Statistical Analysis of the Choice for Natural Birth as an Achievable Outcome through Midwife Pre-natal Counseling – a Pilot Study

Veselka Mihaylova¹, Daniela Draganova¹

¹ Department of Healthcare, University of Ruse “Angel Kanchev”, Bulgaria

Abstract - Normal birth is as exciting as it is a worrying process for every pregnant woman. Surely, everyone makes a distinction between natural birth and Caesarean section. For most people, however, natural birth means any birth that takes place through the natural birth canal. In fact, this is the normal birth, which does not always mean natural. The purpose of the conducted experiment is to study the attitudes of pregnant women and to determine the effect of using prenatal training as a means of achieving natural childbirth with a midwife’s assistance.

Keywords - Prenatal counseling, natural childbirth.

1. Introduction

Natural birth assisted by a midwife is the optimal care option for women with normal pregnancy and this care also doesn’t seem to increase the risks for mothers and newborns [1]. The experience of childbirth has been described as profoundly remarkable and a life-affirming event for many women [2].

Since the mid-twentieth century, in a lot of countries, more women give birth in a hospital setting as compared to a home birth setting, thus, making continuity of labor care more of an exception than a rule. Concerns are raised in regard to dehumanization, evidenced by women’s experiences during childbirth and this has led to calls for a return to continuous one-on-one support for pregnant and laboring women through the use of interventions guided by a midwife [3].

Birth presents as one of the most psychologically challenging events during a woman’s life, as 10–34% of all women who went through labor, faced traumatic birth experiences [4]. Negative birth experiences are associated with post-traumatic stress disorder (PTSD), interpersonal disruption, dysfunctional bonding between a mother and her child, reduced breastfeeding rates, fear of childbirth, and increased inclination for planned surgical delivery in the future [5]. Women develop fears of natural birth and prefer cesarean section births [6].

Mass medicalization, routine hospitalization, disregard for women's wishes, and the imposition of C-sections as a means of better choice have led to a subsequent boom in "Cesareans" worldwide.

The resulting increased number of surgical births led to further advocates of natural childbirth. In 2018, the World Health Organization published recommendations for positive birth experiences. It accentuates on care as a critical aspect of guaranteeing better birth experiences and improved outcomes for women. Recommendations include prenatal courses, informed choice and body autonomy for women, the use of birth plans as an informational and educational tool [7], [14]. A positive birth experience improves women's health, increases their self-esteem and enhances the mother-child relationship [8]. Educating and guiding pregnant women can help them by increasing their awareness of childbirth and the associated improvement of psychological preparedness to deal with pain during childbirth. This, in turn, is essential for choosing the most optimal delivery method [9].
The American College of Obstetricians and Gynecologists (ACOG) emphasizes the core philosophy of respect, support and care for the pregnant and birthing woman. A positive birth experience correlates with a better bonding process, positively influences maternal capacity, as well as the woman’s sense of accomplishment and self-esteem within motherhood. As fear of childbirth is one of the independent predictors for birth trauma, this problem can be addressed by timely childbirth education [10].

Psychological prevention is of great importance and consists in preparing the pregnant woman for the upcoming birth by conducting a sufficient number of talks, in a language accessible to the mother and in a favourable environment. The aim is to raise the threshold of excitability of the cerebral cortex, therefore to suppress the perception of pain, reducing to a minimum the fear of the upcoming birth.

Interventions in this process through drugs, anaesthetics or Caesarean section disrupt this subtle mechanism, that affects the adaptation of the baby, the behaviour and emotions of the mother and the relationship between them [11].

2. Discussion

Evidence shows that prenatal childbirth training reduces women's fears through by improving their competence on pregnancy, birth and postpartum life, thus decreasing Caesarean section requests rates. Pregnant women who practice relaxation and breathing techniques, have a better chance of trusting themselves, by having decreased anxiousness and more positivity about their birth experience [12]. In the modern training of midwives, clinical cases are included, which form the correct organization of health care for women [13]. The present pilot study aims to determine the effect of implementing prenatal as a means of achieving natural childbirth with fewer complications.

After preliminary interviews with pregnant women regarding their wishes and attitudes, we equipped a birthing simulation room at Angel Kanchev University of Ruse. The environment in the room is very different from that in a medical facility. 10 groups of six pregnant women each were formed after filling out an informed consent to participate in the experimental training and the birth of the participants was followed.

The course is structured in five modules, it takes place in the specialized room for natural childbirth.

**Module Nr.1 "Active physiological birth"
- Physiology of natural childbirth.
- Periods and duration of labor.
- Admission to the Department of Obstetrics and Gynecology, what is ahead of me?

**Module Nr.2 "Pain and remedies"
- Non-drug pain relievers.
- Breathing techniques, audiotherapy, and aromatherapy.
- Medicinal anaesthesia.

**Module Nr.3 "Hospital Medical Procedures and Interventions"
- Indications, contraindications and alternatives.
- Caesarean section.
- Birth plan.

**Module Nr.4 "Newborn"
- First contact with the newborn.
- Breastfeeding and evidence-based techniques.
- First care for the newborn - hygiene.

**Module Nr.5 "After Childbirth"
- Care for the woman who has already given birth.

The object of this research is the impact of the training by a midwife aimed at pregnant women, to achieve natural birth and monitor the presence of complications at birth.

The subject of this study are pregnant women in the last trimester of the pregnancy who have undergone prenatal training by a midwife using a model for obstetric care with an individual approach, for normal birth.

For the purposes of the study, we introduced the concepts of experimental group (EG), including pregnant women undergoing prenatal training and control group (CG) all giving birth for the first time without the training. The conducted research in no way reduces care for one group or the other, but upgrades prenatal consultations. The survey was conducted for three months between August 15 - October 15, 2022.

Criteria for including and excluding from the study
Criteria for including patients in prenatal education:
- Pregnant women in the third trimester of the pregnancy
- Normal pregnancy, without data for abnormalities
- Pregnancy is observed by a gynecologist and a midwife.
- Giving birth for a first time.
- Age 18-40 years
- Pregnant women aiming for natural birth
- They have declared a written informed consent for inclusion in the experiment.
Criteria for excluding patients from the training:

✓ Premature birth
✓ Developing a health problem during pregnancy
✓ Women who gave birth more than once.

Criteria for excluding patients from the statistics of the study:

✓ In the course of natural birth complications occurred and a change in the therapeutical plan was required

Observed indicators in the experimental and control group:

✓ Total number of trained pregnant women and women who gave birth
✓ Women who gave birth in a natural physiological manner
✓ Complications occurred during childbirth
✓ Women who gave birth through a C-section
✓ Causes of a C-section:
  ➢ Late-term pregnancy and lack of active labour;
  ➢ Fetal distress;
  ➢ Failure to progress in labour;
  ➢ Large fetus (fetal macrosomia);
  ➢ On medical indications;
  ➢ Optional and due to pathological fear in the pregnant woman.

Processing of the results was carried out with the statistical processing package SPSS 19.0

During the observed period, of the pregnant women who received training from a midwife, 58 women gave birth. Table 1 shows the type of delivery of the trained women, and Table 2 shows the presence of birth complications.

Table 1. Type of delivery of the trainees

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>Normal</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>C-section</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>58</td>
</tr>
</tbody>
</table>

Table 2. Type of delivery of the trainees – complications

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>Without complications</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>With episiotomy</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>C-section</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>58</td>
</tr>
</tbody>
</table>

From the data in Table 1 and Table 2, we observe that 67.2% of the births were without complications, and 24.1% with mild normal birth complications. Only 8.6% of all births of the trainees gave birth through C-section.

The causes of C-section are:
- fetal distress – 1 case;
- Failure to progress in labour – 1 case;
- Late-term pregnancy and lack of active labour - 3 cases.

During the same period, we also observed the delivery of women from the control group who met the same criteria for inclusion in the study but did not receive training on natural physiological birth. They received the standard care for all pregnant women – they attended consultation and pregnancy follow-up by a specialist and gave birth in a hospital under the same conditions as the female participants within the experimental group.

Table 3 demonstrates the difference in the mode of delivery of the observed cases in the experimental and control group.

Table 3 illustrates how more than half of births - 53.45% (31) are through C-section.

Table 3. Comparison table EG – CG

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Result of EG</th>
<th>Result of CG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal birth without complications</td>
<td>39</td>
<td>13</td>
</tr>
<tr>
<td>Normal birth with episiotomy</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>C-section</td>
<td>5</td>
<td>31</td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>58</td>
</tr>
</tbody>
</table>

Increasing pregnant women's knowledge of childbirth and pain management strategies can increase women's self-efficiency to achieve a natural birth.

Improved care by midwives is an important factor in reducing surgical interventions during childbirth. Change in hospital units through improved communication and implementation of new practices can be helpful for achieving better obstetric outcomes.

Table 4. Reasons for C-section – not trained

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fetal distress</td>
<td>5</td>
<td>8.6</td>
<td>16.1</td>
</tr>
<tr>
<td>Failure to progress in labour</td>
<td>7</td>
<td>12.1</td>
<td>22.6</td>
</tr>
<tr>
<td>large fetus</td>
<td>2</td>
<td>3.4</td>
<td>6.5</td>
</tr>
<tr>
<td>Late-term pregnancy and lack of active labour</td>
<td>6</td>
<td>10.3</td>
<td>19.4</td>
</tr>
<tr>
<td>On medical grounds – concomitant illnesses</td>
<td>7</td>
<td>12.1</td>
<td>22.6</td>
</tr>
<tr>
<td>On demand</td>
<td>4</td>
<td>6.9</td>
<td>12.9</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
<td>53.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Missing System</td>
<td>27</td>
<td>46.6</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
In the control group, new reasons for C-section emerged – medically indicated and on demand. The latter is particularly worrisome given the risks of operative intervention for the mother and newborn. When we determine the present correlations between the included variables and their significance level in the experimental group and in the control group, we discover its relevance is considerable enough to prove the hypothesis. Namely that prenatal training by a midwife leads to a higher chance of natural physiological birth with fewer complications.

By comparing the data from the two observed groups the absolute number of connections and their statistical dependence were established (** - significant correlation in \( P = 99\% \) and * - significant correlation in \( P = 95\% \)) in the studied and formed comparison group and was presented by the corresponding correlation matrix, in which the empirical values of the Pearson coefficient were given. We looked for statistical significance of the result (Tables 5 and 6) by correlation analysis.

### Table 5. Correlations Experimental group

<table>
<thead>
<tr>
<th>Type of birth training</th>
<th>Presence of complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed) N</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>.519</td>
</tr>
<tr>
<td>Sig. (2-tailed) N</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>.000</td>
</tr>
</tbody>
</table>

### Table 6. Correlations Control group

<table>
<thead>
<tr>
<th>Type of birth training</th>
<th>Presence of complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed) N</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>.908</td>
</tr>
<tr>
<td>Sig. (2-tailed) N</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>.000</td>
</tr>
</tbody>
</table>

The higher correlation value of the observed control group shows us a significant connection between training and the presence of birth complications. This proves the working hypothesis - prenatal training of pregnant women by a midwife leads to a natural birth associated with fewer complications.

### 3. Conclusion

The favourable environment created led to a birth with fewer complications and interventions by medical personnel. The benefits of prenatal education are great and have real effects on training and preparation for birth and raising the newborn.

Women who attend childbirth training classes are more satisfied with their births. Through non-clinical interventions led by midwives, pregnant women's fear and anxiety can be reduced. An individual approach to the woman in labor is a key point in achieving a physiological birth.

The result of the conducted research confirms the fact that women who attended an education course on natural childbirth had fewer C-section births than women who did not attend.

The data analysis showed that there is still no established practice in prenatal education in the Ruse region. Steps need to be taken to promote this effective method, which is likely to increase the number of natural births. As experts in the field, healthcare professionals are fully equipped to deliver educational sessions that build trust between patients and midwives, improve communication and offer women clear options for informed choice and management of the birth process. Advocacy on the part of the health system and the implementation of this type of psychological training in women's gynecology consultations is necessary. Midwives play a key role in facilitating natural childbirth. Training builds confidence in the midwife providing health care and confidence in hospital facilities.

Despite the apparently good results, there was no statistically significant difference between those who gave birth with and without training, which is probably due to the short observation period.

The method of prenatal education has proven its effectiveness and the need to include it in the curriculum in the training of midwifery students.

### Acknowledgements

The study is part of a project No 2022 - FOZZG – 02 financed by the "Angel Kanchev" University of Ruse "Scientific Research" fund. The topic of the project is creation of a research laboratory environment for conducting physiological childbirth.

The training was conducted by a PhD candidate with the assistance of specialists from the maternity wards of the city's hospitals.

We thank the University of Rousse for the opportunity to equip a laboratory ,the obstetrics and gynecology departments of the hospitals for the opportunity to conduct a pilot study for a planned larger study.
References


