# Exploring Breastfeeding Practices among Women Who Delivered by Cesarean Section Compared to Those Who Had Vaginal Delivery in Yerevan Maternity Hospitals:

## A Qualitative Study

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by

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## List of Abbreviations

**AUA**- American University of Armenia

**BFHI**- Baby Friendly Hospital Initiative

**BFPI**- Baby Friendly Polyclinic Initiative

**CS**- Cesarean Section

**ICU**- Intensive Care Unit

**IRB**- Institutional Review Board

**NICU**- Neonatal Intensive Care Unit

**UNICEF**- United Nations International Children's Emergency Fund

**VD**- Vaginal Delivery

**WHO**- World Health Organization

## Abstract

***Background***: Breastfeeding is the most preferable form of infant nutrition. It ensures good health outcome for both mother and child. Breastfeeding initiation saves more than 823,000 lives of children under five years old and prevents development of breast cancer among more than 20,000 women annually. There are lots of factors affecting proper initiation of breastfeeding, one of which is considered cesarean section (C-section). Some studies found that there is a negative association between early initiation and overall duration of breastfeeding and C-section. According to World Health Organization (WHO) estimates, the ideal rate of C-section is 10%-15% that ensures the balance of health risks and benefit. However, the C-section rate increased up to 21% globally and it reached 38% in Armenia in 2022. Hence, the study aimed to explore breastfeeding practices among women with C-section compared to those with vaginal delivery, to understand the gaps and barriers that hinder proper breastfeeding initiation and healthcare providers' involvement in breastfeeding support and promotion.

***Methods***: A qualitative methodology was used for implementing face-to-face in-depth interviews among mothers who were 18 years and above, had a live birth with C-section or vaginal delivery in Yerevan maternity hospitals and had a child less than 13 months. The study participants were recruited through purposive convenience sampling. The recruitment continued until the meaning saturation was achieved. The primary data collection was implemented from April 17$^{th}$ to 21$^{st}$, 2023. A thematic analysis with deductive approach was used for the data analysis. Within each pre-defined theme, the codes with similar contextual properties were combined through inductive approach to create the code book.

***Results***: Out of 17 participants eight gave birth via C-section and nine had vaginal delivery. All C-sections were conducted due to medical indications, and none of them for the mothers' preference. The mean age of women with CS and VD were 30.1 and 29.1, respectively. Almost all participants were from Yerevan and had higher education. The mean age of the youngest child was 8.6 months among mothers with VD and 7.8 months among women with CS delivery. The findings of this study were grouped into five main themes: 1) General information about the history of pregnancy and delivery, 2) Participants' breastfeeding practices in the delivery room, 3) Participants' breastfeeding practices in the postpartum department, 4) Participants' breastfeeding practices after being discharged, 5) Maternity hospital healthcare providers' involvement in breastfeeding promotion. The findings of this research revealed that CS delivery adversely effects the proper breastfeeding initiation. Skin-to-skin contact between mother and child immediately after birth was not initiated among mothers with CS delivery. On the contrary, all mothers with VD reported having skin to skin contact with their children immediately after birth. However, only one mother initiated breastfeeding in the delivery room. The early breastfeeding initiation was postponed from 6 to 24 hours among mothers who delivered via CS compared to mothers with VD who started their first breastfeeding two hours after delivery. All mothers (with CS and VD) remained together with their babies 24/7 hours while being in maternity hospitals. General problems stated by mothers at the time of breastfeeding initiation (regardless of delivery mode) were the perceived small body size of baby, difficulties in attaching to the breast and mothers' perception that the child was remaining hungry. According to mothers, the reasons for discontinuation of breastfeeding were low supply of milk, cracked nipples, and breast engorgement. None of the participants received consultation by healthcare providers about child nutrition and breastfeeding during prenatal period. Mothers received healthcare providers' support only in the post-delivery department, which was not satisfactory, as it was provided only at mother's request, often was insufficient and contradictory.

***Recommendations***: The results of this study highlighted the need of revising the breastfeeding promotion policies in maternity hospitals of Armenia, implementing trainings among healthcare providers that could help them to develop proper skills in breastfeeding support and promotion, developing and implementing prenatal educational programs that could raise mothers' awareness and prepare them to initiate breastfeeding properly.

# 1. Introduction

## Breastfeeding Benefits and global statistics

According to World Health Organization (WHO), the optimal way of child nutrition is exclusive breastfeeding during the first six months of life; afterward, infants should get complementary foods combined with continued breastfeeding for up to 2 years of age or more (WHO, 2018). WHO together with United Nations International Children's Emergency Fund (UNICEF) recommends that the initiation of breastfeeding should start within the first hours of an infant's life by ensuring skin-to-skin contact immediately after birth, which is the first and very important step in promoting breastfeeding and reducing infant and child mortality (WHO|UNICEF, 2018).

Breastfeeding is considered to be the healthiest and safest method of infant nutrition. It ensures good short- and long-term health outcomes both for mothers and babies (Brockway et al., 2017). According to a meta-analysis of many studies, breastmilk provides essential immune-protective and nutritive benefits to the infant for the healthiest start of the baby's life (Brockway et al., 2017).

In addition to this, breastfeeding has psycho-emotional, economic, and environmental benefits (Tulay et al., 2015). During the first six months of their life, the infants who receive breast milk exclusively have a lower risk of developing diseases such as childhood gastrointestinal infections, respiratory diseases, sudden infant death syndrome, as well as non-communicable diseases, particularly obesity, cardiovascular diseases (CVD), and diabetes mellitus later in life (Tulay et al., 2015). The mothers who initiate breastfeeding had the lower chances of developing certain diseases such as breast and ovarian cancer, osteoporosis, type 2 diabetes and hypertension (Eidelman et al., 2012).

According to some studies, only 37% of children younger than 6 months, that live in low- and middle-income countries, are exclusively breastfed (Victora et al., 2016). However, the likelihood of infants ever being breastfed is higher in low- and middle-income countries compared to high-income countries (UNICEF, 2018). UNICEF reports that only 4% of infants never received breast milk in low- and middle-income countries, while in high-income countries 21 % of infants are never breastfed (UNICEF, 2018).

Suboptimal breastfeeding and childhood morbidity and mortality are interchangeably connected. It was estimated that breastfeeding saves more than 823,000 lives of children aged up to 5 years annually and prevents more than 20,000 deaths from breast cancer each year throughout the world (Victora et al., 2016).

**Cesarean section and magnitude of the problem**

Cesarean section (CS) is a surgical procedure during which fatal delivery is implemented via abdominal (laparotomy) and uterus (hysterotomy) resection (Sung & Mahdy, 2023). The natural and physiological process of giving birth is vaginal delivery. It is considered the safest and healthiest mode of giving birth for both mothers and babies when the fetus is fully developed and is in the gestation period of 37 to 42 weeks (Lagrew et al., 2018). However, in recent years, cesarean section has become a preferable way of giving birth globally (Wen et al., 2020).

Today cesarean section is considered one of the most frequently conducted surgeries worldwide (Souza et al., 2010). According to WHO, the ideal cesarean section rate that balances cesarean section risks and benefits ranges between 10% to 15% (WHO, 2018). However, studies conducted between 2010-2018 in 154 countries, showed that out of 94.5% of live births, 21.1% of mothers gave birth via C-section throughout the world (Betran et al., 2021).

The highest rate of CS was reported in Eastern Asia (44.9 %), Latin America and the Caribbean (43%), Western Asia (34.7%), and Northern Africa (31.5 %) (Betran et al., 2021)(WHO, 2021). From 1990 up to today, the cesarean section rate has increased from 7% to 21% globally and if this tendency continues, by 2030, in some regions like Eastern Asia, Latin America and the Caribbean, Western Asia, Northern Africa, Southern Europe, and Australia and New Zealand, the cesarean section rates would reach to 63%, 54%, 50%, 48%, 47%, and 45%, respectively (WHO, 2021).

Taking into consideration certain factors, medically justified cesarean section may have a protective effect on babies' and mothers' health (WHO, 2021). However, the increasing rates of cesarean sections, above a certain threshold, may be a reason for maternal and fetal morbidity (WHO, 2018).

**Key determinants of cesarean section**

The factors leading to an increased rate of CS are difficult to identify since they vary from country to country. However, WHO separated some general determinants explaining the increasing rate of CS such as obesity, infertility, giving birth at an older age, and past history of CS (WHO, 2018). Other studies also approve WHO's statement suggesting that the increasing CS rate is associated with maternal and fetal weight gain during pregnancy and delivery at an older age (Kirchengast & Hartmann, 2018). The CS rate among mothers aged 20 to 34 was 26%, compared to 41% among mothers aged 35 to 40 years and above (Janoudi et al., 2015).

WHO also identified non-clinical factors that lead to conducting CS, including social and economic factors such as determining the date and time the baby will be born, or the need to return to work depending on the financial responsibilities of the family (WHO, 2018). Another non-clinical incentive of performing cesarean sections is the healthcare providers' financial

interest in conducting CS. A meta-analysis of 11 different studies suggests that private hospitals, working for-profit, conduct more CS surgeries compared with non-profit hospitals since the average cost of hospitalization is higher among women who delivered via CS compared with vaginal delivery (Hoxha et al., 2017) (Negrini et al., 2021).

Giving birth via cesarean section is strongly associated with short- and long-term health risks for the child, mother, and her future pregnancies (WHO, 2018). The short-term risks that CS delivery may cause to women are uterus inflammation, urinary tract infections, acute abdominal pain, and bleeding (Wang et al., 2010). The long-term risks the CS may cause are associated with future pregnancies: the rupture of the uterine, still- and preterm birth, ectopic pregnancy, etc. (Lagrew et al., 2018). The babies borne via CS are more likely to have a weak immune system, allergies, and respiratory tract infections, and later in life, they may also develop some non-communicable diseases such as diabetes mellitus, obesity, asthma, etc. (Słabuszewska-Jó et al., 2020).

According to some studies, one of the long-term risks for both mother and child that CS causes is not proper initiation of breastfeeding (Rahman et al., 2022).

**Breastfeeding practices and delivery mode**

A study, which investigated early breastfeeding behavior among women who underwent CS, found that there is a strong negative association between cesarean section and breastfeeding rate (Zhang et al., 2019). Another population-based study conducted in Ethiopia among 5564 live births, suggested that women who delivered by CS had an 86% lower rate of early breastfeeding initiation (John et al., 2019).

A qualitative study conducted in China in 2019 that tried to explore breastfeeding behaviors among women who delivered by CS found that out of 19 participants, 13 underwent

CS as planned and 6 were urgent cases (Wen et al., 2020). The main challenges to breastfeeding initiation the study participants faced after CS delivery were physical inconveniences such as abdominal pain, dizziness, weakness, lack of knowledge and skills about breastfeeding techniques, and difficulties in managing and controlling post-delivery depression (Wen et al., 2020).

The results of another quantitative study suggest that mothers who gave vaginal birth had higher chances to start breastfeeding within the first 24 hours after delivery than those who delivered by CS. Mothers who gave birth via CS reported having difficulties in holding and breastfeeding their babies because of post-surgical pain (Albokhary & James, 2014).

A meta-analysis performed in 33 countries of sub-Saharan Africa showed that those who delivered by CS had a 46% lower prevalence of early breastfeeding initiation (Yisma et al., 2019). A prospective cohort study conducted in Canada showed that among 739 women delivered by CS, out of which 438 (15%) were urgent CS, 40% reported unsuccessful practices on their first attempt at breastfeeding (Hobbs et al., 2016).

Another study investigating the association between colostrum feeding and cesarean section delivery among Indian women aged 15-49 indicates that the early breastfeeding initiation rate among mothers who delivered normally was 72% compared to 56.7% among those who delivered via CS (Aditi et al., 2022).

The CS delivery is associated with early discontinuation of breastfeeding, since some studies found that mothers who delivered via CS showed lower rate of exclusive and continuous breastfeeding (Hobbs et al., 2016). A prospective cohort study conducted in China showed that among mothers with CS delivery the rate of exclusive breastfeeding during the first, third and

sixth months postpartum were 71.3%, 60% and 20.2% respectively, compared with 86.2%, 72.5% and 22.4% among mothers who had vaginal delivery (Chen et al., 2018).

A qualitative study exploring the factors associated with delayed initiation of breastfeeding showed that early and continuous breastfeeding initiation was postponed among women who delivered by CS. During in-depth interviews, women reported having physical inconvenience, acute abdominal pain, fear to breastfeed, and weakness after CS delivery (Kalisa et al., 2015).

**Baby Friendly Hospital Initiative (BFHI)**

To promote, support, and protect early and long-term breastfeeding practices among mothers, regardless of the delivery mode (vaginal or cesarean section), in 1991-1992, WHO together with UNICEF developed the Baby Friendly Hospital Initiative (BFHI), the aim of which was to establish a good and proper start and continuation of breastfeeding (World Health Organization & UNICEF, 2009). Within the scope of BFHI, a global strategy has been developed named "Ten Steps to Successful Breastfeeding" (Box 1) (World Health Organization & UNICEF, 2009). These steps are mainly directed to improve clinical management such as having written policies and guidelines for breastfeeding promotion and trained specialists who will implement the assigned policies.

"Ten Steps to Successful Breastfeeding" also defines important points for clinical practice that promote early breastfeeding initiation, as well as exclusive and continuous breastfeeding. They cover points about the importance of ensuring skin-to-skin contact between mother and baby immediately after birth, rooming-in that will ensure the mother to stay together with her baby 24 hours a day without separation, providing assistance and support to the mother

during the breastfeeding processes (A Mother's Gift, for Every Child | BREASTFEEDING, UNICEF, 2018).

A study evaluating the effectiveness of "Ten Steps to Successful Breastfeeding" on the exclusive breastfeeding rate, suggests that the exclusive breastfeeding rate increased from 2.4% to 49% after BFHI implementation (Clermont et al., 2021). Another study investigating the effectiveness of early skin-to-skin contact and rooming-in showed that breastfeeding rate increased from 6% to 22.7% by ensuring early skin-to-skin contact. The study also suggests that the chances of initiating continuous breastfeeding till 6 months of baby's life increased significantly by ensuring rooming-in for 24 hours a day (Chiou et al., 2014).

**Breastfeeding situation and Baby Friendly Hospital Initiative (BFHI) in Armenia**

With the joint effort of the Ministry of Health of the Republic of Armenia and UNICEF Armenia, in 1999, Armenia became a part of BFHI and in 2003, the Baby Friendly Polyclinic Initiative (BFPI) had been developed as an adapted version of BFHI (Harutyunyan S. et al., 2011). According to the UNICEF 2018 survey, Armenia reported having a 96.5% rate of infants ever being breastfed (A Mother's Gift, for Every Child | BREASTFEEDING, UNICEF, 2018). Unfortunately, the latest population survey-based data on breastfeeding rates is available from the Demographic and Health Survey (DHS) 2015-16 survey, since no DHS surveys were conducted in Armenia since then (National Statistical Service, 2017). Accordingly, from 2000 to 2016, early initiation, exclusive (under 6 months), and continuous (12-23 months) breastfeeding rates increased from 24.5% to 40.9%, 29.5% to 44.5%, and 14.3% to 21.6%, respectively (Data Warehouse - UNICEF DATA, 2021).

Among countries reporting an increasing rate of CS, Armenia is not an exception, since it reported an increase in CS rates from 2000 (7.2%) to 2021 (37.5%) (Fig. 1) (Health and

Healthcare, 2022). A study investigating the factors describing the increasing rate of CS in Armenia showed that the increasing CS rate in Armenia is associated with maternal requests to perform CS, lack of proper regulations, and financial motivation of obstetrician-gynecologists since they receive more bonus payment for performing CS rather than vaginal delivery (Tadevosyan et al., 2019). Our literature review did not yield any study investigating the breastfeeding experiences among women who delivered via CS compared to those who delivered via vaginal delivery in Armenia.

**Study aim**

The CS rates are steadily increasing in Armenia and mothers throughout the country tend to choose maternity hospitals in Yerevan for giving birth because of the higher-quality obstetric services in these hospitals (Truzyan et al., 2010). Hence, it is of great importance to investigate whether the mode of giving birth has an influence on breastfeeding initiation in maternity hospitals in Armenia, particularly in Yerevan**.**

Consequently, this study aims to investigate and explore women's practices of breastfeeding who underwent cesarean section compared to those who had a normal delivery, the associated factors influencing mothers' decision and ability to breastfeed, and healthcare professionals' support to women in successful breastfeeding initiation. Accordingly, the research questions of the study are the following:

- What are the breastfeeding practices of mothers who underwent cesarean section and those who had vaginal delivery in Yerevan, Armenia?
- What are the factors that contribute to non-initiation, delayed initiation, or early discontinuation of breastfeeding among mothers who were delivered by cesarean section and among those who had vaginal delivery in Yerevan, Armenia?

- How does maternity hospital healthcare providers' involvement impact breastfeeding promotion after cesarean section or normal delivery?

# 2. Methodology

## 2.2. Study design

To address the research question, a qualitative approach was used, through face-to-face, semi-structured in-depth interviews with mothers, which allowed the exploration of the factors of breastfeeding initiation (or non-initiation, delayed initiation), or early discontinuation of breastfeeding among women who were delivered by cesarean section and among those who had vaginal delivery in Yerevan maternity hospitals. Due to the limited research on the topic of interest in Armenia, this qualitative research helped to obtain a deeper understanding of barriers and obstacles that mothers face and support they get from providers depending on the mode of their delivery in maternity hospitals in Yerevan.

## 2.3. Study population

The study population included women who were 18 years and older, had vaginal or cesarean section delivery in one of the maternity hospitals in Yerevan, had a live birth and the child was less than 13 months old at the time of interview. Those who delivered in maternity hospitals outside Yerevan, had infants with low birthweight, were moved to the Neonatal Intensive Care Unit or the baby was older than one and a half years at the time of recruitment were excluded from the study.

## 2.4. Sampling and participant recruitment

The study participants were recruited using a purposive and convenience sampling method through the snowball technique. The sampling frame and information of the eligible candidates were obtained through the contacts of the student investigator. A telephone call was made to check for potential interviewee's eligibility, ask for her assent to meet, and make an appointment for the interview at the date, time, and place suitable for her. After interviewing the

first eligible participant, she was asked to suggest someone eligible from her circle of acquaintances who would be interested in participating in this research. Almost all interviews were conducted during the daytime in the playgrounds and parks. The meaning saturation was used to determine the sample size.

**2.5. Data collection and management**

The data was collected through face-to-face in-depth interviews from April 17$^{th}$ to 21$^{st}$, 2023. Each day more than three participants were approached. The whole data collection process was conducted by the student investigator. Each day more than three participants were interviewed. Before starting the interview, the interviewer introduced herself and represented the main purpose of the study to each participant. After getting the agreement of participating, the interviewee was provided with informed consent (see Appendix 1). The audio recording was conducted during the interviews with the interviewees' permission to gather complete information for further analysis. In those cases when the interviewee refused audio recording, the information was obtained via detailed note-taking by the interviewer. The mean duration of the interviews was approximately 25-35 min, varying depending on the way participants responded to the proposed questions.

All participants were assigned ID numbers instead of names while completing the demographic data. The recording of interviews was done via student investigator's cellphone. After completing the interviews, audio recordings were transferred into password-protected computer via a USB channel and deleted from the phone. All the audio recordings were transcribed in Armenian. Then after converting all the recordings into transcriptions, the latter was deleted from the computer as well. During the transcription, all the personal and identifiable information, both taken from audio recordings and via notes, were anonymized, so that the

transcriptions would not contain any identifying information. Hence, all the identifiable sources of obtained information were destroyed at the end of the study. The information inserted into the gadgets was deleted and the paper-based notes were teared up at the end of the data analysis. Only the study advisors and student investigator had free access to the obtained information.

**2.6. Research instrument**

The study instrument that was used for data recruitment was developed by the student investigator, based on the research questions of the study and reviews of similar studies on the same topic. The interview guide was composed of five main themes, the first four of which aiming to investigate women's breastfeeding practices after cesarean section or vaginal delivery by exploring their pregnancy history, early breastfeeding initiation in the delivery room, breastfeeding experiences in the postpartum department, and after being discharged. The last theme of the study instrument tried to investigate Maternity hospital healthcare providers' involvement in breastfeeding promotion.

The main domains of the study instrument were the following:

1. General information about the history of pregnancy and delivery
2. Participant's breastfeeding practices in the delivery room
3. Participant's breastfeeding practices in the postpartum department
4. Participant's breastfeeding practices after being discharged
5. Maternity hospital healthcare providers' involvement in breastfeeding promotion.

Each unit was composed of 3 to 11 open-ended questions and probes. The study instrument also contained a separate Sociodemographic questionnaire for the study participants, which included questions on their age, marital status, place of residency, education level, employment status, number of children, the mode of deliveries (vaginal and/or cesarean section), the age and

gender of the youngest child, and the name of the maternity hospital they delivered. The Armenian and English versions of the informed consent and interview guide are attached as Appendix 2. Only the Armenian versions of these were used for data collection. After receiving the IRB approval from the Institutional Review Board of the AUA, the guide was pre-tested to check the appropriateness of the questions. Further, the interview guide was modified during the fieldwork as needed, based on the answers provided by the participants. To ensure comparability and dependability the research diary was kept.

**2.7. Data analysis**

Thematic analysis was conducted utilizing the deductive approach. The primary data analysis was conducted during the interview-taking process simultaneously. After reaching meaning saturation, the first cycle of coding was implemented based on which descriptive coding was developed to create the codebook. In addition to that, direct quotations from the responses given by the study participants were used to develop in-vivo coding. The codes with comparable properties and close contextual relationships were combined to create categories using an inductive approach, which later were grouped into the central theme of the research to develop a theoretical map. The latter served as a base to develop the final report of the study.

**2.8 Categorization of study participants**

The direct quotes provided by study participants were represented in the boxes in the Result section. The study participants were categorized into two groups: 1) mothers with CS delivery and 2) mothers with vaginal delivery. Under each quote, the individual informant identifier (e.g., Mother 2.1.2, CS delivery, Hospital 1) was provided to specify the participant from whom the quotes were taken. Each informant identifier was numbered according to the number of subheads of the result section (e.g., Subtheme 2.1 Physical condition after cesarean

section and vaginal delivery), with the consecutive numbers of the given quotes (e.g., Mother 2.1.1), (e.g., Mother 2.1.2), etc. and hospital numbers (e.g., Hospital 1) where mothers gave birth. If more than one quote were used in the same box the number of informant identifier didn't change, but if more than one quote were used from a single participant in different boxes the informant identifier number changed according to the subhead's number.

**2.9. Ethical considerations**

The ethical considerations were of greater importance due to the in-depth nature of this qualitative research. Hence, the interviews were conducted only after receiving approval from the Institutional Review Board (IRB) of the American University of Armenia (AUA). Before starting the interview, the participants were adequately informed about the study's aim and process. Permission was gained from the study participant to conduct an audio recording. The participants were also informed that they have the freedom to discontinue the interview at any time they want and not to answer any question that would make them feel uncomfortable. To ensure and protect the confidentiality, the study participants were assigned ID numbers instead of names and all personal information was anonymized during transcription. Those ID numbers were used for representing the results of the study. All participants were provided with the contact number of the administrator of the Human Participant Protections of the Institutional Review Board of the American University of Armenia to discuss the issues and problems that could had occurred during the interview. Additionally, the summary report of the study will be shared with all the participants.

# 3. Results

## 3.1 Socio-demographic characteristics of the study participants

For conducting in-depth interviews, 18 participants were approached, out of which only one refused to participate. In-depth, face-to-face interviews were conducted among 17 participants, out of which nine had a vaginal delivery and eight had undergone cesarean section. Among women who had a cesarean section, four were primigravida and four were multigravida. Among women who had a vaginal delivery, five were primigravida and four were multigravida. Out of 17 participants, only one refused audio recording, so the information was obtained via note-taking. The mean age among those participants who delivered vaginally was 29.1 years ranging from 20-34 years, and among those who delivered via CS, the mean age was 30.1 years ranging from 25-40 years. All participants except one were married and all except one had urban (Yerevan) residency. Only one participant had lower-than-undergraduate education level. At the time of interview, five participants were unemployed, and 12 were employed, with only a few being on maternity leave. Among women who delivered via CS, the mean age of the youngest child was 8.6 months ranging from 0.5-12 months, while among women who delivered vaginally, the youngest child's mean age was 7.8 months ranging from 2-12 months (Table 1). Five main themes were identified by the student investigator based on the main domains of the interview guide:

1. General information about the history of pregnancy and delivery
2. Participant's breastfeeding practices in the delivery room
3. Participant's breastfeeding practices in the postpartum department
4. Participant's breastfeeding practices after being discharged
5. Maternity hospital healthcare providers' involvement in breastfeeding promotion.

**Theme 1. General information about the history of pregnancy and delivery**

***Subtheme 1.1 The period of pregnancy***

The interview started by talking about the period of pregnancy; most participants reported having a good and smooth process of pregnancy. The main complications pointed out by the mothers were mostly physical, expressed with nausea during the first trimester of pregnancy, gaining body weight, having swollen legs, and feeling heavy.

> *"During the first trimester, it was toxic pregnancy, nausea, vomiting.....during the second trimester, everything was much better, I was even able to travel."*
>
> *(Mother 1.1.1, CS delivery, Hospital 2)*
>
> *"The pregnancy went very well, there were no general complications… No health problems arose during that time. I was a little bit heavy, but it wasn't a health problem, I just gained weight in the last two months and because my baby… She was born with a weight of four and a half kg."*
>
> *(Mother 1.1.2, CS delivery, Hospital 1)*

The other serious complications the participants mentioned were getting infected with COVID-19, having uterine hematoma, and varicose veins. The latter was the reason for one of the participants to deliver via CS:

> *"In general, the pregnancy went normal, except for the nausea of the first 16 weeks……only at the end there were varicose veins, then I got infected with COVID, developed a thrombosis because of COVID and we had to do a cesarean section."*
>
> *(Mother 1.1.3, CS delivery, Hospital 2)*

***Subtheme 1.2 Information about child nutrition and care during pregnancy***

For getting registered in prenatal consultations, all participants applied to maternity hospitals starting from 6-12 weeks of pregnancy and they visited checkups regularly. During the consultations, they said that the main information they received was only about their and babies' health condition. There was no consulting about the right nutrition and care of the child. Mothers reported that at maternity hospitals they received such information only during the post-partum period at the postdelivery department. Before having a baby, all information they got about child nutrition, breastfeeding, and child care was through their own efforts and means.

> *"During regular visits to the gynecologist, I was there for only check-ups and received some advice about pregnancy... uhh...and some postpartum advice... if I had asked any questions, opened any discussion at that topic, in that case, yes, but no any word by the doctor or nurses about it [child care and nutrition]"*
>
> *(Mother 1.2.1, CS delivery, Hospital 1)*

The mothers reported that they received information about child care and nutrition mainly from the Internet, social media, books, and surrounding people such as relatives, acquaintances, etc. Those who were multigravida had information and breastfeeding experience from previous pregnancies.

> *"It was mainly the Internet... I read a lot of books during my first pregnancy, and during this third pregnancy, it was mainly the Internet and my own experience."*
>
> *(Mother 1.2.2, vaginal delivery, Hospital 2)*

*"Perhaps more from the experience and advice of my friends, my relatives……. a lot of advice from my friends, of course... "Hayavari" (laughter)"*

*(Mother 1.2.3, vaginal delivery, Hospital 4)*

Only one of the participants mentioned that she received information about breastfeeding while attending yoga classes:

*"I went to yoga…. during yoga, we had workshops about breastfeeding and delivery process... I got the basic knowledge from yoga, plus I also did a lot of research on my own, and watched videos...uuuhh.....During that time, I joined groups on Facebook for pregnant women and breastfeeding... uh... I got information from the Internet and from my yoga classes….. apart from yoga alone, we talked a lot and discussed everything there [about child care and nutrition]."*

*(Mother 1.2.4, CS delivery, Hospital 1)*

***Subtheme 1.3 The process of delivery (CS and VD)***

Out of all participants who delivered via CS, four were primigravida and four were multigravida. All women had medical indications for conducting CS. Four of them had planned and four unplanned CS. The main reasons leading the study participants to deliver via CS were having big fetus, not proper position of fetus, overdue pregnancy, extended delivery, internal bleeding, placental abruption, narrow pelvic, and previous history of CS. Participants who delivered by CS expressed a positive attitude toward vaginal delivery, reporting that if there were no medical indications, they would prefer to have normal delivery.

*"To tell the truth, I had a cesarean section... uh... firstly because I had a cesarean section during my first pregnancy. I had internal bleeding…… As I said, I was lucky, since I noticed the bleeding and they rushed me to the hospital…..without any analysis, without taking anything...they didn't manage to do it[because of emergency]...and they did a cesarean section immediately..... uh... To be honest, I'm more inclined to have a natural birth, it just worked out that way for me."*

*(Mother 1.3.1, CS delivery, Hospital 2)*

One of the participants mentioned that after conducting induced labor the delivery process extended and the condition of fetus became worse, so they had to do CS:

*"From the very beginning, I was willing to have a natural birth and I talked about it with my doctor, that I want everything to be as natural as possible, I didn't want to have my child by cesarean section... During this period, I went to yoga, and I was prepared for natural delivery... in a word, I was fully committed to having a natural birth, but everything went the other way."*

*(Mother 1.3.2, CS delivery, Hospital 1)*

Another participant mentioned that:

*"During my first delivery, I went to give birth in a natural way... I went there, they looked at the fetus, it was big [about 4 kg], and they [doctors] said that it would be good to conduct a cesarean section for safety purposes."*

*(Mother 1.3.3, CS delivery, Hospital 1)*

Among women who had a vaginal delivery, five were primigravida and four were multigravida. All participants mentioned that the process of delivery was not easy, even though the process of

delivery went smoothly, without any serious complications. The main difficulty they mentioned was acute pain during the final phase of delivery. Participants mentioned:

> *"At that time, I felt that I couldn't stand it anymore, it [pain] was getting stronger... how do these pains happen, the intervals get closer and closer and you don't have time to breathe... then I called my doctor, my doctor was in surgery, I said I can't handle the pain anymore?..... I want an epidural"*
>
> *(Mother 1.3.4, vaginal delivery, Hospital 1)*
>
> *"They [doctors] injected me with some medicine... then after that, my pains started... and I was feeling very bad.....I couldn't stand it [pain] anymore..... they injected an epidural....uh....and to tell the truth the epidural didn't help me that much.....uh....It was very hard and already at the last moment of delivery, I was feeling sleepy, I could say I fell asleep, but all of a sudden my strength came again and the baby was born"*
>
> *(Mother 1.3.5, vaginal delivery, Hospital 1)*

**Theme 2: Participant's breastfeeding practices in the delivery room**

***Subtheme 2.1 Physical condition after cesarean section and vaginal delivery***

In general, almost all participants reported having good physical condition after CS. Among 8 respondents who underwent CS, 6 had epidural anesthesia, 1 spinal, and 1 general anesthesia. After surgery, all of them moved to the Intensive Care Unit for 6-12 hours. Their ability to sit and walk was restored the next day after surgery. The main complications they mentioned were acute postpartum pain, headache, dizziness, and a long period of recovery.

*"It took too long… I just felt good after about a month …"*

*(Mother 2.1.1, CS delivery, Hospital 5)*

*"I had terrible pains, because during the second delivery, they say, the contraction of the uterus (Pause)[the process of the uterus contraction is more painful during second delivery].....the pain was stronger, and because this was my second delivery, I had terrible pain for three days.... they injected me painkillers two times a day……then it gradually weakened… after a month there was probably no pain at all."*

*(Mother 2.1.2, CS delivery, Hospital 1)*

*"I had common postpartum pains that lasted about 10-15 days."*

*(Mother 2.1.3, CS delivery, Hospital 1)*

On the contrary to women who delivered by CS, those who had vaginal delivery reported that the post-delivery period went smoothly, without any serious complications. Almost all participants with VD felt very good and could walk immediately after being moved to the postdelivery department.

*"The first day was a bit difficult, but then, since it was not a surgery (pause).... after that, from the second day, I felt very good, as if I had never given birth."*

*(Mother 2.1.4, vaginal delivery, Hospital 1)*

*"I will actually dream that the next one will be the same way as this because when I gave birth, I felt very good and whoever talked to me, did not believe that I had just given birth."*

*(Mother 2.1.5, vaginal delivery, Hospital 1)*

Only one participant mentioned that she had inflammation of the postdelivery stitches, which disturbed her ability to sit and walk:

> "*I had internal stitches... I had complications after that because my stitches were inflamed… For about seven days I had problems of standing and sitting"*
>
> *(Mother 2.1.6, vaginal delivery, Hospital 1)*

***Subtheme 2.2 Immediate skin-to-skin contact after CS and VD***

Among participants who delivered via CS, some reported having no skin-to-skin contact with their child in the delivery room. Those who reported having skin-to-skin contact said that it lasted a few seconds, doctors just showed the baby, approached them to kiss, and then took away for conducting weight and height measurements.

> *"To tell the truth, I was waiting a lot for that moment to happen... but that moment[skin-to-skin contact] didn't happen... I don't know what was the reason, but they didn't put the baby on me… but I saw the baby… they just didn't put him on my chest."*
>
> *(Mother 2.2.1, CS delivery, Hospital 5)*
>
> *"No, no, they don't do that during a cesarean section...they show only once.... that's what happened in my case, they showed only once... then... they cleaned the baby next to me, wrapped him… they brought the baby, I kissed his forehead and [doctors] took him away... they weighed the baby, measured his height and told me…"*
>
> *(Mother 2.2.2, CS delivery, Hospital 2)*

The participants who did not have skin-to-skin contact at all were those who had spinal and general anesthesia.

*"As soon as they approached the baby, I started vomiting because of the anesthesia... they immediately put me to sleep (general anesthesia) so that they could continue sewing"*

*(Mother 2.2.3, CS delivery, Hospital 2)*

*"Because after that spinal anesthesia, I felt pain... it lasted for a few seconds, I felt the pain at the moment of delivery……. and since it was not allowed to feel pain during a cesarean section, they immediately put me to sleep and gave me anesthesia ...it lasted for 15-20 minutes, they gave me anesthesia, took the baby out, I woke up again and I did not see the child....."*

*(Mother 2.2.4, CS delivery, Hospital 1)*

Exclusively, all 9 participants who had a vaginal delivery mentioned that they had immediate skin-to-skin contact after delivery and, as they stated, it was one of the most expected and unforgettable moments of their lives. According to their words, the duration of skin-to-skin contact ranged from 30 seconds to an hour.

*"Well..... when they took the baby out, they immediately put the baby on me, he was crying, and I will never forget that moment for the rest of my life, it was probably the most important moment..."*

*(Mother 2.2.5, vaginal delivery, Hospital 1)*

*"They took the baby out, put her on me, and continued the rest of the process... my feelings, as for every mother, were very happy... at that moment I was in a deep euphoria…."*

*(Mother 2.2.6, vaginal delivery, Hospital 1)*

**Theme 3: Participant's breastfeeding practices in the postpartum department**

***Subtheme 3.1 The first attempt at breastfeeding initiation***

After delivery, the participants, who delivered by CS, spent 6-24 hours in the Intensive Care Unit (ICU) and then were moved to the post-delivery department. Hence, the first attempt to breastfeed the child was postponed from 6 hours up to one day.

*"As soon as I moved to the post-delivery department, maybe half an hour later, they immediately brought the child and put the baby on my breast. They didn't feed him... six hours had passed after he was born... they immediately brought him to me to breastfeed."*

*(Mother 3.1.1, CS delivery, Hospital 1)*

*"The baby was born at 12 o'clock in the afternoon, I breastfed him at night... but they told me that he was sleeping quietly... he [the baby] was brought to the post-delivery room and was asleep for a while, then I breastfed... ten or eleven hours after delivery"*

*(Mother 3.1.2, CS delivery, Hospital 2)*

*"24 hours had definitely passed... uhh... and I don't know what they gave the baby there...probably they gave her glucose because it was impossible for a child to stay hungry for 24 hours...uhh...I didn't check, to be honest... did they give formula or were they satisfied with glucose alone?"*

*(Mother 3.1.3, CS delivery, Hospital 2)*

One participant told that when the baby was brought to her, he had already been fed with infant formula, that's why the first attempt of breastfeeding initiation was delayed:

*"At the time, when they brought the baby to me, I remember they said that "we had just given formula..."... I tried to breastfeed two hours after the baby was brought... ...and they [healthcare workers] were complaining that he was very noisy and hungry [the healthcare workers fed the baby with a formula to calm him down thinking that he could scream because of hunger]"*

*(Mother 3.1.3, CS delivery, Hospital 5)*

Among women who delivered vaginally, almost all mentioned that the baby was given to them to breastfeed 2 hours after delivery. Only one of the mothers pointed out that she started breastfeeding immediately in the delivery room, the others told that the first attempt was after being moved to the post-delivery department.

*"After two hours...I fed for the first time in the delivery room...they didn't take me to the post-delivery room at once...I tried to breastfeed in the delivery room...then in the post-delivery room."*

*(Mother 3.1.4, vaginal delivery, Hospital 2)*

*"Two hours later they took me up to the post-delivery room, I cleaned me up and after that... uhh... one of the nurses came and showed me how to feed the baby."*

*(Mother 3.1.5, vaginal delivery, Hospital 1)*

One participant reported that initially, it was her decision to feed the baby with formula, and whoever tried to convince her, she wouldn't change her mind to breastfeed, since she had unsuccessful breastfeeding experience with her first two children and, to avoid complications, she preferred to feed the baby with formula:

*"Well, everyone is against infant formula from the beginning... but it was my decision... because for me, giving birth was easier than breastfeeding… it's more painful [breastfeeding] than that condition [the process of delivery]."*

*(Mother 3.1.6, vaginal delivery, Hospital 4)*

***Subtheme 3.2 Difficulties during breastfeeding initiation while in the maternity hospital***

All mothers stated that the most difficult thing they faced during the first days of initiating breastfeeding was that the baby could not hold the breast, had a small body size and weight, and cried constantly because of being hungry. As a result of this, the babies were losing weight.

*"At that time, the child was constantly crying, I was constantly holding her, I was trying to feed her... She was born with a small body weight; she could not hold my breast... That moment was a little bit difficult for me"*

*(Mother 3.2.1, vaginal delivery, Hospital 3)*

*"Since she wasn't sucking, she was screaming, and the next day she lost a lot of weight… she was born small... so we decided to give formula, and after giving formula, she could pull the bottle normally, pull the pacifier normally, but not the breast..... she just opened her mouth, held the breast and stayed like that [did not suck the milk]."*

*(Mother 3.2.2, CS delivery, Hospital 2)*

Almost all mothers who delivered by CS reported that the first steps of initiating breastfeeding were very challenging for them because of (as they perceived) the late start of lactation after CS. They stated that the babies were sucking the breast but no milk was coming.

*"Well, the only difficulty is that they are very small at that time, their mouths are very small, they can't hold the breast normally to eat and the milk comes with difficulty after the cesarean section."*

*(Mother 3.2.3, CS delivery, Hospital 4)*

*"The baby didn't hold the breast from the beginning and it's like the milk was not produced at the beginning…. Because it's the cesarean section, milk starts producing a little bit later, the baby should suck until it comes..."*

*(Mother 3.2.4, CS delivery, Hospital 2)*

*"He wanted to eat very often and couldn't sleep because of that, as he was hungry... well, since the colostrum comes with difficulty, the milk still doesn't come well…"*

*(Mother 3.2.5, CS delivery, Hospital 5)*

***Subtheme 3.3 Rooming in***

All participants with both CS and vaginal delivery mentioned that after being removed to the post-delivery department the child remained with them all three days until they were discharged.

*"Yes, the baby remained with me the whole time I was at the maternity hospital"*

*(Mother 3.3.1, vaginal delivery, Hospital 2)*

*"When I removed to the postdelivery department the child was brought to me and stayed with me all the time"*

*(Mother 3.3.2, CS delivery, Hospital 4)*

*"Yes, the baby was with me all the time.....they only took the baby for checking the heart, joints, and pelvis."*

*(Mother 3.3.3, CS delivery, Hospital 2)*

**Theme 4: Participant's breastfeeding practices after being discharged**

In general, all participants expressed a positive attitude toward breastfeeding. The latter is evident by the fact that out of all participants, 10 implemented exclusive breastfeeding, 5 by CS delivery, and 5 by VD, 6 initiated mixed feeding with both infant formula and breast milk, 3 by CS delivery, and 3 by VD and only one mother implemented solely formula feeding.

***Subtheme 4.1 Complications during breastfeeding initiation and factors leading to non-initiation, delayed initiation, or early discontinuation of breastfeeding***

***4.1.1 Exclusive Breastfeeding***

Mothers who initiated exclusive breastfeeding stated that no matter how difficult it was, they had a strong wish to continue feeding the baby with breast, since only in that case they could promote more breast-milk production.

*"They [doctors] said that the more you feed with breast, the more milk will be produced...I did so...I didn't give formula and after a week the baby started sucking normally...."*

*(Mother 4.1.1.1, vaginal delivery, Hospital 1)*

*"Well, no matter how difficult it was, I didn't give formula at all. . . . until six months I exclusively breastfed.....we started the supplementary food from six months.... but I'm still continuing breastfeeding."*

*(Mother 4.1.1.2, vaginal delivery, Hospital 1)*

Some mothers told that besides feeding their babies with breast they implemented pumping and gave the breast milk to the baby by bottle or syringe because they had problems with breasts such as nipple cracks and breast engorgement. Even in that case, they pumped the breast milk and fed the baby with a syringe or bottle.

*"I pumped first, based on my previous experience...uhh...I fed with breast, then immediately pumped for about forty minutes.....i.e. I pumped several times a day for forty minutes and collected that milk, and that helped me avoid breast engorgement."*

*(Mother 4.1.1.3, vaginal delivery, Hospital 1)*

*"At first, I breastfed, but then I pumped and gave milk, but not with a bottle… I pressed it into his mouth with a syringe, without a needle… He was fed for about 5-6 or 10 days at most like that and then only with the breast exclusively"*

*(Mother 4.1.1.4, vaginal delivery, Hospital 2)*

### *4.1.2 Mixed feeding*

The complications and difficulties that served as a barrier for mothers to continue exclusive breastfeeding were problems with breasts, not having enough milk, and the character of the child such as getting used to a bottle, crying because of hunger, losing body weight, and refusing to hold the breast.

*"Since the child didn't like to breastfeed very much, I offered him breast two or three times a day, but he got nervous and didn't continue, he wanted a bottle because it's easier with a bottle… During the first days, I had enough milk. it was quite enough... I pumped several times a day and gave her breast milk most part of the day, but once or twice a day I also gave formula when my milk wasn't enough... It was like that for about a month, she ate more*

*breast milk than formula... But since I didn't force her to eat breast, she continued to eat with a bottle, so my milk became less."*

*(Mother 4.1.2.1, CS delivery, Hospital 1)*

*"During the first ten days, I breastfed her, but my breast was already in pain from probably the fourth day. After that, when I came home, on the third day, my child was crying at night because she wanted milk, I was in panic… Ten days passed and imagine my breasts were damaged... ten days later my breasts... the breasts were full of milk and my child could not eat that milk because I had cracked nipples and the child cannot hold the breast…. and little by little, little by little formula came for help."*

*(Mother 4.1.2.2, vaginal delivery, Hospital 1)*

*"I just felt that she doesn't react to the breast at all, because she already got used to the bottle…. when you give her milk with a bottle, you serve her the milk... he didn't pull the breast anyway, she just held the breast, but she didn't eat."*

*(Mother 4.1.2.3, CS delivery, Hospital 2)*

Having the responsibility to work, another participant showed a positive attitude toward infant formula stating that:

*"Well, the positive side of the formula is that, for example, the baby eats regularly and there is no need to stay awake all night and hold the baby..... Moreover, you can leave the house, and go to work, you don't have to sit for hours, to do pumping in order to leave the milk for the baby so you can leave the house whenever you want."*

*(Mother 4.1.2.4, CS delivery, Hospital 2)*

Contrary to this statement, the other participant who initiated exclusive breastfeeding reported that:

> *"I breastfed for ten months...even though I had to work during that time, I did everything to breastfeed."*
>
> *(Mother 4.1.2.5, vaginal delivery, Hospital 1)*

### *4.1.3 Only formula feeding*

Among 17 participants only one initiated formula feeding starting from the first day of infant's life, since during her previous breastfeeding experience she had breast engorgement, swollen armpit and unendurable pain:

> *"It was my decision... Well, the decision not to feed has to do with the fact that my entire armpit, with glands, swells... and the pain is so terrible that you can't stand it... your whole nervous system is disturbed because of that… So, I gave only formula exclusively.... after a few days.... maybe after six days we just gave a little water because the baby who eats formula needs water...and when I gave it, he drew the water with great pleasure... he liked it."*
>
> *(Mother 4.2.3.1, vaginal delivery, Hospital 4)*

## Theme 5: Maternity hospital healthcare providers' involvement in breastfeeding promotion.

### *Subtheme 5.1 Healthcare providers' support in breastfeeding promotion*

All in all, some participants mentioned that they were satisfied with the support and help provided by the healthcare workers of the maternity hospital. According to their report, the healthcare staff was supportive, compassionate, and attentive.

*"They were very nice, very professional... The breastfeeding specialist was also a very nice woman... very compassionate and caring... She did everything to make it [breastfeeding] go well..."*

*(Mother 5.1.1, CS delivery, Hospital 2)*

*"They were very compassionate... Actually, they did everything... uh... even if I couldn't, they approached me and tried to help me at any time during the night..."*

*(Mother 5.1.2, vaginal delivery, Hospital 2)*

*"They said that it is very good that you are breastfeeding and they were the ones who directed you to breastfeed so that your baby eats more breast milk than formula."*

*(Mother 5.1.3, with CS delivery, Hospital 5)*

However, there were some participants who were not satisfied with the healthcare workers' support and breastfeeding promotion.

*"I asked the nurse to help me, to show me how to breastfeed because I didn't know... She came and showed me... but she didn't follow the process... I asked the nurse once or twice, I said, "Could you help me?" They just showed me and left... I'm not satisfied with that nurse..." "I would say that they do not support you, but if they see that you have a desire, they help."*

*(Mother 5.1.4, CS delivery, Hospital 1)*

*"I'm not satisfied at all, because if I was satisfied, the child would eat breastmilk until now, or at least until the age of six months… My biggest complaint was that they didn't show me the right way how to breastfeed properly… Because from the beginning I was very uncomfortable with the idea that I'm going to feed the child with formula."*

*(Mother 5.1.5, vaginal delivery, Hospital 1)*

*"It seemed to me that if I wasn't interested myself if I didn't search, I wouldn't understand what they were talking about, how I should breastfeed the baby, because first of all, what each of them said was a little bit different from one another, one contradicted the other..."*

*(Mother 5.1.6, vaginal delivery, Hospital 1)*

Some of the participants were complaining that the approach differs from one nurse to another, which arose confusion among them about how to implement breastfeeding properly.

*"They helped me... yet, everyone was coming with their own approach….. It's your first child, you don't understand how to hold him, what to do, and everyone comes and says different things… You don't understand what is right and what is wrong..."*

*(Mother 5.1.7, vaginal delivery, Hospital 3)*

In addition to the latter statement, women who were multigravida mentioned that the fact that it was their second child and they were more experienced, made healthcare workers be less attentive and supportive in breastfeeding promotion.

*"In reality, they didn't help…. During my second child, at all… During the first child, they told me just a few things and that's it."*

*(Mother 5.1.8, with CS delivery, Hospital 1)*

*"During the first child, they treated you differently... they give more advice... the pediatrician always comes and stays next to you... But during the second child, when you get used to it, they just ask "Do you need any help?" ...and if you don't need them, they don't follow you."*

*(Mother 5.1.9, vaginal delivery, Hospital 3)*

***Subtheme 5.2 Advising to feed the child with infant formula***

Most of the participants stated that they didn't receive any suggestion from the healthcare providers to give infant formula to the child.

*"No, they didn't suggest.... moreover... That lactation consultant said don't give infant formula.... offer your breast all the time."*

*(Mother 5.2.1, CS delivery, Hospital 1)*

However, some women reported that healthcare workers suggested them give formula because of not having enough milk, getting calm the baby, or the low weight of the child.

*"In the hospital, they gave formula only once because he was crying, and he couldn't rest... uh... the healthcare workers said that it would be better to give formula to the child in order to get calm... and me to gather strength..."*

*(Mother 5.2.2, CS delivery, Hospital 5)*

*"They offered formula; they even brought the formula so that...uh...the baby…. they told me to give formula, because the child was absolutely unable to get enough [milk]."*

*(Mother 5.2.3, vaginal delivery, Hospital 1)*

## 4. Discussion

This qualitative study explored breastfeeding practices among mothers who underwent cesarean section or who had vaginal delivery in Yerevan, Armenia. It sought to investigate the factors that hinder optimal breastfeeding practices among mothers who delivered via CS or vaginal delivery. Moreover, this study explored healthcare providers' role in breastfeeding promotion. With the application of deductive approach, predetermined themes reflecting a chronological sequence of mothers' perinatal experiences were used for data collection and analysis. Those themes were: experiences during pregnancy and delivery, breastfeeding practices in the delivery room, in the postpartum department, and after being discharged, and healthcare professionals' involvement in breastfeeding promotion. Within each theme, subcategories were developed using inductive approach to get a deeper understanding of each experience.

Many studies suggest that there is a negative association between cesarean section and women's breastfeeding practices (Arora et al., 2017) (Pérez-Ríos et al., 2008). The findings of this research revealed that, although almost all mothers planned to breastfeed regardless the mode of delivery, CS influenced adversely early breastfeeding initiation. And it is known that delayed initiation of breastfeeding creates difficulties during breastfeeding (Dewey et al., 2003). Most of the interviewed mothers with CS delivery mentioned that they had a great wish to breastfeed, but believed that since they delivered via CS, their milk production was delayed, the baby was remaining hungry and they had to give formula. However, we could not find similar findings in the literature that would prove this belief. The study participants also mentioned several factors other than CS, that led them to choose an alternative way of feeding the child, which will be discussed below.

During this research, it was revealed that cesarean section had several adverse effects on early breastfeeding initiation. The primary negative effect of cesarean section on breastfeeding practices is that it serves as a barrier to initiate proper skin-to-skin contact. The findings of this study showed that none of the participants who delivered by cesarean section had post-delivery skin-to-skin contact with the child, unlike those who had normal delivery. Another study with similar results, conducted in Nigeria, also revealed that mothers with cesarean section delivery had lower chances of having skin-to-skin contact with their newborns than mothers who delivered vaginally (Ekholuenetale et al., 2021).

Accordingly, having improper or no skin-to-skin contact after CS delivery results in delayed initiation of breastfeeding (Hobbs et al., 2016) (Lau et al., 2018). Similarly, in this research, the study participants who underwent cesarean section spent from six to 24 hours in the Intensive Care Unit and were able to initiate breastfeeding only after being moved to the postdelivery department. On the contrary, mothers who delivered vaginally were moved to the postpartum department two hours after giving birth, hence, being able to start breastfeeding within the first hours of the infant's life.

Even though the Baby Friendly Hospital Initiative (BFHI) recommends to start breastfeeding immediately after giving birth while in the delivery room, (WHO & UNICEF, 2009) the findings of this research showed that even of those mothers who delivered vaginally and had immediate skin-to-skin contact, only one mother started breastfeeding in the delivery room.

Another important recommendation promoting breastfeeding proposed by BFHI is "rooming in", meaning that mothers should stay together with newborns 24 hours a day (WHO & UNICEF, 2009). The findings of this study indicated that all the participants, with both CS and

normal delivery, stayed together with their infants all three days while being in the maternity hospital.

The main factors of non-initiation or early termination of breastfeeding identified by the study participants were not having enough milk and having severe pain during breastfeeding because of cracked nipples and breast engorgement. This finding coincides with the results of other studies stating that mother's perception of not supplying enough milk to the child, and having breast or nipple pain serve as barriers to early termination of breastfeeding initiation (Morrison et al., 2019) (Walters et al., 2023).

In the BFHI Ten Steps to Successful Breastfeeding, WHO together with UNICEF separated special points about healthcare providers' support in breastfeeding promotion (WHO & UNICEF, 2009). Many studies suggest that prenatal and postnatal consultations and support provided by healthcare workers have a crucial role in breastfeeding promotion (Imdad et al., 2011). The findings of this research showed that none of the mothers received consultation about child nutrition, care, and breastfeeding in the prenatal period while having their regular checkups at maternity hospitals. Most of the mothers reported that they were provided with support and counseling from nurses and lactation consultants only in the postpartum department, which was not satisfactory. The participants also reported that contradicting advice they received from medical workers induced confusion among inexperienced mothers, who were making their first breastfeeding attempts.

Another interesting finding of this study indicated that primiparous mothers had more problems during breastfeeding initiation compared with multiparous ones. Multiparous mothers were more experienced, but they also stated that they had problems with breastfeeding during their first child because of a lack of knowledge and skills, which were improved during the

second child. At the same time, primiparous mothers who reported having breastfeeding problems stated that they had problems because of getting improper support from healthcare professionals. They indicated that if they had a second child, they would never make the same mistakes again and would avoid unwanted problems during breastfeeding. A study that compared breastfeeding practices among primiparous and multiparous mothers also indicated that primiparous mothers were at higher risk of discontinuing breastfeeding because of facing difficulties with it as a result of not getting proper support from healthcare professionals (Singh et al., 2020).

Nevertheless, this study showed that most maternity hospitals in Yerevan encourage breastfeeding rather than formula feeding. Most of the participants stated that they were not suggested to give formula to their infants while being in maternity, with exception of medically indicated cases. Despite the latter, the results of this study indicated that verbal encouragement without proper practical support was insufficient since many of the participants started mixed feeding already in the maternity hospital.

Moreover, this research demonstrated that there were differences between maternity hospitals in terms of providing breastfeeding support to mothers. For instance, a uniform dissatisfaction pattern was noted among participants who delivered in Hospital 1. A qualitative study with similar findings, conducted among African American women, also stated that an unsupportive environment at the maternity hospital played a great role in their unsuccessful breastfeeding practices (Johnson et al., 2016).

## 5. Study Strengths and Limitations

This was the first qualitative research conducted in Yerevan, Armenia that tried to investigate and understand the breastfeeding practices among mothers who had cesarean section

or vaginal delivery. By exploring and pointing out some important issues and barriers that hinder mothers to initiate proper breastfeeding, this study can serve as a good base for future research and policymakers to take targeted actions for improving the breastfeeding situation in Armenia.

Another strength of this research is the diversity of the study population since only one participant was recruited by utilizing the snowball technique, the remaining participants were from different places, didn't know each other, and gave birth in different maternity hospitals in Yerevan.

Moreover, the meaning and code saturation was reached after conducting 15 interviews, but generally, 17 participants were interviewed to get more convincing information for the final findings. All 17 interviews were conducted face-to-face, which helped the interviewer to create a confident and positive atmosphere among interviewees. The latter made study participants share their experiences more openly and thoroughly about this sensitive topic. The dependability, confirmability, and reflexivity of this study were ensured by keeping a research diary.

Together with the above-mentioned strengths, this study also contained several limitations that need to be acknowledged and discussed. One of the main limitations of this research was that both data collection and analysis were conducted solely by the student investigator because of the time constraints.

Another limitation was that this study targeted solely mothers, and investigated the proposed research questions from their perspective only. The inclusion of other stakeholders such as healthcare professionals, lactation consultants, or doulas would increase the reliability

and internal validity of the research. The involvement of different stakeholders in this research was not possible due to limited time and resources, which might create the issue of credibility.

The last identified limitation of the study was that it only included women who delivered in the maternity hospitals of Yerevan, so the findings of this research might not be generalizable to other regions in Armenia.

## 6. Recommendations

Taking into consideration the principal findings of this study and suggestions proposed by the study participants, the following recommendations were made:

- Further study should be conducted by expanding the scope of the research, including different stakeholders and other regions of Armenia to get more comprehensive picture of the real situation.
- Training and seminars should be held among healthcare professionals to improve their skills and abilities in supporting and educating mothers during the postpartum period.
- Prenatal educational programs should be developed and implemented in maternity care units that will raise women's awareness and prepare them for future breastfeeding initiation.
- The Ministry of Health of Armenia should conduct the revision of breastfeeding promotion policies in all maternity hospitals in Armenia to find the existing gaps and implement periodic monitoring efforts to ensure that all maternity hospitals follow the proposed protocols and standards of care.

## References


Aditi, A., Jaiswal, A. K., & Qamar, A. (2022). Gap in breast feeding practices between caesarean and normal deliveries. *International Journal of Pregnancy & Child Birth*, *8*(3), 48–53. https://doi.org/10.15406/ipcb.2022.08.00260

Albokhary, A. A., & James, J. P. (2014). Does cesarean section have an impact on the successful initiation of breastfeeding in Saudi Arabia? In *Saudi Med J* (Vol. 35, Issue 11). www.smj.org.sa

Arora, A., Manohar, N., Hayen, A., Bhole, S., Eastwood, J., Levy, S., & Scott, J. A. (2017). Determinants of breastfeeding initiation among mothers in Sydney, Australia: findings from a birth cohort study. *International Breastfeeding Journal*, *12*(1), 1–10. https://doi.org/10.1186/S13006-017-0130-0/TABLES/3

Betran, A. P., Ye, J., Moller, A.-B., Souza, J. P., & Zhang, J. (2021). Trends and projections of caesarean section rates: global and regional estimates. *BMJ Global Health*, *6*, 5671. https://doi.org/10.1136/bmjgh-2021-005671

Brockway, M., Benzies, K., & Hayden, K. A. (2017). Interventions to improve breastfeeding self-efficacy and resultant breastfeeding rates: a systematic review and meta-analysis. *Journal of Human Lactation*, *33*(3), 486–499. https://doi.org/10.1177/0890334417707957

*Caesarean section rates continue to rise, amid growing inequalities in access*. (2021). Retrieved February 24, 2023, from https://www.who.int/news/item/16-06-2021-caesarean-section-rates-continue-to-rise-amid-growing-inequalities-in-access

Chen, C., Yan, Y., Gao, X., Xiang, S., He, Q., Zeng, G., Liu, S., Sha, T., & Li, L. (2018). Influences of cesarean delivery on breastfeeding practices and duration: a prospective cohort study. *Journal of Human Lactation*, *34*(3), 526–534. https://doi.org/10.1177/0890334417741434

Chiou, S. T., Chen, L. C., Yeh, H., Wu, S. R., & Chien, L. Y. (2014). Early skin-to-skin contact, rooming-in, and breastfeeding: a comparison of the 2004 and 2011 National Surveys in Taiwan. *Birth*, *41*(1), 33–38. https://doi.org/10.1111/BIRT.12090

Clermont, A., Gemayel, J. El, Hammoud, R., Wang, J., Beciu, H., Sinno, M., Berends, W., Rosenblum, N., Bienstock, J. L., Byrnes, K., & Samuels, R. (2021). Effects of a 'Baby-Friendly Hospital Initiative' on exclusive breastfeeding rates at a private hospital in Lebanon: an interrupted time series analysis. *BMC Pregnancy and Childbirth*, *21*(1), 1–8. https://doi.org/10.1186/S12884-021-03816-3/FIGURES/1

*Data Warehouse - UNICEF DATA*. (2021). Retrieved April 21, 2023, from https://data.unicef.org/resources/data_explorer/unicef_f/?ag=UNICEF&df=GLOBAL_DATAFLOW&ver=1.0&dq=ARM.NT_BF_EXBF.&startPeriod=1970&endPeriod=2023

Dewey, K. G., Nommsen-Rivers, L. A., Heinig, M. J., & Cohen, R. J. (2003). Risk factors for suboptimal infant breastfeeding behavior, delayed onset of lactation, and excess neonatal weight loss. *Pediatrics*, *112*(3), 607–619. https://doi.org/10.1542/PEDS.112.3.607

Eidelman, A. I., Schanler, R. J., Johnston, M., Landers, S., Noble, L., Szucs, K., & Viehmann, L. (2012). Breastfeeding and the Use of Human Milk. *Pediatrics*, *129*(3), e827–e841. https://doi.org/10.1542/PEDS.2011-3552

Ekholuenetale, M., Barrow, A., Benebo, F. O., & Idebolo, A. F. (2021). Coverage and factors associated with mother and newborn skin-to-skin contact in Nigeria: a multilevel analysis. *BMC Pregnancy and Childbirth*, *21*(1), 1–12. https://doi.org/10.1186/S12884-021-04079-8/TABLES/3

Harutyunyan, S. A., Poghosyan, K. P., Saribekyan, K. S., & Ghazaryan, A. E. (2011). *The New Armenian Medical Journal the Effect of Health Care Practices on Infant Feeding*.

Hobbs, A. J., Mannion, C. A., McDonald, S. W., Brockway, M., & Tough, S. C. (2016). The impact of caesarean section on breastfeeding initiation, duration and difficulties in the first four months postpartum. *BMC Pregnancy and Childbirth*, *16*(1). https://doi.org/10.1186/s12884-016-0876-1

Hoxha, I., Syrogiannouli, L., Luta, X., Tal, K., Goodman, D. C., Da Costa, B. R., & Jüni, P. (2017). Caesarean sections and for-profit status of hospitals: systematic review and meta-analysis. *BMJ Open*, *7*(2), e013670. https://doi.org/10.1136/BMJOPEN-2016-013670

Imdad, A., Yakoob, M. Y., & Bhutta, Z. A. (2011). Effect of breastfeeding promotion interventions on breastfeeding rates, with special focus on developing countries. *BMC Public Health*, *11*(SUPPL. 3), 1–8. https://doi.org/10.1186/1471-2458-11-S3-S24/FIGURES/1

Janoudi, G., Kelly, S., Yasseen, A., Hamam, H., Moretti, F., & Walker, M. (2015). Factors associated with increased rates of caesarean section in women of advanced maternal age. *Journal of Obstetrics and Gynaecology Canada*, *37*(6), 517–526. https://doi.org/10.1016/S1701-2163(15)30228-0

John, J. R., Mistry, S. K., Kebede, G., Manohar, N., & Arora, A. (2019). Determinants of early initiation of breastfeeding in Ethiopia: A population-based study using the 2016 demographic and health survey data. *BMC Pregnancy and Childbirth*, *19*(1). https://doi.org/10.1186/s12884-019-2211-0

Johnson, A. M., Kirk, R., Rooks, A. J., & Muzik, M. (2016). Enhancing breastfeeding through healthcare support: results from a focus group study of african american mothers. *Maternal and Child Health Journal*, *20*, 92–102. https://doi.org/10.1007/s10995-016-2085-y

Kalisa, R., Malande, O., Nankunda, J., & Tumwine, J. K. (2015). Magnitude and factors associated with delayed initiation of breastfeeding among mothers who deliver in Mulago hospital, Uganda. *African health sciences*, *15*(4), 1130–1135. https://doi.org/10.4314/ahs.v15i4.11

Kirchengast, S., & Hartmann, B. (2018). Recent lifestyle parameters are associated with increasing caesarean section rates among singleton term births in austria. *International Journal of Environmental Research and Public Health 2019, Vol. 16, Page 14*. https://doi.org/10.3390/IJERPH16010014

Lagrew, D. C., Low, L. K., Brennan, R., Corry, M. P., Edmonds, J. K., Gilpin, B. G., Frost, J., Pinger, W., Reisner, D. P., & Jaffer, S. (2018). National partnership for maternal safety: consensus bundle on safe reduction of primary cesarean births-supporting intended vaginal births. *Obstetrics and Gynecology*, *131*(3), 503–513. https://doi.org/10.1097/AOG.0000000000002471

Lau, Y., Tha, P. H., Ho-Lim, S. S. T., Wong, L. Y., Lim, P. I., Citra Nurfarah, B. Z. M., & Shorey, S. (2018). An analysis of the effects of intrapartum factors, neonatal characteristics, and skin-to-skin contact on early breastfeeding initiation. *Maternal & Child Nutrition*, *14*(1), e12492. https://doi.org/10.1111/MCN.12492

Morrison, A. H., Gentry, R., & Anderson, J. (2019). Mothers' reasons for early breastfeeding cessation. *MCN The American Journal of Maternal/Child Nursing*, *44*(6), 325–330. https://doi.org/10.1097/NMC.0000000000000566

National Statistical Service, Ministry of Health [Armenia], ICF (2017). *Armenia Demographic and Health Survey 2015-16.* https://dhsprogram.com/pubs/pdf/FR325/FR325.pdf

Negrini, R., da Silva Ferreira, R. D., & Guimarães, D. Z. (2021). Value-based care in obstetrics: comparison between vaginal birth and caesarean section. *BMC Pregnancy and Childbirth*, *21*(1), 1–10. https://doi.org/10.1186/S12884-021-03798-2/FIGURES/6

Pérez-Ríos, N., Ramos-Valencia, G., & Ortiz, A. P. (2008). Cesarean delivery as a barrier for breastfeeding initiation: The Puerto Rican Experience. *Journal of Human Lactation*,, *24*(3), 293–302. https://doi.org/10.1177/0890334408316078

Rahman, M., Khan, N., Rahman, A., Alam, M., & Khan, A. (2022). Long-term effects of caesarean delivery on health and behavioral outcomes of the mother and child in Bangladesh. *Journal of Health, Population and Nutrition*, *41*(1). https://doi.org/10.1186/s41043-022-00326-6

Singh, M., Logeshwari, B. M., & Shubhavee, R. (2020). Comparison of breastfeeding practices between primigravida and multigravida. *International Journal of Science and Research*, 9(12). https://doi.org/10.21275/SR201202085454

Słabuszewska-Jó, A., Krzysztof Szymá nski, J., Ciebiera, M., Sarecka-Hujar, B., & Jakiel, G. (2020). Pediatrics consequences of caesarean section-a systematic review and meta-analysis. *International journal of environmental research and public health*, *17*(21), 8031. https://doi.org/10.3390/ijerph17218031

Sung S, Mahdy H. (2023). Cesarean Section. Treasure Island (FL): StatPearls Publishing; Updated 2023 Apr 17, from: https://www.ncbi.nlm.nih.gov/books/NBK546707/

Souza, J. P., Gülmezoglu, A. M., Lumbiganon, P., Laopaiboon, M., Carroli, G., Fawole, B., & Ruyan, P. (2010). Caesarean section without medical indications is associated with an increased risk of adverse short-term maternal outcomes: The 2004-2008 WHO Global Survey on Maternal and Perinatal Health. *BMC Medicine*, *8*(1)1-10. https://doi.org/10.1186/1741-7015-8-71

Tadevosyan, M., Ghazaryan, A., Harutyunyan, A., Petrosyan, V., Atherly, A., & Hekimian, K. (2019). Factors contributing to rapidly increasing rates of cesarean section in Armenia: A partially mixed concurrent quantitative-qualitative equal status study. *BMC Pregnancy and Childbirth*, *19*(1), 1-10. https://doi.org/10.1186/s12884-018-2158-6

Truzyan, N., Grigoryan, R., Avetisyan, T., Candidate, D., Crape, B., & Petrosyan, V. (2010). Protecting the right of women to affordable and quality health care in Armenia: analysis of the Obstetric Care State Certificate Program. *Center for Health Services Research and Development, American University of Armenia, Yerevan, Armenia*.

Tulay, A., Bosi, B., Gehrt Eriksen, K., Sobko, T., Wijnhoven, T. M., & Breda, J. (2015). Breastfeeding practices and policies in WHO European region member states. *Public health nutrition*, *19*(4), 753-764. https://doi.org/10.1017/S1368980015001767

*UNICEF Press Centre | UNICEF calls for the narrowing of "breastfeeding gaps" between rich and poor worldwide | UNICEF Europe and Central Asia*. (2018). Retrieved March 10, 2023, from https://www.unicef.org/eca/press-releases/unicef-calls-narrowing-breastfeeding-gaps-between-rich-and-poor-worldwide

Victora, C. G., Bahl, R., Barros, A. J. D., França, G. V. A., Horton, S., Krasevec, J., Murch, S., Sankar, M. J., Walker, N., Rollins, N. C., Allen, K., Dharmage, S., Lodge, C., Peres, K. G., Bhandari, N., Chowdhury, R., Sinha, B., Taneja, S., Giugliani, E., … Richter, L. (2016). Breastfeeding in the 21st century: Epidemiology, mechanisms, and lifelong effect. *The Lancet*, *387*(10017), 475–490. https://doi.org/10.1016/S0140-6736(15)01024-7

Walters, C. N., Rakotomanana, H., Komakech, J. J., Kabahenda, M., Joyce, J. M., Hildebrand, D. A., Ciciolla, L., & Stoecker, B. J. (2023). Breastfeeding among South Sudanese refugees in protracted settlements in Adjumani district, Uganda: facilitators and barriers. *International Breastfeeding Journal*, *18*(1), 18. https://doi.org/10.1186/s13006-023-00549-1

Wang, B. shun, Zhou, L. feng, Coulter, D., Liang, H., Zhong, Y., Guo, Y. na, Zhu, L. ping, Gao, X. ling, Yuan, W., & Gao, E. sheng. (2010). Effects of caesarean section on maternal health in low risk nulliparous women: A prospective matched cohort study in Shanghai, China. *BMC Pregnancy and Childbirth*, *10*(1), 1–10. https://doi.org/10.1186/1471-2393-10-78/TABLES/4

Wen, J., Yu, G., Kong, Y., Liu, F., & Wei, H. (2020a). An exploration of the breastfeeding behaviors of women after cesarean section: A qualitative study. *International Journal of Nursing Sciences*, *7*(4), 419–426. https://doi.org/10.1016/j.ijnss.2020.07.008

Wen, J., Yu, G., Kong, Y., Liu, F., & Wei, H. (2020b). An exploration of the breastfeeding behaviors of women after cesarean section: A qualitative study. *International Journal of Nursing Sciences*, *7*(4), 419–426. https://doi.org/10.1016/j.ijnss.2020.07.008

WHO, *Cesarean section rates continue to rise, amid growing inequalities in access*. (2021). Retrieved February 24, 2023, from https://www.who.int/news/item/16-06-2021-caesarean-section-rates-continue-to-rise-amid-growing-inequalities-in-access

WHO | Breastfeeding. (2018). *WHO*. http://www.who.int/nutrition/topics/exclusive_breastfeeding/en/

WHO | *Recommendations Non-Clinical Interventions to Reduce Unnecessary Caesarean Sections*. (2018). World Health Organization. https://www.who.int/publications/i/item/9789241550338

World Health Organization, & UNICEF. (2009). *Baby-friendly hospital initiative: revised, updated and expanded for integrated care*. https://apps.who.int/iris/handle/10665/43593

Yisma, E., Mol, B. W., Lynch, J. W., & Smithers, L. G. (2019). Impact of caesarean section on breastfeeding indicators: Within-country and meta-analyses of nationally representative data from 33 countries in sub-Saharan Africa. *BMJ Open*, *9*(9), e027497. https://doi.org/10.1136/bmjopen-2018-027497

Zhang, F., Cheng, J., Yan, S., Wu, H., & Bai, T. (2019). Early feeding behaviors and breastfeeding outcomes after cesarean section. *Https://Home.Liebertpub.Com/Bfm*, *14*(5), 325–333. https://doi.org/10.1089/BFM.2018.0150

**Table 1. Sociodemographic characteristics of study participants**

| | | Vaginal Delivery | Cesarean Section | Total |
|---|---|---|---|---|
| **The mode of delivery of the youngest child** | | 9 | 8 | 17 |
| **Participant age (completed years) (Mean)** | | 29.1 | 30.1 | |
| **Marital status** | Married | 8 | 8 | 16 |
| | Not married/divorced/other | 1 | - | 1 |
| **Place of residency** | Urban | 8 | 8 | 16 |
| | Rural | 1 | - | |
| **Educational level** | Less than high school | - | - | |
| | High school/vocational | 1 | | 1 |
| | Bachelor/higher | 8 | 8 | 16 |
| **Employment status** | Employed/In maternity leave/ student | 5 | 7 | 12 |
| | Unemployed | 4 | 1 | 5 |
| | Other | - | - | |
| **Number of children** | Primigravida | 5 | 4 | 9 |
| | Multigravida | 4 | 4 | 8 |
| **The age of the youngest child (months) (Mean)** | | 8.6 | 7.8 | |
| **Gender of the youngest child** | Male | 5 | 5 | 10 |
| | Female | 4 | 3 | 7 |
| **Maternity Hospitals** | Hospital 1 | 6 | 2 | 8 |
| | Hospital 2 | 1 | 4 | 5 |
| | Hospital 3 | 1 | | 1 |
| | Hospital 4 | 1 | 1 | 2 |
| | Hospital 5 | | 1 | 1 |

**Figure 1**

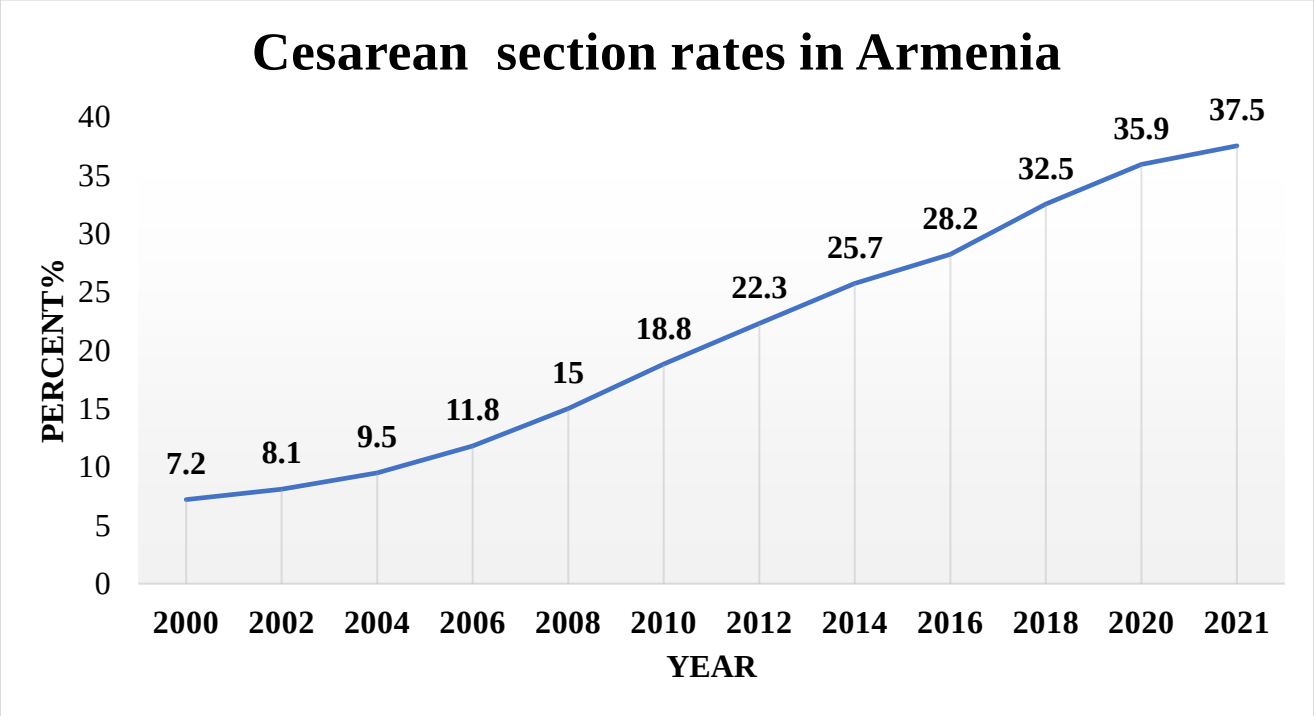


Fig. 1 Caesarean section rates in Armenia (2000–2021) (Health and Healthcare, 2022).

**Box 1**

**TEN STEPS TO SUCCESSFUL BREASTFEEDING**

Every facility providing maternity services and care for newborn infants should:

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.

2. Train all healthcare staff in the skills necessary to implement this policy.

3. Inform all pregnant women about the benefits and management of breastfeeding.

4. Help mothers initiate breastfeeding within a half-hour of birth.

5. Show mothers how to breastfeed, and how to maintain lactation even if they should be separated from their infants.

6. Give newborn infants no food or drink other than breastmilk unless medically indicated.

7. Practice rooming in - allow mothers and infants to remain together - 24 hours a day.

8. Encourage breastfeeding on demand.

9. Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.

10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

Box 1, Ten Steps to Successful Breastfeeding (World Health Organization & UNICEF, 2009)

# Appendices

## Appendix 1.

American University of Armenia

**Turpanjian College of Health Sciences**
**Institutional Review Board #1**
Consent form for participants

A Qualitative Study: Exploring the Breastfeeding Practices among Women Who Delivered by Caesarean Section or Had Vaginal delivery in Yerevan

Hello, my name is Gohar Harutyunyan. I am a student at the Turpanjian College of Health Sciences at the American University of Armenia and as part of my thesis project, I'm doing a qualitative study to explore whether the type of delivery influences the breastfeeding practices among women who delivered in Yerevan. I am inviting you to participate in an interview for this project because you are a woman who delivered in Yerevan and I would like you to share your experiences on breastfeeding practices. Your participation will only involve this interview, which will take approximately 30-40 minutes. Throughout the interview, I will ask you questions about your breastfeeding experiences and attitudes. Particularly you will be asked questions about the history of your pregnancy, the process of your delivery, and your breastfeeding practices in the delivery room, post-partum department, and after being discharged. You will be one of around 20 women who will participate in my study. All the information given by you will be kept confidential. Your name will not be written anywhere, and only the summary of the information received from all interviews will be presented in the final report. With your permission, I will use either audio recording or note-taking to make sure that I will not miss any of the information you provide me. My notes and the recording will be stored without any information that will identify you and they will be destroyed at the end of the entire project. Quotes from what you say may be used in reporting the final project findings but will not be related to your name or any other personal or identifiable information. Your participation in this study is voluntary. You may refuse to answer any of the questions or can stop the interview at any time. There is no financial compensation or other personal benefits from participating in the study and there are no known risks to you resulting from your participation in the study. It is possible that the information obtained from you will inform policymakers for designing interventions aimed at promoting breastfeeding in the country. This will be a benefit for the overall population of the country. If you have any questions regarding this study, you can call the Principal Investigators Dr. Kim Hekimyan (WhatsApp +1-201-736-4423) or Dr. Anahit Demirchyan at (+374-60) 612592. If you feel you have not been treated fairly or think you have been hurt by joining the study, you should contact Ms. Varduhi Hayrumyan, the Human Participant Protections administrator of the Institutional Review Board of the American University of Armenia (374-60) 612561.
Do you agree to participate? If yes, shall we start?
Do you agree to the recording? If YES, I will turn on the recorder when we start the interview. If NO, I will take notes during the interview, if you do not mind.
If you are ready now, we will start.

**Հայաստանի ամերիկյան համալսարան**

**Թրփանճեան առողջապահական գիտությունների ֆակուլտետ**
**Գիտահետազոտական էթիկայի #1 հանձնաժողով**
**Իրազեկ համաձայնության ձև**

**Որակական Հետազոտություն Երևանի Ծննդատներում Կեսարյան Հատումով կամ Բանկան ճանապարհով Ծննդաբերած Կանանց Կրծքով Կերակրման Փորձառության Վերաբերյալ**

Բարև, իմ անունը Գոհար Հարությունյան է: Ես սովորում եմ Հայաստանի ամերիկյան համալսարանի Թրփանճեան առողջապահական գիտությունների ֆակուլտետում: Իմ ավարտական թեզի շրջանակներում իրականացնում եմ հետազոտություն, որի նպատակն է հասկանալ՝ արդյո՞ք ծննդաբերելու եղանակը ազդում է կրծքով կերակրման փորձառության վրա կանանց շրջանում, ովքեր ծննդաբերել են Երևանում: Դուք հրավիրված եք մասնակցելու այս հարցազրույցին, քանի որ Դուք ծննդաբերել եք Երևանում, և ես կցանկանայի իմանալ Ձեր կրծքով կերակրման փորձառությունը: Ձեր մասնակցությունը սահամանափակվում է միայն այս հարցազրույցով, որը կտևի մոտավորապես 30-40 րոպե: Հարցազրույցի ընթացքում ես Ձեզ հարցեր կտամ կրծքով կերակրման Ձեր փորձառության և մոտեցումների վերաբերյալ: Մասնավորապես Ձեզ կտրվեն հարցեր հղիության և ծննդաբերության ընթացքի, ծնարանում, հետծննդյան բաժանմունքում և ծննդատնից դուրս գրվելուց հետո կրծքով կերակրման փորձառության վերաբերյալ: Դուք մեկնեք մոտ 20 մայրերից, ովքեր կմասնակցեն այս հետազոտությանը: Ուզում եմ վստահեցնել, որ Ձեր կողմից տրամադրված տեղեկությունները գաղտնի են պահվելու, Ձեր անունը չի նշվելու ոչ մի տեղ և ստացված ողջ ինֆորմացիան ներկայացվելու է միայն ընդհանրական զեկույցի տեսքով: Ձեր համաձայնությամբ ես կձայնագրեմ մեր հարցազրույցը կամ գրառումներ կանեմ հարցազրույցի ընթացքում՝ Ձեր կողմից տրամադրված որևէ ինֆորմացիաբացչթողնելու նպատակով: Իմ գրառումները կամ ձայնագրությունը կպահվի առանց Ձեր անձը բացահայտող որևէ նշման և կոչնչացվի ծրագրի ավարտից հետո: Ձեր ասածներից որոշ մեջբերումներ կարող են ներկայացվել ծրագրի վերջնական արդյունքների մասին զեկույցում, բայց դրանք չեն կրի Ձեր անունը կամ անձը բացահայտող որևէ այլ տեղեկություն: Ձեր մասնակցությունն այս հետազոտությանը լիովին կամավոր է: Դուք իրավունք ունեք բացթողնել այն բոլոր հարցերը, որոնց չեք ցանկանա պատասխանել: Դուք նաև իրավունք ունեք ավարտել հարցազրույցը ցանկացած պահի: Ձեզ

ոչինչ չի սպառնում, եթե Դուք հրաժարվեք մասնակցել այս հարցազրույցին: Այս հարցազրույցին Ձեր մասնակցությունը չի հանգեցնի ոչ որևէ ռիսկի, ոչ էլ որևէ անիմջական օգուտի Ձեզ համար, բայց Ձեր տրամադրած տեղեկությունները կարող են օգնել ոլորտի պատասխանատուներին՝ մշակելու Հայաստանում կրծքով սնուցումը խրախուսող արդյունավետ միջոցառումներ, այդպիսով օգնելով ողջ բնակչության:

Այս հետազոտության վերաբերյալ հարցեր ունենալու դեպքում կարող եք զանգահարել սույն գիտական աշխատության ղեկավարներ Կիմ Հեքիմյանին (WhatsApp +1-201-736-4423) կամ Անահիտ Դեմիրճյանին՝ (+374-60) 61 25 62 հեռախոսահամարով: Եթե կարծում եք, որ այս հետազոտության շրջանակներում Ձեզ հետճիշտչեն վարվել կամ որևէ կերպ վիրավորել են Ձեզ՝ հարցազրույցին մասնակցության ընթացքում, Դուք կարող եք դիմել Հայաստանի ամերիկյան համալսարանի գիտահետազոտական էթիկայի հանձնաժողովի համակարգող Վարդուհի Հայրումյանին՝ (374-60) 612561 հեռախոսահամարով:

Դուք համաձա՞յն եք մասնակցել: Եթե այո, կարո՞ղ ենք սկսել:
Դուք համաձա՞յն եք, որ ես միացնեմ ձայնագրիչը: Խնդրում եմ ասել ԱՅՈ կամ ՈՉ:
Եթե Դուք պատրաստեք, մենք կարող ենք սկսել:

**Appendix 2.**

# Interview Guide

## 1. General information about the history of pregnancy and delivery

***Thank you for agreeing to participate in the interview. Let's start the interview by talking about the period of your pregnancy.***

1.1. Please can you tell me about the period of your pregnancy with your youngest child?
- Probe: Were there any complications/difficulties you could tell me about?

1.2. Starting from what month of pregnancy did you visit prenatal consultation?
- Probe: What counseling did you receive there (e.g., on breastfeeding, breast care, child nutrition, child care, etc.)?
- Probe: If none, did you receive information about any of these issues from some other source(s)? What info did you receive? Where from?

1.3. Now let's discuss your experience when you went into labor and went to the delivery hospital (maternity ward). How did you deliver (Caesarean Section or normal delivery)?

***If delivered by Vaginal delivery***

Please can you tell me how the delivery process went?
- Probe: Did you have any complications or difficulties?

***If delivered by Caesarean Section***

Please can you tell me the reasons you delivered by c-section?
- Probe: Was there an urgent indication(s) for doing a Cesarean Section or was it a planned Cesarean Section?

## 2. Participant's breastfeeding practices in the delivery room

***Now let's talk about your experiences after Caesarean Section/ normal delivery***

***If delivered by Caesarean Section***

2.1. Please tell me about what type of anesthesia was used while performing CS and how was your physical condition after delivery?

**Probe:**
- Have you had acute postpartum pains?
- How long it took from you to restore independent mobility after the Cesarean Section?
- Have you had any postpartum complication(s)?

***If delivered by Vaginal delivery***

- How long after delivery were you able to move or walk on your own?
- Have you had any postpartum complication(s)?

2.2. Do you remember the moment of your child delivery, did doctors place the baby on your chest for skin-to-skin contact and breastfeeding immediately after delivery?

**Probe: If doctors placed the baby on the mother's chest for skin-to-skin contact**

- If yes, for how long time (minutes)?
- Do you remember what happened at that moment? Have you tried to breastfeed? How it went?

**Probe: If doctors did not place the baby on the mother's chest for skin-to-skin contact**

- ♦ If not, did you know or do you remember the reason why the child was not given to you in the delivery room for touching and feeding?

## 3. Participant's breastfeeding practices in the postpartum department

3.1.Now can you tell me what happened after you were transferred to the postpartum department?

- Probe: When was the child first brought to you after delivery?
- Probe: Approximately how much time had passed?
- Probe: At the time the child was first brought to you, did you attempt to breastfeed?
  - ♦ If yes, did you receive any support from the nurses or doctors to breastfeed? What was that like?
  - ♦ If no, why did you not try to breastfeed? Was the infant fed something else before being brought to you?

- Probe: Was the baby with you all the time before being discharged?
  - ♦ If not, when the child was with you?

3.2.Did you breastfeed while being in maternity?

- Probe: If yes, have you had any difficulties during breastfeeding initiation? Could you describe – what difficulties?
- Probe: If not, please indicate the reason(s) for not breastfeeding your baby.

3.3.Did you receive any support in the maternity hospital for breastfeeding?

- Probe: If yes, what support have you received, and from whom? How helpful it was in initiating successful breastfeeding?

- Probe: If not, how did you overcome this initial period of breastfeeding? Have you applied to somebody for help while you were at the maternity hospital or after being discharged? If yes, whom and how did you apply and how useful was their help?

3.4. Was your baby given formula (prelacteal) feeding(s) while in maternity? If yes, what was the reason?

- Did you receive free samples of infant formula while in maternity or at the time of discharge?

**4. Participant's breastfeeding practices after being discharged**

4.1. Now can you tell me what happened after you were discharged?

**If started breastfeeding in the maternity hospital:**

- Probe: Did you continue breastfeeding?
  - ♦ If yes, for how long did you breastfeed your baby? Was that process difficult for you?
  - ♦ If not, can you tell me the reason(s)? Please can you describe how you continued child feeding?

**If did not start breastfeeding in the maternity hospital:**

- ♦ Could you, please, describe how did you feed the child?

**5. Maternity hospital's healthcare providers' involvement in breastfeeding promotion**

5.1 Please describe how supportive the maternity doctors and nurses were for breastfeeding.
5.2 What kind of advice did you get from them?
5.3 How would you assess the healthcare professionals' preparedness in breastfeeding promotion and support?

***Thank you for participating!!! Do you have something to add?***

Interview ID _____

Start Time ___:___

End Time ___: ___

Interview Date ____/____/_____

## Sociodemographic questionnaire for the study participant

1. **Your age (completed years) _____**
2. **Your marital status** ☐ 1. Married ☐ 2. Not married/divorced/other
3. **Your place of residency** ☐ 1. Urban ☐ 2. Rural
4. **Your educational level**
   - ☐ 1. Less than high school
   - ☐ 2. High school/vocational
   - ☐ 3. Bachelor/higher
5. **Your employment status**
   - ☐ 1. Employed/in maternity leave/student
   - ☐ 2. Unemployed
   - ☐ 3. Other _____
6. **How many children do you have? _____**
7. **How did you deliver your youngest child? _____**
8. **What is the age of your youngest child? _____ (months)**
9. **Gender of the youngest child:** ☐ 1. Male ☐ 2. Female
10. **In what maternity hospital you did you delivered? _____**

## Հարցազրույցի ուղեցույց

**1. Ընդհանուր տեղեկություններ հղիության և ծննդաբերության վերաբերյալ**

***Շնորհակալ եմ, որ համաձայնեցիք մասնակցել հարցազրույցին: Եկեք խոսենք այն մասին, թե ինչպես են ընթացել Ձեր հղիությունը և ծննդաբերությունը:***

1.1. Կխնդրեմ մի փոքր պատմեք Ձեր վերջին հղիության ընթացքի մասին:

- **(Հուշում)** Հղիության ընթացում ունեցել ե՞ք որևէ բարդություն, որի մասին կցանկանայիք խոսել:

1.2. Հղիության ո՞ր ամսից եք սկսել այցելել կանանց կոնսուլտացիա:

- **(Հուշում)** Մի փոքր կպատմե՞ք դրա մասին: Ի՞նչ խորհրդատվություն եք ստացել այնտեղ (օրինակ՝ կրծքով կերակրման, կրծքերի խնամքի, երեխայի սնուցման, երեխայի խնամքի մասին և այլն)
- **(Հուշում)** Եթե ոչ մի խորհրդատվություն չեք ստացել, արդյոք որևէ այլ աղբյուրից ստացե՞լ եք տեղեկություններ այս հարցերի մասին:
    - Ի՞նչ տեղեկություններ եք ստացել և որտեղի՞ց:

1.3. Այժմ եկեք քննարկենք այն պահը, երբ Դուք գնացիք ծննդաբերելու և մտաք ծնարան: Ինչպե՞ս ծննդաբերեցիք՝ բնական ճանապարհո՞վ, թե՞ կեսարյան հատումով:

***Եթե ծննդաբերել է բնական ճանապարհով.***

Կխնդրեմ պատմեք՝ թե ինչպես է ընթացել Ձեր ծննդաբերությունը:

- **(Հուշում)** Արդյոք ունեցե՞լ եք որևէ բարդություն կամ դժվարություն ծննդաբերության ընթացքում:

***Եթե ծննդաբերել է Կեսարյան հատումով.***

Կխնդրեմ նշեք այն պատճառ(ներ)ը, որոնք մղել են Ձեզ՝ ծննդաբերել կեսարյան հատման միջոցով:

- **(Հուշում)** Արդյոք եղե՞լ է կեսարյան հատման անհետաձգելի ցուցում, թե՞ այն իրականացվել է պլանային կարգով:

**2. Մասնակցի կրծքով կերակրման փորձը ծնարանում**

*Այժմ եկեք խոսենք կեսարյան հատումից հետո ձեր ունեցած փորձառության մասին:*

*Եթե ծննդաբերել է Կեսարյան հատումով*

2.1. Պատմեք, խնդրեմ, թե ի՞նչ տիպի անզգայացում եք ստացել կեսարյան հատման ընթացքում և ինչպիսի՞ն է եղել Ձեր ինքնազգացողությունը վիրահատությունից հետո:
**(Հուշող հարցեր)**

- Ունեցե՞լ եք արդյոք հետծննդաբերական սուր ցավեր:
- Կեսարյան հատումից հետո ինչքա՞ն ժամանակ անց է վերականգնվել ինքնուրույն շարժվելու Ձեր կարողությունը:
- Ունեցե՞լ եք որևէ հետծննդաբերական բարդություն:

*Եթե ծննդաբերել է բնական ճանապարհով*

- Ծննդաբերելուց որքա՞ն ժամանակ հետո եք կարողացել ինքնուրույն շարժվել կամքայլել:
- Ունեցե՞լ եք որևէ հետծննդաբերական բարդություն:

2.2. Հիշու՞մ եք երեխայի ծնվելու պահը: Կպատմե՞ք, թե արդյո՞ք ծննդաբերելուց անմիջապես հետո բժիշկները երեխայի ինդրել են Ձեր կրծքին՝ գրկելու և կերակրելու համար:
**Հուշող հարցեր՝ եթե բժիշկ(ներ)ը մոտեցրել են երեխայի ին.**

- Եթե այո, ապահի՞նչ տևողությամբ (քանի՞ րոպե)
- Կհիշե՞ք ինչ տեղի ունեցավ այդ պահին: Փորձեցի՞ք կրծքով կերակրել: Ստացվե՞ց:

**Հուշող հարցեր՝ եթե բժիշկ(ներ)ը չեն մոտեցրել երեխայի ին**

- Եթե ոչ, ապակարո՞ղ եք հիշել կամգիտե՞ք պատճառը, թե ինչու՞ երեխայի ին ծնարանումչեն մոտեցրել Ձեզ՝ գրկելու և կերակրելու համար:

**3. Մասնակցի կրծքով կերակրման փորձառությունը հետծննդյան բաժանմունքում**

3.1. Կարո՞ղ եք պատմել, թե ի՞նչ տեղի ունեցավ, երբ Ձեզ տեղափոխեցին հետծննդյան բաժանմունք

- **(Հուշում)** Ծննդաբերությունից հետո ե՞րբ առաջին անգամ երեխայի ին բերեցին Ձեզ մոտ:
- Մոտավորապես ինչքա՞ն ժամանակ էր անցել:

- Երբ երեխայի առաջին անգամ բերեցին ձեզ մոտ, արդյոք փորձեցի՞ք կրծքով կերակրել երեխային:
  - (Հուշում) Եթե այո, արդյոք ստացե՞լ եք որևէ աջակցություն բժիշկների կամ բուժքույրերի կողմից՝ կրծքով կերակրելու ընթացքում:
  - (Հուշում) Եթե ոչ, ինչու՞ չեք փորձել կերակրել երեխային: Արդյո՞ք երեխային կերակրել են որևէ այլ բանով նախքան Ձեզ մոտբերելը:

- **(Հուշում)** Արդյո՞ք երեխան ողջ ընթացքում մնացել է Ձեզ մոտ՝ մինչև դուրսգրումը: Եթե ոչ, ապահե՞րբ է երեխան եղել Ձեզ մոտ:

3.2. Դուք կրծքով կերակրե՞լ եք երեխային՝ ծննդատանը գտնվելու ընթացքում:
- **(Հուշում)** Եթե այո, ապահրևէ դժվարություն ունեցե՞լ եք կրծքով կերակրման ընթացքում: Կնկարագրե՞ք, թե ինչ դժվարություններ եք ունեցել:
- **(Հուշում)** Եթե ոչ, ապահրո՞նք են եղել կրծքով չկերակրելու պատճառ(ներ)ը

3.3. Արդյո՞ք ծննդատանը ստացել եք աջակցություն՝ երեխային կրծքով կերակրելիս:
- **(Հուշում)** Եթե այո, ինչպիսի՞ աջակցություն եք ստացել, ու՞մ կողմից է եղել աջակցությունը և ինչքանո՞վ է այն եղել օգտակար՝ կրծքով կերակրումը հաջող սկսելու համար:
- **(Հուշում)** Եթե ոչ, խնդրումեմ՝ պատմեք, թե ինչպե՞ս եք հաղթահարել կրծքով կերակրման սկզբնական շրջանը:
  - **(Հուշում)** Արդյոք դիմե՞լ եք որևէ մեկի օգնությանը՝ ծննդատանը գտնվելու ընթացքում կամ ծննդատնից դուրսգրվելուց հետո:
  - Եթե այո, ապաու՞մեք դիմել և արդյո՞ք օգնությունը եղել է արդյունավետ:

3.4. Արդյոք երեխայի տրվե՞լ է արհեստական կեր՝ ծննդատանը գտնվելու ընթացքում: Եթե այո, ապահո՞րն է եղել պատճառը:
- Ծննդատանը Դուք ստացե՞լ եք անվճար մանկական սնունդ՝ այնտեղ գտնվելու ընթացքում կամ դուրսգրման պահին:

**4. Մասնակցի կրծքով կերակրման փորձառությունը ծննդատնից դուրս գրվելուց հետո:**

4.1. Այժմ կխնդրեմ պատմեք թե ինչ եղավ ծննդատնից դուրս գրվելուց հետո:

***Եթե ծննդատանը սկսել է կրծով կերակրել.***

- (Հուշում) Արդյոք շարունակեցի՞ք կրծքով կերակրումը:
  - Եթե այո, մինչև ո՞ր տարիքն եք եք կրծքով կերակրել երեխայի: Արդյոք այդ ընթացքը դժվա՞ր էր Ձեզ համար:
  - Եթե ոչ, կարո՞ղ եք նշել պատճառները: Կարո՞ղ եք պատմել, թե ինչպե՞ս եք շարունակել երեխայի կերակրումը:

***Եթե ծննդատանը չի սկսել կրծով կերակրել.***

- Կարո՞ղ եք պատմել, թե ինչպե՞ս եք իրականացրել երեխայի կերակրումը:

**5. Ծննդատան բուժանձնակազմի ներգրավվածությունը կրծքով կերակրման խթանման գործընթացում:**

5.1. Ըստ Ձեզ, որքանո՞վ են ծննդատան բժիշկներն ու բուժքույրերն աջակցում կրծքով կերակրմանը:

5.2. Ինչպիսի՞ խորհուրդներ եք ստացել բուժանձնակազմից դրա վերաբերյալ:

5.3. Ինչպե՞ս կգնահատեք բուժանձնակազմի մասնագիտական պատրաստվածությունը՝ կրծքով սնուցմանը նպաստելու և այն խթանելու համար:

**Շնորհակալ եմ մասնակցության համար:**

**Կա՞, արդյոք, որևէ բան, որ կցանկանայիք ավելացնել:**

Հարցազրույցի ՏՀ _____

Սկիզբ ___:___

Ավարտ ___:___

Հարցազրույցի ամսաթիվ ___/___/_____

## Ժողովրդագրական հարցաթերթիկ մասնակցի համար

1. **Ձեր տարիքը (լրացրած տարիների թիվը). _____**

2. **Ձեր ամուսնական կարգավիճակը.**

☐ 1. Ամուսնացած

☐ 2. Չամուսնացած /բաժանված/այլ _____

3. **Ձեր բնակության վայրը.** ☐ 1. Քաղաք ☐ 2. Գյուղ

4. **Ձեր կրթությունը.**

☐ 1. Ավագ դպրոցից պակաս

☐ 2. Ավագ դպրոց կամ միջին մասնագիտական

☐ 3. Բակալավր կամ ավելի բարձր

5. **Ձեր աշխատանքայինկարգավիճակը.**

☐ 1. Աշխատում եմ/ֆիզ. արձակուրդում եմ/ուսանող եմ

☐ 2. Չեմ աշխատում

☐ 3. Այլ _____

6. **Քանի՞ երեխա ունեք:** _____

7. **Ի՞նչ եղանակով եք ունեցել Ձեր ամենափոքր երեխային:**

_____

8. **Քանի՞ ամսական է Ձեր ամենափոքր երեխան:** _____

9. **Ձեր ամենափոքր երեխայի սեռը.** ☐ 1. Արական ☐ 2. Իգական

10. **Ո՞ր ծննդատանն եք ծննդաբերել:** _____