ABSTRACT

Objective: To identify the prevalence and limiting factors of breastfeeding in the first hour of life at the Maternity Center of Hospital Israelita Albert Einstein, where the predominant model of childbirth care is largely based on the use of modern technology. Methods: A retrospective study with quantitative analysis in a middle and upper class population of different cultural backgrounds. Data were obtained from the delivery record book in a total of 12,350 births from January 2004 to December 2007. Results: Of 12,350 births, 3,277 (26.9%) were excluded because of contraindications to breastfeeding in the first hour of life such as: prematurity, respiratory distress, adverse effects of anesthesia, obstetric conditions, congenital malformation, and others. Other 180 cases were excluded due to missing data. Of the remaining 8,893 cases, 2,279 (18.7%) were not breastfed because of limiting factors that require improvement actions: high delivery turnover, patient refusal, medical refusal, tiredness due to prolonged labor, loss of data recording. Cesarean delivery and the use of anesthesia did neither prevent breastfeeding in the first hour of life nor skin-to-skin contact. The prevalence was 74.3%. Conclusions: The use of technology and the hospital practices interfere in breastfeeding, but are not factors that prevent it. The identification of the prevalence and limiting factors contributes to the evaluation of the care provided and elaboration of nursing interventions for continuous improvement of the care practice. Improvement actions should include prenatal care and delivery itself.

Keywords: Breast feeding/contra-indications; Mother-child relations; Labor, obstetric

INTRODUCTION

Breastfeeding is a physiological act biologically determined, though influenced by emotional, social, political and cultural aspects. The use of technology and the hospital practices interfere in breastfeeding, but are not factors that prevent it. The identification of the prevalence and limiting factors contributes to the evaluation of the care provided and elaboration of nursing interventions for continuous improvement of the care practice. Improvement actions should include prenatal care and delivery itself.
In the past decades, one of the factors that contributed to the decline of the traditional breastfeeding practice, albeit involuntarily, was the use of modern technology in childbirth care(2).

With the scientific progress and the new discoveries in the fields of asepsis, surgery, anesthesia, antibiotic therapy, and blood transfusion, hospital risks have decreased and interventions have been more frequently implemented, resulting in a progressively higher incidence of cesarean deliveries(3-4). Hospital routines have also been established, which, for supposedly scientific reasons, or aiming at a better service organization, promoted the separation between the mother and her newborn soon after birth, with a negative impact on breastfeeding(5).

In 1989, the World Health organization (WHO) established recommendations on the appropriate technology for childbirth care and some of them are directly related to breastfeeding because they directly influence maternal recovery and the neonate: cesarean delivery rate should not exceed 15%; analgesia and anesthesia should not be routinely performed because some of the drugs used during labor and delivery may cause sleepiness both in the mother and the newborn; labor induction should be medically indicated and should not exceed a 10% rate in a given medical service(6). Breastfeeding should be initiated within the first hour of life in the delivery room if the mother and newborn are in good health, thus favoring the skin-to-skin contact between both(7-8). Early contact between mother and child is associated with longer duration of exclusive breastfeeding(9-10).

The advantages of early breastfeeding are innumerous and acknowledged: with the skin-to-skin contact soon after birth, the newborn’s intestine will be colonized by microorganisms from the mother’s skin flora should she be the first to hold the child(11-12). Additionally, the mother’s body warms up the newborn at an adequate temperature thus avoiding hypothermia. The sudden temperature drop may cause metabolic problems to the newborn(8-9). By suckling the colostrum, the infant will be immunized and protected against infections(12). Colostrum is laxative and helps prevent and reduce physiologic jaundice by stimulating peristaltic movements with subsequent meconium passing(6) and less bilirubin is absorbed through the enterohepatic circuit; it prevents hypoglycemia which is frequently the reason for prescription of other type of milk as supplemental feeding for the newborn(7,13). Nipple suckling stimulates the hypophysis to secrete prolactin and oxytocin, thus leading to milk production and uterine contraction that helps uterine involution and decreases the risk of postpartum hemorrhage(5,8,14). The affective bond is strengthened. Newborns, whose mothers were not given sedatives during labor, are in an alert and calm state soon after birth for approximately 40 minutes. After one hour and a half of life, alert states are usually no longer observed for such prolonged periods. In relation to the maternal behavior, some studies have shown that, at the moment of labor, some female hormones that lead to a maternal behavior are produced, thus facilitating physiological changes from the pregnant to the puerperal state. Ocytocin is one of these hormones. Soon after birth, the mother is eager to touch her newborn and both are impregnated with substances that make them biologically prepared for an interdependence(14). This is the moment of maximum strengthening of the affective bond and lactation stimulation(6).

Aiming to reduce the possible negative effects that the use of modern technology and hospital practices could have on the initiation and establishment of breastfeeding, in 2002, the nursing team of the Maternity Center of Hospital Israelita Albert Einstein (HIAE) started a program to encourage, promote and support breastfeeding in the first hour of life.

OBJECTIVE

The objective of this study was to identify the prevalence and the limiting factors of breastfeeding in the first hour of life in the context of the breastfeeding promotion program of HIAE.

METHODS

The study was carried out at maternity center of HIAE. The Maternity center provides health maintenance organization (HMO) care or private health care to pregnant women followed up by medical teams of their own choices registered in the Maternity center of the Hospital. The patients seen in the Maternity center are from different cultural backgrounds and most of them are from the middle and upper class(15). In the program to encourage, promote and support breastfeeding in the first hour of life, every puerperal woman is invited to breastfeed their baby soon after delivery, since both the mother and the newborn are in good health. Breastfeeding can take place in the delivery room, in pre-delivery rooms or in the “labor and delivery rooms” (LDR). The LDR, also known as PDP (pre-delivery, delivery and puerperium) room is a delivery suite equipped for the performance of vaginal births of low-risk pregnancies. This room can be chosen at the discretion of the patient and her obstetrician, and that is where the patient remains during all stages of labor.

Study design: This is a descriptive and retrospective study with quantitative analysis of 12,386 consecutive
births that occurred in the Maternity center at HIAE from January 2004 to December 2007.

Study sample: Of the total births in the period, 12,350 met the following inclusion criteria: live births delivered by cesarean section, gestational age longer than 20 weeks, and birth weight greater than 500g. Exclusion criteria were abortions and stillbirths.

Procedures: Data were collected from the delivery record book of the Obstetric Center in which two fields were included: one to write down whether or not breastfeeding occurred, and other to write down the reasons why breastfeeding did not occur. In order to standardize and facilitate the recording of data, a box including the probable causes of non-breastfeeding was created with the respective acronyms for record (Chart 1).

Prevalence was calculated using the ratio between the number of newborns breastfed and the number of live births with no contraindication for breastfeeding, excluding the cases for which data on breastfeeding were missing (Table 1), since the program of promotion and support of breastfeeding in the first hour of life includes only mothers and newborns in good health. Our goal was to reach breastfeeding of 70% of live births in the study period, and the prevalence was classified as: very satisfactory above 80%; satisfactory between 70 and 80%; fairly satisfactory between 60 and 70%; and unsatisfactory under 60%.

During the study period, annual training and update courses with the nursing team of the Breastfeeding Support Group (Grupo de Apoio ao Aleitamento Materno – GAAM) were carried out.

RESULTS

In the study period, 11,863 deliveries were conducted with 12,350 live births. Of the 11,863 deliveries, 9,080 (76.5%) were cesarean sections and 2,783 (23.5%) were vaginal births. Annual distribution of modes of delivery is shown in Table 2.

Of the 12,350 live births, 180 were excluded for calculation purposes because their respective data on breastfeeding were missing. Of the 12,170 remaining newborns, 5,556 (45.6%) were not breastfed in the first hour of life due to limiting factors (Table 3). A total of 6,614 newborns were breastfed in the first hour of life, thus corresponding to a crude breastfeeding rate of 54.3%. However, among the limiting factors, some factors that contraindicated breastfeeding in the first hour of life (3,277 or 26.9%), on which no action could be taken, were found, and factors that require improvement measures (2,279 or 18.7%), on which interventions should be made in order to improve the health care practice. To obtain the prevalence, the newborns with factors contraindicating breastfeeding in the first hour of life (3,277) were excluded from the total live births (12,170). Thus, 8,893 newborns and mothers in good health for breastfeeding remained, of whom 6,614 were effectively breastfed. The prevalence of breastfeeding in the first hour of life was, therefore,
Factors limiting breastfeeding in the first hour of life

<table>
<thead>
<tr>
<th>Factors contra-indicating breastfeeding</th>
<th>Variables</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prematurity</td>
<td>1,165</td>
<td>35.5</td>
<td></td>
</tr>
<tr>
<td>Respiratory distress</td>
<td>1,061</td>
<td>32.4</td>
<td></td>
</tr>
<tr>
<td>Adverse effects of anesthesia</td>
<td>778</td>
<td>23.7</td>
<td></td>
</tr>
<tr>
<td>Others causes related to newborn</td>
<td>140</td>
<td>4.3</td>
<td></td>
</tr>
<tr>
<td>Obstetric conditions, maternal diseases</td>
<td>17</td>
<td>3.6</td>
<td></td>
</tr>
<tr>
<td>Congenital malformation</td>
<td>16</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Total newborns</td>
<td>3,277</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factors requiring improvement</th>
<th>Variables</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>High delivery turnover</td>
<td>862</td>
<td>37.8</td>
<td></td>
</tr>
<tr>
<td>Refusal by patients</td>
<td>696</td>
<td>30.5</td>
<td></td>
</tr>
<tr>
<td>Medical refusal</td>
<td>405</td>
<td>17.8</td>
<td></td>
</tr>
<tr>
<td>No cause recorded</td>
<td>210</td>
<td>9.2</td>
<td></td>
</tr>
<tr>
<td>Tiredness</td>
<td>82</td>
<td>3.6</td>
<td></td>
</tr>
<tr>
<td>Pain</td>
<td>9</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>Others causes</td>
<td>15</td>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td>Total newborns</td>
<td>2,279</td>
<td>100.0</td>
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</tr>
</tbody>
</table>

74.2% in the study period. The frequency of values obtained is shown in Table 1.

Based on data from Table 1, the following annual prevalence rates were found: 76.8% in 2004; 73.9% in 2005; 70.7% in 2006 and 75.9% in 2007.

The 3,277 (26.9%) newborns who were not breastfed due to factors contraindicating breastfeeding in the first hour of life were thus distributed (Table 3): 1,165 due to prematurity (newborns with gestational age bellow 37 weeks); 1,061 due to respiratory distress (newborns with respiratory distress and gestational age above 37 weeks); 778 due to adverse effects of anesthesia (nausea and vomiting, hypotension, sleepiness, sedation); 140 due to other causes related to the newborn (such as meconium aspiration and depressed neonate); 117 due to maternal causes such as obstetric conditions (eclampsia, placental abruption, uterine atony); maternal diseases (HIV+, hepatitis B, mastectomy patient); postpartum surgeries such as hysterectomy, hemorrhoidectomy, curettage; transfer to the ICU, Post-Anesthesia Recovery Unit (PACU); and 16 due to congenital malformation that made breastfeeding impossible (cleft lip and palate), and congenital heart defect.

The 2,279 (18.7%) newborns who were not breastfed in the first hour of life due to factors requiring improvement actions were thus distributed (Table 3): 862 due to the high delivery turnover in the sector, with lack of rooms and pre-delivery rooms available for breastfeeding; 696 due to refusal of patients who preferred to breastfeed in the room or who chose not to breastfeed for personal reasons; 405 due to medical refusal (anesthesiologist, obstetrician, pediatrician); 210 for reasons not specified in the records; 82 due to tiredness resulting from prolonged labor; 15 for external causes not related to the mother or the newborn; and nine due to postpartum pain.

**DISCUSSION**

Currently, most childbirths in Brazil take place at hospitals and are assisted by obstetricians. The obstetric care model is characterized by medicalization in which the medical practice is sometimes based on convenience and not on technical reasons that support it(7,14). According to a survey ordered by the Ministry of Health, 2006 data, the cesarean section rate reaches 44% of deliveries performed in Brazil(17). If only women using HMO plans are considered, this percentage increases to 80%. The high cesarean section rate is related to indications based on physician’s choice, woman’s choice, and to its use as a means of permanent sterilization(17).

The value and contribution of the technological advances for the reduction of neonatal and maternal morbidity and mortality cannot be denied(7,14). Misuse of technology, on the other hand, may bring serious health problems, in addition to interfering with breastfeeding(7).

When the results obtained are analyzed, several aspects that interfered directly with breastfeeding in the first hour of life emerged, some of them related to the use of modern technology, on which no actions can be taken, and others than can be improved. We believe that one of the main issues is that our hospital works with external health care professionals; thus, the different cultural origins of the patients and the care provided by medical teams of different academic backgrounds result in different ways of dealing with delivery and birth. This leads to quite different forms of childbirth care, going from the most traditional form, with intervention management and use of modern technology such as ultrasonography, anesthesia and analgesia, use of prostaglandins, oxytocin, dinoprostone, continuous fetal monitoring, elective cesarean sections, to the performance of humanized childbirths with the use of whirlpool tubs for relaxation, of ball to help descent, room music at the patient’s choice, and father’s participation. Some medical teams even perform “humanized” c-sections when normal delivery is not possible, by dimming the light in the delivery room, using room music, enabling skin-to-skin contact soon after birth and active father’s participation by cutting the umbilical cord.

Another important aspect that could have influenced the results (crude breastfeeding rate) is the fact that the Maternity center at HIAE also treats high-risk pregnant women, and this could increase the number of justified medical interventions,
thus increasing the rate of contraindications for breastfeeding in the first hour of life.

It is important to underscore that although the rate of c-sections performed during the study period is considered high\(^{16-17}\) and that anesthesia and/or analgesia is used in the great majority of deliveries performed in the Institution, in the context of the program of promotion and support to breastfeeding in the first hour of life, these factors were only considered contraindications to breastfeeding and skin-to-skin contact in the cases in which some adverse event occurred.

The prevalence reached the goal established and was considered satisfactory. The analysis of factors shows that it can be further improved by means of preparing nursing interventions.

Among the limiting factors that require improvement actions, the percentage of high delivery turnover in the sector and subsequent lack of rooms or pre-delivery rooms available for breastfeeding was the most important. Prior scheduling of elective deliveries and elective c-section patient stay in the wards until the moment of delivery are interventions that can optimize the use of delivery and pre-delivery rooms, thus preventing the overlapping of birth times.

As regards the patient refusal to breastfeed soon after birth and the tiredness due to prolonged labor, we have to consider that the patient is a subject of the process and has decision power\(^{18}\). However, we observe that, soon after birth, puerperal women are emotionally fragile and sometimes unable to make up their minds; other times, they are poorly informed. At this moment, they must be sheltered, guided, and encouraged to be successful in the initiation and establishment of breastfeeding. The importance that educational actions start in the prenatal period, both in medical offices and in birth preparation courses, and extend until delivery, should be emphasized. Well-informed patients are more prone to breastfeeding soon after birth.

The factor medical refusal to breastfeeding was sometimes a decision from the anesthesiologist who, concerned about adverse effects of anesthesia, chose to contraindicate breastfeeding soon after birth and even to transfer the puerperal woman to the post-anesthesia recovery unit. In other cases, it was a decision from pediatrician who, concerned about hypothermia and the onset of metabolic problems, required the newborn to be transferred to the nursing room. Sometimes the obstetrician was responsible for the refusal, with the purpose of preserving the mother and letting her rest. The role of the nursing team is key in this process: it should act as a facilitator and work with the medical teams in order to inform them, make them aware, and integrate them into the program of promotion and support to breastfeeding in the first hour of life. To accomplish this task, the nursing team must have scientific knowledge, technical capacity and personal involvement.

The nursing team endeavored to record the data. Data loss was considered small, but can be improved by means of annual update courses in which the importance of these recordings is emphasized, and by choosing a representative to review and complement data recording.

The incidence of the factor pain after delivery was not significant, and this was already expected since almost all patients received some type of anesthesia. The incidence of the factor “other causes” was also not significant and description of these causes was missing.

The results of the study are consistent with those of other studies\(^{2,4-5}\) that reported that hospital practices and the use of modern technology may interfere with breastfeeding in the first hour of life.

The expectation is that this study encourage and help the implementation of programs that promote and support breastfeeding in the first hour of life in other hospital institutions where modern technology is part of childbirth care.

**FINAL CONSIDERATIONS**

The effort and cooperation of the whole nursing team to participate in this program was decisive for the results obtained, and provided mothers and newborns with the right of breastfeeding in the first hour of life and of skin-to-skin contact.

**CONCLUSIONS**

The prevalence of breastfeeding in the first hour of life was 74.3% among healthy mothers and newborns, and the main limiting factors were identified, whether subject to intervention or not. The identification of these limiting factors and of the prevalence permitted the evaluation of the care provided and the elaboration of nursing interventions for continuous improvement of the care practice. These interventions should involve both medical and nursing teams and should be started in the prenatal period and extended until delivery.

**ACKNOWLEDGEMENTS**

We would like to thank Miriam Rissi Carlotti, Administrative assistant of the Maternal-Child Department, HIAE, for providing data; Dr. Conceição Aparecida de Mattos Segre, for her support and orientation.
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