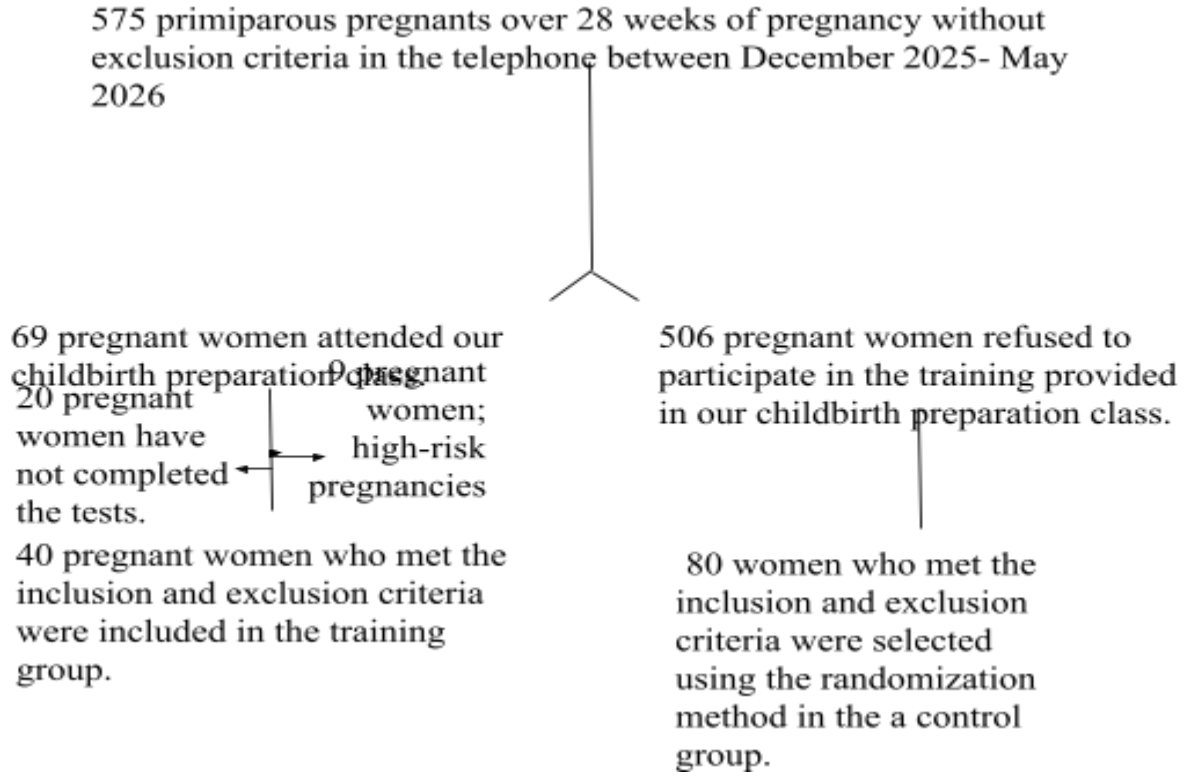
calculated as 88 people. Considering possible losses, a total of 120 pregnant women (40 education, 80 control) were included in the study.

Randomization

40 pregnant women who were selected according to the inclusion and exclusion criteria and who had completed Childbirth Preparation Class formed the intervention group. Then, the pregnant women who registered in our system have been given numbers. They have been sequentially numbered using a method that employs a central computer mechanism to implement the random assignment sequence. From these numbers, 80 people were selected using a single-blind random sampling method. Records of selected pregnant women were enrolled in the control group, with an allocation ratio of 1:2.

In addition, a semi-structured questionnaire was administered to the intervention group before and after the training. The pre- and post-training questionnaire results of the pregnant women in this group were analyzed to investigate the effects of the training on birth preference, fear of childbirth, behavioral sociodemographic data, satisfaction rate with the training, fear of childbirth, increased love and knowledge, and breastfeeding-infant care (Figure 1).

Figure 1. Randomization



Blinding

The doctors who provide Childbirth Preparation Class and the doctors who evaluate the results of the questionnaire, as well as the persons who carry out statistical analyses, have no influence on the time and method of birth. The doctors who decide on the timing and method of birth and the people who carry out the statistical analyses are blind to which group of patients attended the education and which did not.

Study Group: 40 pregnant women who fully completed the childbirth preparation training offered by the Childbirth Preparation Class.

Control Group: 80 pregnant women followed during the same period but who did not participate in the Childbirth Preparation Class training.

Data Collection: The age, number of telephone consultations/information sessions, preferred hospital type (public/private), and final delivery method (normal/cesarean) of the participants in both groups were recorded. In addition, socio-demographic data (age, education, income, occupation, spouse's age, etc.), birth preferences (normal/vaginal or cesarean), 10 questions (1-5 scale) asking why they preferred normal delivery, 8 questions (1-5 scale) asking why they preferred cesarean delivery, and factors influencing their birth preference were recorded before the training. After the training, qualitative and quantitative data, including open-ended questions on the training needs and satisfaction of the study group, were recorded.

Statistical Analysis Plan (SAP): Descriptive statistics will be used in the research analysis via the SPSS statistical program. Descriptive and comparative analyses were performed using statistical software, including percentages, means, minimum, maximum, and nonparametric tests (chi-square, Mann-Whitney U, etc.). Additionally, the effect of the prenatal education program on normal delivery was examined using Binary Logistic Regression analysis, controlling for age, number of telephone consultations, and hospital type. For continuous variables, normality of distribution, skewness and kurtosis statistics (acceptable range: -1.5 to +1.5), Shapiro-Wilk tests, and visual inspection of histograms and QQ plots were evaluated using multiple methods. All continuous variables in our study exhibited values indicating that they were not approximately normally distributed according to George and Mallery's criteria. For continuous variables (e.g., age), the independent samples Mann-Whitney U test was used, reported with means and standard deviations, degrees of freedom, p-values, and Cohen's d effect sizes. For categorical variables (e.g., education level, occupation, income level), chi-square tests (χ^2) were used when all expected cell frequencies ≥ 5; Fisher's exact test was used when expected frequencies < 5. A p-value of < 0.05 was considered statistically significant for all analyses. Test statistics (χ^2 values), degrees of freedom, p-values, and effect sizes (Cramér's V or phi coefficient) were reported [35].