






Analysis of indicators of good delivery and birth care practices in a maternity hospital: an observational study

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ABSTRACT

Introduction: The use of good delivery and birth care practices has been an alternative to better care for the mother-baby binomial. **Objective:** The study aimed to analyze the occurrence of good practices of delivery and birth in a maternity hospital located in the Northeast of Brazil. **Methodology:** This is a quantitative, retrospective and documentary study, carried out in a maternity hospital in Northeastern Brazil. The sample consisted of 1,442 parturient women at usual risk, monitored from January 2020 to December 2021. **Results:** In the investigated population, most of these parturients 71.4% underwent the cesarean section procedure. When the association between mode of delivery and the use of good delivery and birth practices was evaluated, it was found that women who had normal delivery were 3.95 more likely to have skin-to-skin contact with their children (95% CI =2.21-7.08). In addition, they were 13.2 more likely to use non-pharmacological methods for pain relief during labor (95% CI =8.21 - 21.3), and 1.7 more likely to have a companion (95% CI = 1.15 - 2.73) when compared to women who underwent a cesarean section. Regarding neonatal care, the results showed that normal delivery provided 1.6 more chances of timely clamping (95% CI =1.24-2.21). **Conclusion:** Women whose deliveries were normal were more likely to experience good practices of delivery and birth, recommended by the World Health Organization, such as the use of non-pharmacological methods, having the presence of a companion, as well as experiencing skin-to-skin contact, in addition to late or timely clamping of the newborn's umbilical cord.

Keywords: Maternal and child health services, Comprehensive health care, Mother-child relationship, Normal birth, Humanized birth.

INTRODUCTION

The initial objective of the institutionalization of delivery was to make it safer for the mother/child binomial, aiming at improving maternal and perinatal morbidity and mortality indicators. However, the realization of this model reconfigured pregnancy, delivery and birth as a disease and not as an expression of health. The high rates of interventions such as episiotomy, oxy-

cin use, cesarean section, nasopharyngeal aspiration, among others, have become routine. This excess of interventions left in the background the emotional, human and cultural aspects that are expressed during the process of giving birth and being born^{1,2}.

In order to establish adequate and safe practices for labor assistance, focusing on women's protagonism and reducing the use of unnecessary interventions,

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the World Health Organization (WHO) in 1996 developed a classification of common practices in the conduct of normal delivery. The recommendations were classified by categories, which portrayed the practices that should be encouraged, those that were harmful or ineffective, those that could be used with caution and those that were used improperly³⁻⁵.

In 2018, the WHO published a new recommendation called "Intrapartum care for a positive childbirth experience"⁶, consisting of 56 recommendations focusing on spontaneous and eutocic labor, with a healthy mother and fetus. Among these are the presence of the companion, guarantee of respectful care and good communication between women and the health team, maintenance of privacy and confidentiality, freedom in making decisions about pain management, positions for labor and birth, the choice of position in the expulsive period of the fetus, among others⁶.

In 2022, a new update of the National Guidelines for Assistance to Normal Delivery⁷ was published, which emphasizes the inclusion of the patient in decision-making, as well as a summary of recommendations during labor, some of which are: the use of partogram in delivery care, pain management with pharmacological and non-pharmacological approaches, diet, physical and emotional support⁷.

Thus, comprehensive and quality care is important factor for the health of the binomial (mother-child), such as the care provided by the team from reception to delivery and postpartum. Therefore, improving health indicators will only add to the quality of the service provided.

Therefore, there is a need to know

the application of good practices in delivery and birth through their indicators, in order to guarantee safe, quality care, free from losses and misconceptions, essentially humanized, as recommended by the Ministry of Health, in order to intervene positively in the perceived experience.

Thus, the study aims to analyze the offer of good practices of delivery and birth in a maternity hospital in Northeastern Brazil.

METHOD

This is a quantitative, retrospective and documentary study, carried out in a maternity hospital in Northeastern Brazil.

The research was developed in a public maternity hospital in Northeastern Brazil. The sample had as inclusion criteria pregnant women of usual risk, normal delivery or cesarean section, attended at the obstetric center and later hospitalized at the Obstetric Clinic. Participants who had data inconsistencies in the records of the labor and birth indicator book were excluded. Thus, in the end, the sample consisted of 1,442 parturient women at usual risk, who used the obstetric center in the period between January 2020 and December 2021.

Data were collected through the records of maternity health professionals, with sociodemographic information, obstetric and neonatal history and indicators of good delivery and birth practices, considering the use of Non-Pharmacological Method (NPM), Skin-to-Skin Contact, Presence of companion, Umbilical Cord Clamping, decreased episiotomy practice and reduced use of pharmacological methods. To avoid potential sources of bias, measures

were adopted, such as the production of a standardized questionnaire for the collection of information from the medical record, as well as data were collected by only one evaluator to avoid collection failures.

For data analysis, the Statistical Package for Social Sciences (SPSS), version 22, was used. To characterize the sample, descriptive analyses were performed: measures of central tendency (mean), dispersion (standard deviation) and frequencies (absolute and relative). Subsequently, Pearson's Chi-square test was performed and the Odds Ratio (OR) was estimated to analyze the association between delivery route and indicators of good delivery and birth practices (NPM, presence of companion, cord clamping and skin-to-skin contact), considering the statistical significance level of $p < 0.05$.

The elaboration of this project respected the precepts emanated by Resolution 466/2012 of the National Research Ethics Commission (CONEP), which deals with studies with human beings (BRASIL, 2012).

The project was submitted to and approved by the Research Ethics Committee of the Federal University of Rio Grande do Norte/ College of Health Sciences of Trairi, with CAAE number 54029421.9.0000.5568 with waiver of the Informed Consent Form (ICF), according to the methodology presented.

RESULTS

Data on delivery and birth indicators were collected; referring to a total of 1,442 parturients classified as usual risk pregnancies. They had a mean age of 27.3 years (± 6.8), with 2.06 (± 1.19) pregnancies and 0.89 (± 1.03) deliveries. The mean gestational age was 39 weeks and 2 days of gestation (± 2.12). Other sociodemographic data were not available.

They had an mean of 8.71 (± 2.74) prenatal consultations, of which 80.8% of patients had 7 or more consultations during the prenatal period. The data described are presented in Table 1.

Table 1: Characteristics of parturients/puerperal women admitted to a maternity hospital in Northeastern Brazil, from January 2020 to December 2021.

Variables	Mean (n=)	SD
Maternal age	27.3 years	(±6.8)
Obstetrical History		
Gestation	2.06	(±1.19)
Delivery	0.89	(±1.03)
Abortion	0.16	(±0.46)
Gestational age	39.2	(±2.12)
Number of prenatal appointments	8.71	(±2.74)
1-3	2.6% (36)	
4-6	16.6% (231)	
> 7	80.8% (1128)	

Source: Research data.

Table 2 shows the data regarding the characteristics of the newborns, 87.1% had adequate birth weight between 2,500g and 3,999g. Most were classified as full-term (95.3%), with gestational age between 37 weeks and 41 weeks and 6 days. Regar-

ding the evaluation of the vitality of the NB evaluated by the APGAR score, 92% had a score between 7-10 in the first minute evaluation. In the evaluation at the fifth minute of life, 97.8% scored between 7-10.

Table 2: Characteristics of newborns admitted to a maternity hospital in Northeastern Brazil, from January 2020 to December 2021.

Variables	%
Weight classification:	
Low weight (NBLW) 2.500kg	6.7% (97)
Suitable weight > 2.500kg – 3.999kg	87.1% (1256)
Macrosomic > 4.000kg	6.2% (89)
Age classification:	
Preterm newborn	4.4% (61)
Full-term newborn	95.3% (1335)
Post-term newborn	0.3% (4)
APGAR 1'	
0-3	2.8% (39)
4-6	5.3% (74)
7-10	92% (1296)
APGAR 5'	
0-3	1.4% (20)
4-6	0.8% (11)
7-10	97.8% (1379)

Source: Research data.

Regarding the indicators of delivery and birth care, the study shows that most women had the presence of a companion during prepartum, delivery and immediate postpartum, with 91.8% in normal delivery and 86.3% in cesarean delivery and most of the female companions.

The use of NPM for pain relief was present in the two birth routes evaluated, and its use (76.1%) was more prevalent in parturients who experienced normal delivery. The skin-to-skin contact index at normal delivery was 95.8% and at cesarean delivery was 85.2%. In both birth routes, immediate clamping prevailed, with 48.2% in normal delivery and cesarean delivery 60.8%.

Regarding the use of pharmacological methods to induce normal labor, 57.5% of the parturients used oxytocin and 8.8% used misoprostol to induce labor. Even using such inducing drugs, some did not progress to normal delivery. Of those who used misoprostol 5.8% had to undergo a cesarean section and 14.6% who used oxytocin had the outcome of cesarean delivery.

Regarding the presence of perineal traumas, laceration was present in 48% of vaginal deliveries, while episiotomy was present in 17.9%. Table 3 presents the results of the significant association between the route of birth and good delivery and birth practices.

Table 3. Association between birth route and good delivery and birth practices, which occurred in a maternity hospital in Northeastern Brazil. 2020-2021

Variable	Delivery		Total	p-value
	Normal	Cesarean		
Utilization de NPM				
No	48 (22.9%)	162 (77.1%)	210 (100%)	
Yes	153 (79.7%)	39 (20.3%)	192 (100%)	0.000*
Skin-to-Skin Contact				
No	15 (19.2%)	63 (80.8%)	78 (100%)	
Yes	341 (48.5%)	362(51.5%)	703 (100%)	0.000*
Presence of companion				
No				0.008*
Yes	30 (23.4%)	98 (76.6%)	128 (100%)	
	336 (35.3%)	616 (48.0)	952 (100%)	

Umbilical Cord Clamping				
Chief Officer	167 (39.5%)	256 (60.5%)	423 (100%)	0.001*
Late/Timely	179 (52.0%)	165 (48.0%)	344(100%)	

Legend: * Pearson's chi-square test, statistically significant $p < 0.05$; NPM: Non-pharmacological methods for pain relief

When estimated OR, it was found that women who had normal delivery were 3.95 more likely to have skin-to-skin contact with their children (95% CI = 2.21-7.08). As well as being 13.2 more likely to have used NPM during labor (95% CI= 8.21-21.3), 1.6 more likely for their children to have timely/late clamping (95% CI= 1.24-2.21) and 1.7 more likely to have a companion (95% CI = 1.15-2.73) than women who underwent a cesarean section.

DISCUSSION

Obstetric data and neonatal care

The results of the study showed that the mean gestational age of the participants was full-term, at 39 weeks and 2 days⁸. Prenatal consultations had a mean above that proposed by the Ministry of Health, which recommends at least 6 consultations throughout pregnancy⁹. The importance of prenatal care for the prevention and early detection of maternal and fetal pathologies is verified, in addition to instructing on the entire process of pregnancy and puerperium and the influences of choices throughout this monitoring¹⁰.

The research obtained as a result 71.4% of the parturients who underwent cesarean section in the years 2020 to 2021, being higher than the normal delivery route. This finding is approximately five times the

values recommended by the WHO, which corresponds to 10% to 15% of cesarean deliveries, since numbers greater than these values do not bring benefits to the binomial¹¹.

Comparing these findings with the prevalence of cesarean delivery in 2020 in Brazil (57%), in the Northeast region (53%) and in the state of Rio Grande do Norte (64%) where the research institution is located, the high rate of cesarean deliveries performed in the institution is notorious¹².

In a retrospective study¹³ on the number of vaginal and cesarean deliveries in Brazil, it corroborates the results of the study under discussion, showing that between the periods of 2000 and 2019 the normal delivery rate decreased and, on the other hand, there was an increase in the number of cesarean deliveries, making it a common procedure in the country. This increase is not only due to clinical indications, but also for reasons such as convenience for the mother, fear of pain (placed as the main factor), previous negative experiences, apprehension of anatomical and functional changes¹³.

These findings denote the need to adopt policies and strategies that encourage health professionals to guarantee normal delivery to these parturients¹, as well as to seek to make mothers aware of the negative impacts of surgical intervention,

which is the best way to reduce surgical delivery rates¹⁴.

The study also evaluated the vitality of the newborn (NB) through an instrument widely used in the clinic: the APGAR score, an important instrument to help detect possible respiratory or cardiac changes¹⁵. The results found that in the evaluation of the first minute 92% of the NB had a score between 7-10 and in the fifth minute of life 97.8% scored between 7-10. Thus, most were born with good vitality. These findings were similar to the results of a study carried out in the municipality of the state of Ceará (CE), in which 98.43% of newborns obtained a score between 7-10 points¹⁶.

The results contribute to the visualization of the importance of quality prenatal care and result in a decrease in neonatal mortality and a satisfactory Apgar score, since they reflect on the well-being of the newborn and are useful for identifying additional care for children, even in the absence of laboratory data¹⁷.

Companion during labor and birth

Regarding the indicators of delivery and birth care, the third recommendation of the WHO guides the presence of the companion¹⁸. The results indicate that 91.8% of the parturients were accompanied in normal delivery, while in cesarean delivery it was only 86.3%. Thus, women who experienced normal delivery were 1.7 times more likely to have a companion (95% CI =1.15 - 2.73) than women who underwent a cesarean section.

In a cross-sectional survey¹⁹, with 2,070 women from the southern region of Brazil who went into labor, they observed

that the presence of the companion was more frequent in labor than in delivery and cesarean section. This restriction may occur because professionals disregard family importance, instead considering delivery as a "sterile" environment and a medical act, without the presence of lay people, due to the potential risk or possibility of interventions in cases of obstetric complications¹⁹.

A qualitative systematic review²⁰ concluded the importance of the presence of the companion in contributing to a positive experience in delivery, in four different ways: in helping non-pharmacological pain relief, with informational and emotional support and self-confidence at the time of delivery. Thus, the importance of the companion throughout the labor process is highlighted, since it brings a positive experience to the woman during this phase of life.

Non-pharmacological methods for labor pain relief

The recommendations 21 and 22 of WHO¹⁸ present the use of NPM for pain relief. In the current study, this recommendation was present in the two birth routes evaluated (normal delivery and cesarean section), with the use of NPM being more predominant in parturients who experienced normal delivery (76.1%), compared to cesarean delivery (19.4%). This finding demonstrates that normal delivery provided the parturient with 13.2 more chances of using NPM during labor (95% CI =8.21 - 21.3).

It is worth mentioning that NPM were offered to all parturients admitted to the service, respecting the women's desire and meeting their needs. However, some pregnant women in active labor, who were re-

ceiving non-pharmacological methods, had an indication for cesarean section.

A randomized trial²¹ in Brazil, with 80 low-risk primiparous women, evaluated the efficacy of a non-pharmacological protocol to assist women in the active phase of labor, emphasizing the use of NPM for the management of pain relief and demonstrated that ambulation, transcutaneous electrical nerve stimulation (TENS), change of orthostatic positions and hot shower baths have the potential to relieve labor pain, reflecting in the decrease and delay of the use of pharmacological analgesia and dystocia rate²¹.

Another randomized study with hidden allocation²², conducted in Brazil, evaluated eighty women admitted to labor at the end of a low-risk pregnancy and compared the two groups of parturients to analyze the benefits of NPM for pain management, demonstrating significant results, in which the experimental group obtained significantly lower pain intensity through Swiss ball exercise, lumbosacral massage and warm bath. In addition, it delayed the use of analgesics and presented better neonatal outcomes and maternal satisfaction, compared to the group that received usual care.

Related to the use of drugs during delivery, our results showed greater use of oxytocin in the institution, with 14.6% in labor that later evolved to a cesarean section; and 57.5% during labor that evolved to normal delivery. The use of these drugs indiscriminately and without indication is not recommended by WHO¹⁸ and the control of the use of this drug is described in "recommendations 9, 27, 29 and 30".

Thus, it can be concluded that the use of NPM has positive implications during

labor, favoring a significant experience for the parturient. Furthermore, the importance of health education for the recommended use of pharmacological methods is evident.

Skin-to-skin contact

According to the WHO checklist implementation guide¹⁸ for safe deliveries, recommendation 48 suggests skin-to-skin contact, during the first hour after birth, to prevent hypothermia and promote breastfeeding. In the current study, 85.2% experienced skin-to-skin contact during cesarean section and 95.8% during normal delivery. When estimated OR, it was found that women who underwent vaginal delivery had a 3.95 chance of having access to this practice with their children (95% CI =2.21-7.08).

The result of this research was similar to a cross-sectional study²³ carried out in Brazil, which evaluated 82 puerperal women admitted to rooming-in and found that 95% made skin-to-skin contact with the baby, a satisfactory result that reflects the quality of care provided by professionals. Since it is recommended in the first 30 minutes of the newborn, they should be placed next to the mother, in order to stimulate breastfeeding and promote the recognition of the baby. In addition, stimulating the mother-child bond and the reflex of milk descent from the first suction²³.

Timely umbilical cord clamping

According to recommendation 44 of WHO¹⁸, late or timely clamping of the umbilical cord is one to three minutes after birth, which is the most indicated practice. However, our results show that the majority obtai-

ned immediate clamping, with a prevalence of 60.8% in cesarean section and 48.2% in normal delivery. On the other hand, in the study carried out with 300 mother-infant pairs in southern Brazil²⁴, 53.7% were submitted to late/optimal umbilical cord clamping.

Despite the available protocols and research, as well as the existence of policies that recommend and highlight the benefits of late clamping, these results may indicate a resistance on the part of health professionals to change their practices²⁴. Thus, it is important to carry out training, events and that it is part of the routine of these professionals to read the recommendations and updates of good care practices for normal birth.

Laceration and Episiotomy

Laceration is an event where the tissues of the perineum spontaneously rupture, thus facilitating the passage of the fetus, while episiotomy is a procedure where a surgical cut is performed in the perineum region by the obstetric professional, being considered a type of obstetric violence, and it is recommended by the WHO that these values do not exceed 10%²⁵. Our results showed an index of 17.9% being a value above the recommended in episiotomy, and 48% in laceration.

In a systematic review²⁶ that aimed to analyze the risk factors for severe perineal trauma during delivery, it was observed that an episiotomy, instrumental delivery and a posterior occipital fetal position were associated with a higher risk of developing severe perineal lacerations²⁶. Assistance is the greatest factor of perineal protection that exists, and that episiotomy does not need

to be done in any clinical situation, as there is no evidence of its use for instrumental delivery nor less in fetal suffering.

The study has limitations because it relies on data from medical records, since there is incomplete and not correctly recorded information. Thus, the importance of recording legible and complete information to support continuity and planning of care in healthcare is highlighted.

CONCLUSION

Based on the results, it was found that most women had access to good practices of delivery and birth, regardless of the life of delivery. However, women whose deliveries were normal were more likely to use NPM, to have the presence of a companion, as well as to experience skin-to-skin contact. It is also noteworthy a high prevalence of cesarean sections, despite the service being a reference for pregnancy of usual risk, which should lead to reflection of the health team on the encouragement of normal delivery.

Based on these results, it is possible to highlight the importance of monitoring and encouraging the adoption of good practices in delivery care aimed at improving such indicators, as well as offering better assistance to the binomial, since they reflect on maternal and neonatal outcomes. Therefore, the monthly monitoring of the indicators of good delivery and birth practices is suggested in order to reflect on the quality of care, as well as the search for improvement of the professionals of the institution of the current study, in order to reduce the rates of cesarean delivery.

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Author-specific contributions:

We recommend that authors meet the authorship criteria established by ICMJE:

- 1- Substantial contribution to the study outline or interpretation of the Data (ALMG; BKPS; FMLCS; ACQM; AGM);
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- 3- Participation in the review and approval of the final version (ALMG; BKPS; FMLCS; ACQM; AGM);
- 4- Compliance in being responsible for the accuracy or completeness of any part of the study (ALMG; BKPS; FMLCS; ACQM; AGM).

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