

## **Does preparation for childbirth training reduce the cesarean rate?**

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**Keywords:** Childbirth education, cesarean section, vaginal birth

### **Abstract**

*Purpose:* This study was conducted as experimental and prospective to determine the effect of birth preparation training on the birth route preparations of pregnant individuals.

*Methods:* The study was conducted in three state hospitals which operate under Kocaeli State Hospitals Community. The study group included 110 pregnant individuals who attended the hospitals' birth preparation training classes between 1 January – 30 June 2015 and the control group included 90 pregnant individuals from Kocaeli Maternity Hospital. The chi-squared test was used to measure the differences between groups in classified variables, and the t-test was used for parametric variables.  $P < 0.05$  was considered to be significant

A survey form was used to identify individual demographic information, obstetric stories, and preferred birth route in order to collect relevant data.

*Findings:* The survey reveals that 67% of the pregnant individuals prefer vaginal birth while 33% prefer cesarean birth. In choosing the birth route, 60% of the pregnant individuals make their own decisions, while 28.2% make the decision together with their partner, and 11.8% report the decision being made by their doctor. It

*is observed that—after attending the birth training—all of the individuals preferred vaginal birth. For the pregnant individuals, their birth route choices before and after the birth preparation training had been observed as highly statistically significant ( $p < 0,005$ ). However, when the choices of the pregnant individuals who participated in birth preparation training is compared to the control group's choices, no statistical significance was found. Rates of cesarean were alike for both groups.*

*Conclusions and Suggestions:* In this study, for the individuals who participate in birth preparation training, the choice of the birth route is found to be affected by age, literacy, and former birth route experienced. However, no significant evidence was found regarding reducing the choice of cesarean. A pregnant individual's birth route choice will be more healthy as she becomes qualified for, and receives sufficient treatment between the preconception stage to after birth, alternative birth routes, and consultancy for overcoming birth pain and relaxation methods.

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## **Introduction**

The birth process introduces women to the risks of pregnancy, in both birth and postpartum stages.<sup>1</sup> Pregnancy and birth are significant sources of stress for women. In fact, they present a major physiologic event for the female life cycle. One of the important subjects that must be decided in pregnancy is the method of birth. The decision process can be affected by many factors.<sup>2</sup> Negative events that occur during labor can cause fear of birth.<sup>3</sup> Such events take their place in stories that are told between women sharing their individual experiences in the years following their pregnancy, as well as in scenes of painful labors that are shown on visual media. These factors cause women to have a negative image of birth.<sup>4,5</sup>

The birth route choice can be affected by social, psychological, and environmental factors—as well as medical indications—of the birth candidate. Birth candidates are helped by the conduction of child birth education. As a result, the fears and anxiety that appear in the antenatal period can be prevented, and normal birth can be encouraged. While cesarean birth was viewed as an operation that saved womens' lives at the beginning of the last century, it has also started to be considered as a low-risk operation to save the life of the fetus, and become an cooperative

operation between mother, baby, and the medical personnel. As a result, the rate of cesarean birth started to increase across the world.<sup>6,7</sup> For example, in the United States of America, the cesarean birth rate was 5% in the 1970's, while it reached 30.3% in 2010.<sup>8,9</sup> According to the World Health Organization (WHO) 2010 data, cesarean rates for other countries include: 38.2% in Italy, 45.9% in Brazil, 37.8% in Mexico, 41.9% in Iran, 28.9% in Sweden, and 27.8% in Germany.<sup>9</sup> Conducted studies also state that the cesarean rate in Turkey is on the rise. While the cesarean birth rate was 21% according to Annual Health Statistics, this rate has climbed to 51.4% in 2012.<sup>10</sup> According to this data, the rate of cesarean birth is much higher than the 15% that had been designated by the WHO as the maximum level.<sup>9</sup>

The International Gynaecology and Obstetrics Federation states that a cesarean birth must be conducted for medical reasons but not as a personal choice. The American College of Obstetricians and Gynecologists does not recommend optional caesarean operation conducted before the 39th week in its statement in 2013.<sup>11</sup> Research for following birth operations and their results—in order to protect mothers' health—is conducted all over the country within state and private healthcare organizations by our Ministry. In this manner, the follow-up for cesarean indications and its results hold an important place.<sup>12</sup>

As there are risks and complications that can be caused by a cesarean birth for both the mother and the newborn, reducing this risk is greatly important.

One of the important efforts for reducing the cesarean rate is child birth training including education for parents concerning pregnancy, birth, and the period after birth. During training, mother candidates are supported to choose normal birth routes.

This study was conducted to research the effects of child birth training on birth route choice.

### **Materials and Methods**

The study design was conducted in Derince Research and Education, Gölcük Necati Çelik, İzmit Seka, and Darıca Farabi State hospitals, which are all a part of the Kocaeli City State Hospital Community. The work group in the experimental research is comprised by the individuals who are receiving service from maternity polyclinics of the hospitals, individuals who are selected as an improbable sampling method and on a volunteer basis, who are eligible for research, and who applied to the hospitals' child birth trainings between 1 January – 30 June 2015. We were used the Lamaze Method for child birth training.<sup>13</sup>

Study participants who are carrying a single fetus between 28-36 weeks, who are expected to have a spontaneous birth, who did not have prior uterine surgery such as a cesarean or myomectomy, and who did not have any maternal complication or systematic sickness are included. The control group of the study includes pregnant individuals who are not directly taking support from Kocaeli Maternity Hospital in accordance with the research criteria. Twenty-three out of 110 individuals are

excluded from the research as they left the childbirth training before it finished, while 87 completed the child birth training. The research was completed with 87 pregnant individuals in the research group, and 90 pregnant individuals in the control group.

Data collection, charts and birth training contents were used for identifying individual demographic information, obstetric stories, and preferred birth route in order to collect relevant data. This data was collected by face to face interviews. The survey form was filled out prior to training, and the preferred birth route was obtained. The birth route choice of the pregnant individuals was then re-evaluated after the training. These training sessions were conducted by midwives with child birth training certification. The training process covers the topics of "pregnancy period," "nutrition," exercising in pregnancy and "puerperant periods," "normal and cesarean birth process," "puerperancy period," "breast milk and breastfeeding," and "characteristics of the newborn and its maintenance." The child birth training was conducted once a week as 150 minute sessions (120 minutes training, 30 minutes exercise) for 15 hours in total. Required work permits from the Kocaeli City State Hospitals Community General Secretary, and written and verbal approval of the participants were obtained in order to conduct the research.

Statistical analysis was conducted in SPSS 19.0 software for numerical, percentile, chi square, and Student's T test. The data was evaluated for a 95% trust level and  $p < 0.05$  significance level.

**Results**

The study was conducted to identify the effects of the child birth training program on the choices made by pregnant individuals regarding birth route. The socio demographical specifications are

evaluated showing that the average age of the study group is  $26.63 \pm 3.73$  and the control group's average age is  $27.86 \pm 3.21$ . The marriage age is  $23.99 \pm 4$ , 18 for the study group, while it  $22.8 \pm 6.7$  for control group (Table 1).

**Table 1.Socio Demographical Specifications of Pregnant Individuals**

| Socio Demographical Specifications |                        | STUDY GROUP (N = 87) |       | CONTROL GROUP(N = 90) |      | pvalue                   |
|------------------------------------|------------------------|----------------------|-------|-----------------------|------|--------------------------|
|                                    |                        | n                    | %     | n                     | %    |                          |
| Mean age ( years)                  |                        | 27.30±4.54           |       | 26±7.7                |      | 0.0858 <sup>a</sup>      |
| Marriage Age                       |                        | 23.99±4.18           |       | 22.8±6.7              |      | 0.0784                   |
| Parity                             |                        | 1.14±0.42            |       | 1.2±0.06              |      | 0.18 <sup>a</sup>        |
| Educational Status                 | First School           | 18                   | 20.6  | 21                    | 23.3 | 0.90079.<br><sup>b</sup> |
|                                    | Middle School          | 34                   | 39.1  | 35                    | 38.8 |                          |
|                                    | High school and higher | 35                   | 40.2  | 34                    | 37.7 |                          |
| occupational status                | Employed               | 26                   | 29.8  | 25                    | 27.7 | 0.75696 <sup>b</sup>     |
|                                    | Unemployed             | 61                   | 70.1  | 65                    | 72.2 |                          |
| Will of Pregnancy Status           | Want                   | 81                   | 93.1  | 80                    | 88.8 | 0.3282 <sup>b</sup>      |
|                                    | Don't Want             | 6                    | 6.8   | 10                    | 11.1 |                          |
| Social Security Status             | Have                   | 83                   | 95.4  | 85                    | 94.4 | 0.7718 <sup>b</sup>      |
|                                    | Don't Have             | 4                    | 4.59  | 5                     | 5.5  |                          |
| Status of Regular Exercise         | Yes                    | 38                   | 43.6  | 36                    | 40   | 0.61990 <sup>b</sup>     |
|                                    | No                     | 49                   | 56.3  | 54                    | 60   |                          |
| Residency Area                     | City center            | 60                   | 68.7  | 54                    | 60   | 0.21297 <sup>b</sup>     |
|                                    | Out of city center     | 27                   | 31.03 | 36                    | 40   |                          |
| Family type                        | Nuclear family         | 33                   | 37.9  | 40                    | 44.4 | 0.3788 <sup>b</sup>      |
|                                    | Extended family        | 54                   | 62    | 50                    | 55.5 |                          |
| Preterm Birth Story                | Present                | 3                    | 3.44  | 9                     | 10   | 0.08303 <sup>b</sup>     |
|                                    | Un-Present             | 84                   | 96.5  | 81                    | 90   |                          |
| Former Birth Method                | Vaginal Birth          | 22                   | 25.3  | 32                    | 35.5 | 0.138 <sup>b</sup>       |
|                                    | First Pregnancy        | 65                   | 74.7  | 58                    | 64.4 |                          |

a:student t test, b : chi square , p<0, 05 :significance level.

Sixty five (74.4 %) pregnant individuals that participated in the research are primipara. It can be seen that 70% of the gravidas prefer vaginal birth, 7% preferred cesarean birth, while 22.7%

are undecided prior to child birth preparation training. The most common reasons for women to choose vaginal birth include: the ease of giving birth, less pain expected after birth (36.4%),

and the belief of getting well faster and easier after the birth (32.4%).

As the birth method choice is evaluated, 60% of the gravidas made the decision individually, 28.2% decided with their partners, and for 11.8% the decision was made by the doctor. Also, it is found that 16% of the women asked medical personnel for information regarding the birth methods. The most preferred medical personnel appear to be doctor (87.5%), midwife (8.9%), and nurse (3.6%). After the child birth training program, it is found that the birth route choice made by all of the women shifted to vaginal birth.

For the pregnant individuals, their birth route choices before and after the birth preparation training had been observed as highly statistically significant

( $p < 0.0001$ ) (Table 2).

**Table 2. Birth Method Choices Prior and After the Child Birth Training Programme (n=87)**

| Birth Method Choice | Prior to Training<br>n (%) | After the Training<br>n (%) | p value       |
|---------------------|----------------------------|-----------------------------|---------------|
| Vaginal Birth       | 58 (67)                    | 87 (100)                    | $p < 0.001^a$ |
| Caesarean Birth     | 29 (33)                    | 0                           |               |

a: student t test

The deviance between the pregnant individuals who participated in the child birth training program, and those who did not participate in child birth training was found to be insignificant upon statistical analysis (Table 3).

**Table 3. Childbirth Routes**

| Birth Method Choice | Study Group<br>(n=87)<br>n (%) | Control Group<br>(n=90)<br>n (%) | p value      |
|---------------------|--------------------------------|----------------------------------|--------------|
| Vaginal Birth       | 60 (69)                        | 64 (71.1)                        | $p = 0.75^a$ |
| Caesarean Birth     | 27 (31)                        | 26 (28.9)                        |              |

a: chi square

## DISCUSSION

In this study—which is conducted as experimental and prospective—to identify the effects of the child birth training program on the choice of birth route, 87 pregnant individuals participated in the child birth training program. Radical changes appear for both male and females during the transformational process to parenthood. Prior to birth, training is conducted for all

parents across the world in order to develop strategies to overcome issues in birth and parenthood.<sup>14</sup>

In our study, while the rate of preference for vaginal birth was 70% prior to training, the shift to complete vaginal birth preference after completing the training program shows the importance and efficiency of the training, and the effect it has on birth route choice. Karabulutlu<sup>15</sup> found this relation to be

statistically significant. It is found that 90.9% of the women who prefer vaginal birth are obtaining information related with birth choices.

In a study conducted, it is found that most women prefer vaginal birth, and their reasons for this choice are similar to ones found in our study.<sup>16</sup> Birth is a physiological and universal event and, as a result, the reasons for birth choice show similarities throughout different studies.<sup>16,17</sup>

It is found that most women make their own decisions regarding the birth route (60%). Vaginal birth is the preferred birth route and the most commonly conducted, which suggests that the eagerness and decisions of the moms-to-be are important. Also, as the number of primipara pregnancies are high, and their preferred birth method is vaginal birth, this increases hopes for decreasing the ratio of caesarean birth.

The fear of birth is an important factor in cesarean choice. Serçekuş and Başkale<sup>18</sup> found that child birth training reduces the fear of birth, and increases the maternal self-sufficiency in the means of child birth. It is found that vaginal birth rates increased for the women who participated in the child birth training program during this study. Similarly, Stoll and Hall's study shows that the vaginal birth rates are higher for women who participate in a child birth training program.<sup>19</sup> The reason behind this is a reduced fear of birth, and a developed self-confidence among the women that participated in training that they can have a successful birth. Where our studies differs from others is that, even though the preferred birth route for

women who participated in the training changed to vaginal birth completely, it is found out that the actual performed birth route shows similarities with the group that did not participate in the training program.

Our study shows that women have a cesarean operation birth more often than they plan. This situation shows that even though the eagerness for normal birth is high among women, the role of medical indications must also be considered. Unprogressive labor is the most common reason when examining the causes of cesarean section. Fetal distress, meconium aspiration, macrosomia, optional and social indication, and malpresentation have been the other causes for cesarean section in decreasing frequency. Statements made by the women show the rate at which the doctor made the birth method decision is 78.6%, which is also an important finding. A reason for this is that legal actions taken against the doctors regarding problems occur after the vaginal births.<sup>20,21</sup> The belief that a cesarean birth generates lower risk for both mother and baby compared to a difficult vaginal birth is emphasized as the reason for cesarean preference.<sup>22,23</sup> Also, moms-to-be consider cesarean birth more controlled and safe, as the process time is observed by maternity experts and its necessity followed throughout the process.<sup>24</sup>

Cesarean birth rates have increased for years in our country, as it has across the world. As the cesarean birth rate in Turkey was 8% between 1988 and 1992, it has increased to 48.1% according to the data of Turkey

Population and Health Research (TPHR).<sup>25</sup> According to the comparison made between normal birth and cesarean birth in facilities that are a part of the Kocaeli State Hospitals Community General Secretary, the rate of cesarean is 37.1%. This shows that the development of technology and surgical techniques, the use of antibiotics and blood transfusion, and the increased safety of anesthesia methods are the reasons that cesarean birth is finding increasingly more application areas. In our study, a cesarean birth was performed in both of the groups at a rate lower than the TPHR's rate. This emphasizes the importance of these studies in order to decrease the cesarean rate.<sup>25</sup>

In a recent study from our country, women that participated in the child birth training program had a greater rate of vaginal birth.<sup>26</sup> Gözükara and Eroğlu<sup>27</sup> state in their study—which was made to designate factors that lead to birth route choices for women—that 86.2% of the women planned vaginal births, and 13.8% planned cesarean births, while more cesarean births were performed (38.6%) in contrast to planned rates. Again, in the same study, it is found that 16% of the women asked medical personnel for information, and most preferred their medical personnel as a doctor (87.5%), midwives (8.9%) and nurse (3.6%), respectively.

In our study, almost all of the pregnant individuals stated that they made the choice of birth route solely or with their partner. Gözükara and Eroğlu<sup>27</sup> found in their studies that more than half of the women make the decision of birth route by themselves (57.6%), and the most

influential person affecting their choice is their mothers (35.1%), partners (30.5%) and close relatives (29.6%). As many factors play an important role in the choice of birth route, normal vaginal birth must be suggested if there is no medical indication. Chu et al.<sup>28</sup> found in their study that 19.9% of the 151 (31.9%) women who had cesarean births did so without any medical indications. Şentürk et al.<sup>29</sup> found that 57 out of 127 women who had a cesarean birth had a history of a cesarean story, while 70 of them had vaginal birth.

Pregnancy brings many differences to a woman's life. Somatic, psychologic, and social areas are concerns for many women participating in the maternity training classes.<sup>30</sup> Child birth trainings are beneficial for women in many ways, as well as the provided help for the choice of the birth route. A recent study, found that satisfaction regarding the birth is greater for the women that participated in child birth training, and episiotomies and births started by intervention are lesser.<sup>26</sup> Coşar and Demirci<sup>31</sup> found the women who participated in child birth training and were supported in birth to have a more positive perception towards birth and have a better adaptation process. Mete et al.<sup>32</sup> state that child birth training also has a positive effect on breast feeding. Lack of knowledge for the unknowns in pregnancy increases the stress and requires more medical intervention.<sup>33</sup>

Firouzbakht et al.<sup>33</sup> state that knowledge among mothers increased, and their fears decreased during pregnancy, as a result of training and supportive actions.

## Conclusions

In this study, it is found that antenatal training has an effect on the choices of the birth route made by the women who participated in the child birth training program. For a woman to make her correct choice of birth route, she must receive qualified and sufficient treatment from preconception to the period after birth, alternative birth routes, and sufficient consultancy to overcome the birth pain and learn healthy relaxation methods. In regards to the results obtained, it is suggested that the nurses and midwives—who are primarily responsible for pre-birth maintenance service within the medical personnel—inform and consult the pregnant women and their families regarding the birth and birth routes, as well as the opening of child birth preparation classes nationwide, and provide free-of-charge service so more moms-to-be can benefit from and popularize these recommended classes.

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