



# Factors associated with care practices for newborns in the delivery room

*Fatores associados às práticas assistenciais ao recém-nascido na sala de parto*

*Factores asociados a las prácticas de asistencia al recién nacido en la sala de parto*

Beatriz Cabral Ledo<sup>1</sup>

Fernanda Garcia Bezerra Góes<sup>1</sup>

Andressa Silva Torres dos Santos<sup>1</sup>

Fernanda Maria Vieira Pereira-Ávila<sup>1</sup>

Aline Cerqueira Santos Santana da Silva<sup>1</sup>

Mayara Pacheco da Conceição Bastos<sup>1</sup>

1. Universidade Federal Fluminense, Instituto de Humanidades e Saúde. Rio das Ostras, RJ, Brasil.

## ABSTRACT

**Objective:** to identify the factors associated with newborn care practices adopted in the delivery room of a maternity hospital in the coastal lowlands of Rio de Janeiro. **Method:** a cross-sectional study was carried out in a public institution in the state of Rio de Janeiro using data collected from birth records between 2015 and 2017. The chi-square test and logistic regression were adopted to associate the variables. **Results:** among 351 (100.0%) medical records, the following constituted practices performed in the delivery room: skin-to-skin contact and early breastfeeding (28.0%); drying (92.3%); oronasopharyngeal aspiration (82.1%); gastric aspiration (52.7%); tracheal aspiration (12.2%); inhaled oxygen (7.7%); and rooming-in referral (91.1%). Early breastfeeding was associated with the type of delivery ( $p=0.043$ ) and changes in physical examination ( $p=0.001$ ). Changes in the physical examination at birth significantly decreased the chances of babies being placed in this position while still in the delivery room ( $p=0.001$ ), as well as newborns delivered by cesarean section ( $p=0.045$ ). Being born by cesarean section increased the chances of newborns being submitted to gastric aspiration twice ( $p=0.002$ ). **Conclusion and implications for practice:** it is urgent to organize the routines of services in order to avoid unnecessary interventions aiming at humanized and quality obstetric and neonatal care.

**Keywords:** Infant; Newborn; Care; Breastfeeding; Humanizing Delivery; Neonatal Nursing.

## RESUMO

**Objetivo:** identificar os fatores associados às práticas assistenciais ao recém-nascido adotadas na sala de parto de uma maternidade na baixada litorânea do Rio de Janeiro. **Método:** estudo transversal, realizado em instituição pública no estado Rio de Janeiro, mediante coleta de dados em prontuários de nascimentos entre 2015 e 2017. Na associação entre variáveis, adotou-se o Teste Qui-Quadrado e a regressão logística. **Resultados:** entre 351 (100.0%) prontuários, constituíram-se como práticas realizadas na sala de parto: contato pele a pele e aleitamento materno precoce (28,0%); secagem (92,3%); aspiração oronasofaríngea (82,1%); aspiração gástrica (52,7%); aspiração traqueal (12,2%); oxigênio inalatório (7,7%); e encaminhamento ao Alojamento Conjunto (91,1%). O contato precoce com o seio materno esteve associado ao tipo de parto ( $p=0,043$ ) e às alterações no exame físico ( $p=0,001$ ). Possuir alterações no exame físico ao nascimento diminuiu significativamente as chances de o bebê ser colocado nessa posição ainda na sala de parto ( $p=0,001$ ) assim como os recém-nascidos de parto cesáreo ( $p=0,045$ ). Nascer de cesárea aumentou duas vezes as chances de o recém-nascido ser submetido à aspiração gástrica ( $p=0,002$ ). **Conclusão e implicações para a prática:** é premente organizar as rotinas dos serviços, de modo a evitar intervenções desnecessárias visando uma atenção obstétrica e neonatal humanizada e de qualidade.

**Palavras-chave:** Recém-Nascido; Cuidado; Aleitamento Materno; Parto Humanizado; Enfermagem Neonatal.

## RESUMEN

**Objetivo:** identificar los factores asociados con las prácticas de atención para recién nacidos adoptados en la sala de partos de un hospital de maternidad en las tierras bajas costeras de Rio de Janeiro. **Método:** estudio transversal, realizado en una institución pública en el estado de Rio de Janeiro, utilizando datos de registros de nacimiento entre 2015 y 2017. Se adoptó la prueba de chi-cuadrado y la regresión logística en la asociación entre variables. **Resultados:** entre 351 (100.0%) registros médicos, se realizaron las siguientes prácticas en la sala de partos: contacto piel con piel y lactancia temprana (28.0%); secado (92,3%); aspiración oronasofaríngea (82,1%); aspiración gástrica (52,7%); aspiración traqueal (12,2%); oxígeno inhalado (7,7%); y derivación a Vivienda Conjunta (91,1%). El contacto con el seno materno temprano se asoció con el tipo de parto ( $p=0.043$ ) y los cambios en el examen físico ( $p=0.001$ ). Tener cambios en el examen físico al nacer redujo significativamente las posibilidades de colocar al bebé en esta posición mientras aún está en la sala de partos ( $p=0.001$ ), así como a los recién nacidos por cesárea ( $p=0.045$ ). Nacer por cesárea aumentó las posibilidades de que el recién nacido sea sometido a aspiración gástrica dos veces ( $p=0.002$ ). **Conclusión e implicaciones para la práctica:** es urgente organizar las rutinas de los servicios para evitar intervenciones innecesarias a través de una atención obstétrica y neonatal humanizada y de calidad.

**Palabras clave:** Recién Nacido; Cuidado; Lactancia Materna; Parto Humanizado; Enfermería Neonatal.

### Corresponding Author:

Fernanda Garcia Bezerra Góes  
E-mail: ferbezerra@gmail.com

Submitted on 03/26/2020.

Accepted on 06/17/2020.

DOI:<https://doi.org/10.1590/2177-9465-EAN-2020-0102>

## INTRODUCTION

Transition from birth to extrauterine life involves a series of physiological changes in newborns, including gas exchange patterns, basic acid balance and cardiovascular activity.<sup>1</sup> In view of this, caring for newborns in the delivery room requires the adoption of care that favors adaptation to extrauterine life with the least possible interference,<sup>2</sup> based on the physiology of labor. To that end, humanized care technologies are used that provide comfort and safety for the development of immediate and future health of children.<sup>3</sup>

Humanization guidelines for childbirth in terms of professional performance are characterized by a set of conducts aimed at promoting healthy humanized birth and birth, respecting women and newborns with non-interventionist practices.<sup>4</sup> Thus, with regard to the first hour of life of newborns right after birth, considered the golden hour, it is necessary to encourage bonding between mother and baby. In this first moment, looking at humanistic care, evidence points to the importance of promoting skin-to-skin contact; breastfeeding in the first hour; timely clamping of the umbilical cord; and participation of companions in the delivery room,<sup>3,5</sup> among other practices.

Early skin-to-skin contact between mother and baby helps to form the bond between the dyad;<sup>6-8</sup> in breastfeeding in the first hour of life; stabilization of the cardiorespiratory system; in the baby's oxygen saturation; and regulation of temperature and crying.<sup>6</sup> Early breastfeeding is essential given the immunological and psychosocial benefits,<sup>9,10</sup> in addition to preventing neonatal morbidity and mortality<sup>10</sup> and early weaning.<sup>6</sup> Timely clamping of the umbilical cord reduces the risk of anemia in early childhood<sup>9</sup> and companions are recognized as best practice promoters during childbirth.<sup>11</sup>

However, few studies have focused on care practices for newborns in delivery rooms, as they are generally linked to women's health, with a superficial approach to baby care.<sup>3,12,13</sup> In addition, there were no local factors associated with the occurrence or not of best practices recommended by the World Health Organization (WHO) by professionals who provide such assistance.<sup>2</sup>

There are variations and divergences regarding delivery care and newborns in the first hour of life worldwide due to geographical and social inequalities and differences in professional conduct and demographic characteristics of customers. Such factors can directly affect the quality of care offered and change the immediate and lifelong neonatal results. In Brazil, the predominant model of care for childbirth and birth is still technocratic, centered on professionals, full of inappropriate and unnecessary interventions, making birth a pathological event.<sup>2</sup>

Therefore, it is justified to carry out local studies that aim to analyze care practices with newborns in different delivery rooms, considering the best scientific evidence available today. Thus, this study aims to identify factors associated with care practices for newborns adopted in the delivery room of a maternity hospital in the coastal lowlands of Rio de Janeiro.

## METHOD

This is a cross-sectional study carried out in a medium-sized public institution, located in the coastal lowlands region of the state of Rio de Janeiro, Brazil. It is worth mentioning that it is the only public maternity hospital in the municipality that provides assistance to the population of the territory covered (approximately 106.000 inhabitants), in addition to the surrounding cities. The unit has 20 beds for rooming-in and four beds in the neonatal intermediate unit, in addition, it does not have a milk bank, kangaroo unit and neonatal intensive care.

Data collection was carried out between April 2018 and July 2019 by consulting the medical records of births occurred in the period 2015 and 2017. A structured form was used, previously prepared by the authors, with all categorical variables, with the exception of the weight, which was continuous.

Dependent variables were related to care practices performed with newborns in the delivery room and included contact with the mother's breast, drying and referral to rooming-in, in addition to invasive interventions such as oronasopharyngeal, gastric and tracheal aspirations and inhaled oxygen. Timely clamping of the umbilical cord and participation of companions were not included due to the absence of this data recorded in the documents. Independent variables were age group and maternal education, prenatal care and number of consultations, type of pregnancy and delivery, presence of high-risk pregnancies and pregnancy complications. Variables related to newborns were sex, race/color, gestational age, cases of fetal distress, resuscitation maneuvers, first-minute-Apgar and fifth-minute-Apgar, gestational weight/age and changes in physical examination.

According to information obtained from the institution, in the period between 2015 and 2017 there were 4.000 births. To select medical records, a sample calculation was performed using 95% confidence interval, 5% sampling error and 50% prevalence estimate, totaling a sample of 351 births.

Medical records with data on newborns whose births occurred in the research setting during the study period were randomly included. Medical records not found or unavailable for access were excluded. Consultation took place in a private environment of the institution, respecting the service routine and operation.

The collected data were entered into a Microsoft Office Excel® spreadsheet through double entry and validation. These were imported into IBM® SPSS, version 21.0. and submitted to descriptive statistical analysis with measures of absolute frequency for all categorical variables and central tendency (mean, median) and dispersion (standard deviation) for weight. For changes in physical examination, newborns were considered to have had at least one change. For analysis of the association between dependent and independent variables, the chi-square test was adopted. Then, the statistically significant associations were submitted to simple binary logistic regression. Dependent variables were dichotomous, thus aiming to estimate the probabilities linked to the occurrence of each of care practices by calculating Odds Ratio (OR) and their respective 95% confidence intervals. The significance level was 5%.

The project to which this study is linked was approved by the Research Ethics Committee (CAAE 82844818.5.0000.5243; Opinion 2.564.375), namely “*Perfil clínico e sociodemográfico de recém-nascidos de uma maternidade pública em Rio das Ostras*”. Data from the medical records were obtained by signing the Data Use Agreement (DUA) by the researchers.

## RESULTS

A total of 351 (100.0%) birth records were analyzed. With the largest share, 227 (67.7%) of mothers were between 20 and 34 years old; 75 (22.4%) were up to 19 years old; and 33 (9.9%) were 35 years old, or older. Regarding the mothers' education, 195 (58.7%) had secondary education, with a higher proportion; 113 (34.0%) had elementary education; 22 (6.6%) had higher education; and 02 (0.6%) were illiterate. Most, 293 (84.2%), lived in the municipality of Rio das Ostras.

As for gestational conditions, 329 (97.9%) were single pregnancies; 211 (80.8%) underwent prenatal care with low risk monitoring; and 155 (57.8%) pregnancies had no complications. Cesarean delivery was prevalent, with 188 (54.0%); 177 (50.9%) were female babies, which prevailed. Regarding race/color, 142 (52.0%) were white. As for gestational age, 302 (86%) were between 37 and 41 weeks, in addition, 324 (92.8%) and 348 (99.4%), respectively, had first-minute-Apgar and fifth-minute-Apgar greater than seven. The majority, 280 (87.2%), were classified as having same weight for gestational age (Table 1). The average birth weight was 3219.9 g (SD=566.3), with a minimum of 1,115 g and a maximum of 5,180 g.

Regarding the alterations in physical examination, 110 (32.7%) newborns presented some type or more. Among these, the most frequent were cyanosis (40; 36.4%), serosanguineous hump (31; 28.2%), respiratory distress (17; 15.5%) and skin lesions (17; 15.5%).

Regarding delivery room care practices, in relation to the recommended actions, most were subjected to drying (289; 92.3%); however, only 67 (28.0%) came in skin-to-skin contact and were taken to the mother's breast shortly after birth. Meanwhile, 296 (91.1%) were referred to their mothers' rooming-in after leaving the delivery room for having good vitality.

Early contact with the mother's breast was associated with the type of delivery ( $p=0.043$ ) and changes in physical examination ( $p=0.001$ ). There was an association between referral to rooming-in and high-risk pregnancies ( $p=0.012$ ), fetal distress ( $p=0.013$ ), changes in physical examination ( $p=0.000$ ) and resuscitation maneuvers ( $p=0.000$ ) (Table 2).

Given the low-risk characteristics of these newborns, considering the gestational, individual and clinical characteristics at birth, the frequencies of application of invasive interventions were high. Oronasopharyngeal aspiration (257; 82.1%), gastric aspiration (165; 52.7%), tracheal aspiration (38; 12.2%), and inhaled oxygen (24; 7.7%) were included. There was no association between recommended and invasive practices with demographic variables.

However, among these practices, oronasopharyngeal aspiration showed a statistical association between the

**Table 1** - Characterization of newborns according to gestational, individual and clinical variables (N=351). Rio das Ostras, RJ, Brazil, 2019.

Variables	n (%)
<b>Sex*</b>	
Female	177 (50.9)
Male	171 (49.1)
<b>Race/color*</b>	
Black	9 (3.3)
Mixed-race	122 (44.7)
White	142 (52.0)
<b>Gestational age at birth*</b>	
Pre-term	22 (6.3)
Term	302 (86.0)
Post-term	1 (0.3)
<b>Diagnosed fetal distress*</b>	
No	229 (94.6)
Yes	13 (5.4)
<b>1' Apgar*</b>	
0 to 3	3 (0.9)
4 to 6	22 (6.3)
7-10	324 (92.8)
<b>5' Apgar*</b>	
0 to 3	1 (0.3)
4 to 6	1 (0.3)
7-10	348 (99.4)
<b>Weight/gestational age*</b>	
LGA	12 (3.7)
SGA	280 (87.2)
SGA	29 (9.0)
<b>Type of pregnancy*</b>	
Single	329 (97.9)
Multiple	7 (2.1)
<b>Type of delivery*</b>	
Vaginal	160 (46.0)
Cesarean	188 (54.0)
<b>Prenatal care*</b>	
No consultation	8 (2.4)
Up to five	100 (31.9)
More than six	213 (68.0)
<b>Pregnancy complications*</b>	
No	155 (57.8)
Yes	113 (42.2)
<b>Changes in physical examination*</b>	
No	226 (67.3)
Yes	110 (32.7)

**Note:** LGA - large for gestational age; SGA - same for gestational age; SGA - small for gestational age; \* Variables presented missing.

variable changes in physical examination ( $p=0.049$ ) and resuscitation maneuvers ( $p=0.009$ ); gastric aspiration to the type of delivery ( $p=0.002$ ); tracheal aspiration to resuscitation maneuvers ( $p=0.031$ ); and inhaled oxygen to changes in physical examination of newborns ( $p=0.000$ ) and resuscitation maneuvers ( $p=0.000$ ) (Table 3).

In binary logistic regression, in relation to recommended practices, the variables type of delivery and changes in physical examination remained associated with contact with the mother's breast. It was observed that having changes in physical examination at birth significantly decreased the

chances of babies being placed in this position while still in the delivery room ( $p=0.001$ ; OR=0.32; CI: 0.167-0.632) in relation to those without changes, as well as newborns by cesarean delivery ( $p=0.045$ ; OR=0.55; CI: 0.313-0.986) compared to those born vaginally. With regard to invasive practices, only the type of delivery remained associated with gastric aspiration. Therefore, it was indicated that being born by cesarean delivery increased the chances of newborns being subjected to this invasive intervention by two ( $p=0.002$ ; OR=2.04; CI: 1.299-3.228) in relation to those born by vaginal delivery (Table 4).

**Table 2** - Association between recommended care practices and clinical and demographic variables (N=351). Rio das Ostras, RJ, Brazil, 2019.

Variables	Contact with the mother's breast		<i>P</i> **	Drying		<i>P</i> **	Rooming-in		<i>P</i> **
	No	Yes		No	Yes		No	Yes	
	n (%)	n (%)		n (%)	n (%)		n (%)	n (%)	
<b>Sex*</b>			0.157			0.436			0.371
Female	77 (45)	37 (55.2)		10 (43.5)	149 (51.9)		12 (7.3)	152 (92.7)	
Male	94 (55)	30 (44.8)		13 (56.5)	138 (48.1)		16 (10.1)	142 (89.9)	
<b>Prenatal care*</b>			0.68			0.65			0.362
No	8 (4.9)	0 (0)		2 (8.7)	6 (2.2)		0 (0)	8 (100)	
Yes	154 (95.1)	65 (100)		21 (91.3)	267 (97.8)		28 (9.4)	269 (90.6)	
<b>High-risk pregnancy*</b>			0.107			0.117			<b>0.012</b>
No	102 (73.4)	37 (26.6)		12 (6.4)	176 (93.6)		12 (6.1)	185 (93.9)	
Yes	27 (87.1)	4 (12.9)		6 (13.3)	39 (86.7)		8 (17.4)	38 (82.6)	
<b>Pregnancy complications*</b>			0.700			0.471			0.093
No	73 (53.3)	23 (50)		8 (50)	132 (59.2)		12 (8.1)	136 (91.9)	
Yes	64 (46.7)	23 (50)		8 (50)	91 (40.8)		15 (14.9)	86 (85.1)	
<b>Type of delivery*</b>			<b>0.043</b>			0.892			0.073
Vaginal	68 (40)	36 (54.5)		11 (45.8)	127 (44.4)		9 (6)	142 (94)	
Cesarean	102 (60)	30 (45.5)		13 (54.2)	159 (55.6)		20 (11.7)	151 (88.3)	

\* Variable presented missing. \*\* Statistical chi-square test.

Table 2 - Continued...

Variables	Contact with the mother's breast		<i>P</i> **	Drying		<i>P</i> **	Rooming-in		<i>P</i> **
	No	Yes		No	Yes		No	Yes	
	n (%)	n (%)		n (%)	n (%)		n (%)	n (%)	
<b>Fetal distress*</b>			0.542			0.964			<b>0.013</b>
No	113 (94.2)	31 (96.9)		15 (93.8)	189 (94)		13 (6)	202 (94)	
Yes	7 (5.8)	1 (3.1)		1 (6.3)	12 (6)		3 (25)	9 (75)	
<b>Changes in physical examination*</b>			<b>0.001</b>			0.322			<b>0.000</b>
No	90 (54.2)	51 (78.5)		17 (77.3)	189 (67)		6 (2.8)	208 (97.2)	
Yes	76 (45.8)	14 (21.5)		5 (22.7)	93 (33)		23 (22.8)	78 (77.2)	
<b>Resuscitation maneuvers*</b>			0.855			0.119			<b>0.000</b>
No	139 (87.4)	53 (88.3)		19 (100)	232 (88.5)		15 (5.8)	244 (94.2)	
Yes	20 (12.6)	7 (11.7)		0 (0)	30 (11.5)		13 (41.9)	18 (58.1)	

\* Variable presented missing. \*\* Statistical chi-square test.

Table 3 - Association between invasive interventions and clinical and demographic variables (N=351). Rio das Ostras, RJ, Brazil, 2019.

Variables	Oronasopharyngeal aspiration		<i>P</i> **	Gastric aspiration		<i>P</i> **	Tracheal aspiration		<i>P</i> **	Inhaled oxygen		<i>P</i> **
	No	Yes		No	Yes		No	Yes		No	Yes	
	n (%)	n (%)		n (%)	n (%)		n (%)	n (%)		n (%)	n (%)	
<b>Sex *</b>			0.814			0.377			0.877			0.109
Female	29 (18.2)	130 (81.8)		71 (44.7)	88 (55.3)		139 (87.4)	20 (12.6)		143 (94.7)	8 (5.3)	
Male	26 (17.2)	125 (82.8)		75 (49.7)	76 (50.3)		132 (88)	18 (12)		141 (89.8)	16 (10.2)	
<b>Prenatal care*</b>			0.616			0.427			0.244			0.650
No	2 (25)	6 (75)		5 (62.5)	3 (37.5)		6 (75)	2 (25)		7 (87.5)	1 (12.5)	
Yes	52 (18.1)	236 (81.9)		139 (48.3)	149 (51.7)		254 (88.5)	33 (11.5)		263 (92)	23 (8)	
<b>High-risk pregnancy*</b>			0.415			0.510			0.621			0.282
No	32 (17)	156 (83)		90 (47.9)	98 (52.1)		161 (86.1)	26 (13.9)		190 (96)	8 (4)	
Yes	10 (22.2)	35 (77.8)		24 (53.3)	21 (46.7)		40 (88.9)	5 (11.1)		34 (91.9)	3 (8.1)	

\* Variable presented missing; \*\* Statistical chi-square test.

Table 3 - Continued...

Variables	Oronasopharyngeal aspiration			Gastric aspiration			Tracheal aspiration			Inhaled oxygen		
	No	Yes	P**	No	Yes	P**	No	Yes	P**	No	Yes	P**
	n (%)	n (%)		n (%)	n (%)		n (%)	n (%)		n (%)		
<b>Pregnancy complications *</b>			0.630			0.499			0.684			0.681
No	23 (16.4)	117 (83.6)		67 (47.9)	73 (52.1)		122 (87.1)	18 (12.9)		136 (92.5)	11 (7.5)	
Yes	14 (14.1)	85 (85.9)		43 (43.4)	56 (56.6)		88 (88.9)	11 (11.1)		92 (93.9)	6 (6.1)	
<b>Type of delivery *</b>			0.293			0.002			0.867			0.227
Vaginal	28 (20.3)	110 (79.7)		79 (57.2)	59 (42.8)		122 (87.1)	17 (12.3)		131 (94.2)	8 (5.8)	
Cesarean	27 (15.7)	145 (84.3)		68 (39.5)	104 (60.5)		88 (88.9)	20 (11.7)		153 (90.5)	16 (9.5)	
<b>Fetal distress *</b>			0.319			0.440			0.619			0.473
No	38 (18.6)	166 (81.4)		101 (49.5)	103 (50.5)		121 (87.7)	25 (12.3)		209 (95.9)	9 (4.1)	
Yes	1 (7.7)	12 (92.3)		5 (38.5)	8 (61.5)		12 (92.3)	1 (7.7)		12 (100)	0 (0)	
<b>Changes in physical examiantion *</b>			0.049			0.584			0.461			0.000
No	42 (20.4)	164 (79.6)		94 (45.6)	112 (54.4)		178 (86.8)	27 (13.2)		192 (96.5)	7 (3.5)	
Yes	11 (11.2)	87 (88.8)		48 (49)	50 (51)		88 (89.8)	10 (10.2)		84 (83.2)	17 (16.8)	
<b>Resuscitation maneuvers*</b>			0.009			0.265			0.031			0.000
No	47 (18.7)	204 (81.3)		119 (47.4)	132 (52.6)		216 (86.4)	34 (13.6)		278 (100)	0 (0)	
Yes	0 (0)	30 (100)		11 (36.7)	19 (63.3)		30 (100)	0 (0)		9 (27.3)	24 (72.7)	

\* Variable presented missing; \*\* Statistical chi-square test.

Among care practices, rooming-in with contact with the mother's breast (p=0.032) and tracheal aspiration (p=0.015); and rooming-in with inhaled oxygen (p=0.000) and oronasopharyngeal aspiration (p=0.015) showed association. The chance of going to rooming-in with their mothers right after leaving the delivery room was approximately 4.5 times higher among newborns who had contact with the mother's breast (p=0.048; OR=4.46; CI: 1.016-19.658) compared to those who did not have that contact. On the other hand, tracheal aspiration decreased the chances of this contact (p=0.039; OR=0.11; CI: 0.15-0.901), when compared to those who did not undergo this invasive intervention (Table 4).

## DISCUSSION

This study made it possible to identify factors associated with care practices for newborns in the delivery room. There was a predominance of young adult mothers; however, approximately one third of the women belonged to the age groups considered to be at gestational risk, either because they were teenagers or because they were 35 years old or more. Regarding education, a significant portion had not completed the regular cycle of compulsory education. These maternal sociodemographic variables are identified as factors correlated to caring for full-term newborns in the delivery room. Age extremes of reproductive life, such as

**Table 4** - Odds Ratio for simple binary logistic regression for care practices in the delivery room (N=351). Rio das Ostras, RJ, Brazil, 2019.

Contact with the mother's breast		
Variables	OR (95%CI)	P value
Changes in physical examination	0.32 (0.167-0.632)	0.001
Cesarean delivery	0.55 (0.313-0.986)	0.045
Tracheal aspiration	0.11 (0.15-0.901)	0.039
Gastric aspiration		
Variable	OR (95%CI)	P value
Cesarean delivery	2.04 (1.299-3.228)	0.002
Rooming-in		
Variable	OR (95%CI)	P value
Contact with the mother's breast	4.46 (1.016-19.658)	0.048

adolescence, decrease the chances of early skin-to-skin contact and breastfeeding in the first hour of life;<sup>2</sup> however, despite the low percentage of these practices in the investigated scenario, there were no associations between these variables in this study.

Regarding pregnancy conditions, the vast majority of mothers experienced single pregnancies, with low risk prenatal care and more than half did not experience any type of complication during pregnancy. Among those who underwent prenatal care, around two-thirds attended six or more consultations. Single pregnancy<sup>14</sup> and prenatal care, with an adequate number of consultations,<sup>15,16</sup> are relevant factors for breastfeeding in the first hour of life; however, there was also no statistical significance between the current results.

As for the type of delivery, cesarean section was more recurrent among births, well above the 15% recommended by WHO, as in other Brazilian studies.<sup>17-19</sup> High cesarean rates, such as the one found, are related, among other aspects, to the technological and human resources available, and, especially, to the clinical protocols adopted in the health units. But they also include women's desire for this mode of delivery in early pregnancy, previous cesarean delivery as well as previous guidance.<sup>18-20</sup>

Type of delivery interferes with the practices adopted in hospital care for healthy newborns.<sup>2</sup> Likewise, early contact with the mother's breast was associated with the type of delivery, as shown by other studies.<sup>2,7,21</sup> It is reinforced that vaginal delivery has a protective effect against delayed initiation of breastfeeding, when compared to cesarean section, which is consequently related to early weaning and the shortest duration of exclusive breastfeeding.<sup>22</sup>

Therefore, cesarean delivery was a risk factor for not making this contact, as well as the existence of changes in physical examination, as both can reduce the chances of this practice.<sup>2,7,21</sup> Furthermore, the findings did not show any association between the type of delivery and the use of inhaled oxygen, as shown in another study,<sup>2</sup> but with gastric aspiration. It was found that cesarean delivery is a factor strongly associated with this invasive intervention.

Among newborns, white women predominated, which reflects the percentage distribution by sex, of the last Brazilian Demographic Census in 2010, which showed a predominance of 51.0% of females. A small portion was registered as black, revealing an atypical characteristic in this public maternity hospital located in southeastern Brazil. The state of Rio de Janeiro stands out in relation to the others for having 12.4% of black people, with approximately two million people.<sup>23</sup>

In the declaration of live births the hetero classification is used, i.e., another person, usually a relative, defines the baby's color/race.<sup>24</sup> This is one of the criteria used in research to measure social differences, treatments and health outcomes, including obstetric and neonatal.<sup>25</sup> A population-based Brazilian study concluded that compared to white women, black or mixed-race mothers had a higher risk of having inadequate prenatal care and the absence of a companion. This reinforces racial inequities, including care practices in the delivery room,<sup>26</sup> which highlights the importance of adequately filling out this information.

Most were full-term newborns, without low birth weight and with the same weight for gestational age. A significant portion showed no difficulty in adapting to extrauterine life, according to first-minute-Apgar and fifth-minute-Apgar, with rare cases of fetal distress. Therefore, the profile found was of healthy newborns who should be assisted by their mothers without the need for invasive interventions such as those identified (oronasopharyngeal, gastric and tracheal aspiration and inhaled oxygen). According to the Brazilian Society of Pediatrics guidelines, based on the best available evidence, newborns who have good vitality must remain with their mother after clamping the umbilical cord and still in the delivery room. As long as they are with their mother, all they need to do is provide warmth, keep the airways clear and continuously assess their vitality.<sup>5</sup>

Among the practices in the delivery room, proven to be beneficial to newborns, there was a low percentage of skin-to-skin contact and with the early maternal breast, which was partially compatible with a national hospital-based study. Skin-to-skin contact immediately after birth was 28.2%, but the maternal breast supply in the delivery room was only 16.1%, revealing a lower rate than the current study.<sup>2</sup> A survey conducted in the Northeast showed even lower values, pointing out that only 9.3% of mothers remained in contact with their baby for more than 30 minutes or until the first breastfeeding.<sup>21</sup> Another investigation carried out in São Paulo, in an institution called *Amiga da Criança*, showed 35.0% of newborns placed in immediate skin-to-skin contact; however,

only 9.3% were breastfed early,<sup>27</sup> which reinforces that the variations between Brazilian regions and states persist.

Drying, recommended for maintenance of normothermia,<sup>5</sup> showed a better rate when compared to an investigation carried out in India that obtained 82.0%.<sup>28</sup> Rooming-in directly from the delivery room was also superior to that found in the Brazilian study both in Brazil as a whole, which was 69.0%, being higher than all Brazilian regions separately, as in the Southeast, which was 61.4%.<sup>2</sup>

Even in the presence of healthy newborns, the rates of invasive interventions, identified in the delivery room, are high. This happens, especially, with the oronasopharyngeal and gastric aspirations, which presented higher frequencies, with values above the national average, of 71.0% and 39.5%<sup>2</sup> as well as of another investigation conducted in the obstetric center of a public university hospital in southern Brazil, whose rates were 54.9% and 18.9%.<sup>29</sup>

Research corroborates that practices without scientific proof of effective benefits to newborns are still common,<sup>2,28,29</sup> indicating that new guidelines for care for healthy newborns have not yet been fully incorporated into clinical practice.<sup>2</sup> However, a study that analyzed care before and after an intervention with health professionals who assist in childbirth and birth showed rates of aspiration of the upper airways after delivery of 75.0%. But, after the intervention, this proportion decreased considerably to 34.0%,<sup>28</sup> reinforcing the importance of strategies with professionals to reverse this scenario.

The only variable that remained associated with gastric aspiration was type of delivery. Being born by cesarean section significantly increased the chances of newborns being subjected to this type of aspiration, two practices that need to be reduced. Integrative review of studies with healthy full-term babies indicated that there were no significant differences in health outcomes between babies undergoing oropharyngeal aspiration and those not aspirated. This was also observed among babies who used oxygen and those kept in room air, therefore, the abandonment of these practices is also supported. Gastric aspiration is harmful and does not benefit healthy newborns, so it should not be used. In most cases, the fewer interventions, the better for the baby, i.e., the recommendations support a smooth and physiological birth with care centered on newborns and families.<sup>30</sup>

It is noteworthy that early skin-to-skin contact and breastfeeding in the delivery room were associated with a greater likelihood of babies going to rooming-in. These data corroborate a study carried out in Minas Gerais. Such a study demonstrated a positive association between good practices at birth, skin-to-skin contact and early breastfeeding, and immediate referral to rooming-in.<sup>2</sup>

Being born by normal delivery, having good vitality, undergoing less invasive interventions, especially gastric aspiration, contributes to skin-to-skin contact and breastfeeding in the delivery room. This increases the chances of an immediate trip to rooming-in,

reinforcing the importance of humanized and less interventionist care practices that guarantee respect for the physiology of birth. Therefore, it is necessary to advance the applicability of practices that are notably beneficial in the obstetric and neonatal field, aiming to reduce unnecessary interventions, thus guaranteeing a positive experience for the mother and the baby.<sup>31</sup>

## CONCLUSION AND IMPLICATIONS FOR PRACTICE

Concluding, the type of delivery and changes in physical examination were the main factors associated with care practices for newborns in the delivery room. Cesarean delivery reduces the chances of contact with the mother's breast and increases the chances of gastric aspiration. Changes in physical examination reduce the chances of contact with the mother's breast. The findings reaffirm the model of care for childbirth and birth in Brazil, in which cesarean delivery and invasive interventions prevail, without due basis in the best available scientific evidence.

This study has limitations regarding its information given the only defined geographical context. It is necessary to carry out more local studies that present different realities, in addition to research aimed at identifying the reasons for occurrence of practices that have proven beneficial to newborns. Furthermore, the cross-sectional nature of this study makes it impossible to establish a causal relationship for care practices.

The results presented the factors related to recommended and not recommended care practices performed in the delivery room focused entirely on newborns, this being the main differential of the research. Identifying these factors enables organization of service routines in order to avoid unnecessary interventions aiming at humanized and quality obstetric and neonatal care, with evidence-based care practices, according to criteria established by the Ministry of Health and WHO.

## FINANCIAL SUPPORT

This study was funded through Scientific Initiation Scholarship by the Research Support Foundation of the State of Rio de Janeiro (*Fundação de Amparo à Pesquisa do Estado do Rio de Janeiro – FAPERJ*), granted to Mayara Pacheco da Conceição Bastos, under Process E-26/200.562/2019.

## AUTHORS' CONTRIBUTIONS

Design, acquisition, data analysis and interpretation of results, writing and critical review, approval of the final version and responsibility for all aspects of the content and integrity of the published article: Beatriz Cabral Ledo, Andressa Silva Torres dos Santos, and Mayara Pacheco da Conceição Bastos.

Design, interpretation of results and critical review, approval of the final version and responsibility for all aspects of the content and integrity of the published article: Fernanda Garcia Bezerra

Góes, Fernanda Maria Vieira Pereira-Ávila, and Aline Cerqueira Santos Santana da Silva.

## ASSOCIATE EDITOR

Aline Cristinane Cavicchioli Okido

## REFERENCES

- Chaves RL. O nascimento como experiência radical de mudança. *Cad Saude Publica*. 2014;30(Supl 1):S14-6. <http://dx.doi.org/10.1590/0102-311XPE03S114>. PMID:25167173.
- Moreira MEL, Gama SGN, Pereira APE, Silva AAM, Lansky S, Pinheiro RS et al. Práticas de atenção hospitalar ao recém-nascido saudável no Brasil. *Cad Saude Publica*. 2014;30(Supl 1):S128-39. <http://dx.doi.org/10.1590/0102-311X00145213>. PMID:25167172.
- Ramos WMA, Aguiar BGC, Conrad D, Pinto CB, Mussumeci PA. Contribuição da enfermeira obstétrica nas boas práticas da assistência ao parto e nascimento. *Rev. Pesqui. (Univ. Fed. Estado Rio J., Online) [Internet]*. 2018 jan/mar; [citado 2020 jan 25];10(1):173-9. Disponível em: <https://pesquisa.bvsalud.org/portal/resource/pt/bde-32254>
- Andrade LO, Felix ESP, Souza FS, Gomes LOS, Boery RNSO. Práticas dos profissionais de enfermagem diante do parto humanizado. *Rev Enferm UFPE Online [Internet]*. 2017; [citado 2020 jan 25];11(Supl 6):2576-85. Disponível em: <https://pesquisa.bvsalud.org/portal/resource/pt/biblio-1032487>
- Sociedade Brasileira de Pediatria. Reanimação do recém-nascido ≥34 semanas em sala de parto: Diretrizes 2016 da Sociedade Brasileira de Pediatria [Internet]. 2016 [citado 2020 jan 25]. Disponível em: <https://www.sbp.com.br/especiais/reanimacao-neonatal/>
- Moore ER, Bergman N, Anderson GC, Medley N. Early skin-to-skin contact for mothers and their healthy newborn infants. *Cochrane Database Syst Rev*. 2016;11(CD003519):CD003519. <http://dx.doi.org/10.1002/14651858.CD003519.pub4>. PMID:27885658.
- Kologeski TK, Strapasson MR, Schneider V, Renosto JM. Contato pele a pele do recém-nascido com sua mãe na perspectiva da equipe multiprofissional. *Rev Enferm UFPE Online*. 2017;11(1):94-101. <http://dx.doi.org/10.5205/reuol.9978-88449-6-1101201712>.
- Cetinkaya E, Ertem G. The effects of skin-to-skin contact on maternal-preterm infants: a systematic review. *J Educ Res Nurs*. 2017;14(2):167-75. <http://dx.doi.org/10.5222/HEAD.2017.167>.
- Rocha LB, Araujo FMS, Rocha NCO, Almeida CD, Santos MO, Rocha CHR. Aleitamento materno na primeira hora de vida: uma revisão da literatura. *Rev Med Saúde Brasília [Internet]*. 2017; [citado 2020 jan 25];6(3):384-94. Disponível em: <https://portalrevistas.ucb.br/index.php/rmsbr/article/view/8318/5490>
- Khan J, Vesel L, Bahl R, Martines JC. Timing of breastfeeding initiation and exclusivity of breastfeeding during the first month of life: effects on neonatal mortality and morbidity - a systematic review and meta-analysis. *Matern Child Health J*. 2015;19(3):468-79. <http://dx.doi.org/10.1007/s10995-014-1526-8>. PMID:24894730.
- Monguilhott JJDC, Brüggemann OM, Freitas PF, d'Orsi E. Nascer no Brasil: a presença do acompanhante favorece a aplicação das boas práticas na atenção ao parto na região Sul. *Rev Saude Publica*. 2018;52:1. <http://dx.doi.org/10.11606/S1518-8787.2018052006258>. PMID:29364356.
- Santos LM, Silva JCR, Carvalho ESS, Carneiro AJS, Santana RCB, Fonseca MCC. Vivenciando o contato pele a pele com o recém-nascido no pós-parto como um ato mecânico. *Rev Bras Enferm*. 2014;67(2):202-7. <http://dx.doi.org/10.5935/0034-7167.20140026>.
- Pereira SB, Diaz CMG, Backes MTS, Ferreira CLL, Backes DS. Boas práticas de atenção ao parto e ao nascimento na perspectiva de profissionais de saúde. *Rev Bras Enferm*. 2018;71(Supl 3):1313-9. <http://dx.doi.org/10.1590/0034-7167-2016-0661>. PMID:29972529.
- Kim B-Y. Factors that influence early breastfeeding of singletons and twins in Korea: a retrospective study. *Int Breastfeed J*. 2017;12(4):1-10. <http://dx.doi.org/10.11606/S1518-8787.2018052006258>. PMID:28074106.
- Ndirangu MN, Gatimu SM, Mwinyi HM, Kibiwott DC. Trends and factors associated with early initiation of breastfeeding in Namibia: analysis of the demographic and health surveys 2000-2013. *BMC Pregnancy Childbirth*. 2018;18(1):171. <http://dx.doi.org/10.1186/s12884-018-1811-4>. PMID:29769063.
- Berde AS, Yalcin SS. Determinants of early initiation of breastfeeding in Nigeria: a population-based study using the 2013 demographic and health survey data. *BMC Pregnancy Childbirth*. 2016;16(1):32. <http://dx.doi.org/10.1186/s12884-016-0818-y>. PMID:26852324.
- Santos JB, Souza EM, Rocha CS, Trindade FS, Oliveira KA. Aspectos epidemiológicos do parto cesáreo em Sergipe. *Rev Saude ReAGES [Internet]*. 2019; [citado 2020 jan 25];1(4):47-51. Disponível em: <http://npu.faculdadeages.com.br/index.php/revistadesaude/article/view/168>
- Vale LD, Lucena EEES, Holanda CSM, Cavalcante RD, Santos MM. Preferência e fatores associados ao tipo de parto entre puérperas de uma maternidade pública. *Rev Gaúcha Enferm*. 2015 jul/set;36(3):86-92. <http://dx.doi.org/10.1590/1983-1447.2015.03.50032>. PMID:26486904.
- Oliveira RR, Melo EC, Novaes ES, Ferracioli PLRV, Mathias TAF. Factors associated to cesarean delivery in public and private health care systems. *Rev Esc Enferm USP*. 2016;50(5):733-40. <http://dx.doi.org/10.1590/s0080-62342016000600004>. PMID:27982390.
- Silva ACL, Félix HCR, Ferreira MBG, Wysocki AD, Contim D, Ruiz MT. Preferência pelo tipo de parto, fatores associados à expectativa e satisfação com o parto. *Rev Eletr Enf*. 2017;19:a34. <http://dx.doi.org/10.5216/ree.v19.44139>.
- Sampaio ARR, Bousquat A, Barros C. Contato pele a pele ao nascer: um desafio para a promoção do aleitamento materno em maternidade pública no nordeste brasileiro com o título de Hospital Amigo da Criança. *Epidemiol Serv Saude*. 2016;25(2):281-90. <https://doi.org/10.5123/s1679-49742016000200007>. PMID:27869946.
- Arruda GT, Barreto SC, Morin VL, Petteer GN, Braz MM, Pivetta HMF. Existe relação da via de parto com amamentação na primeira hora de vida? *Rev Bras Promoç Saúde*. 2018;31(2):1-7. <http://dx.doi.org/10.5020/18061230.2018.7321>.
- Instituto Brasileiro de Geografia e Estatística. Censo demográfico 2010: características da população e dos domicílios. Resultados do universo [Internet]. 2011 [citado 2020 jan 25]. Disponível em: <https://censo2010.ibge.gov.br/resultados.html>
- Ministério da Saúde (BR). Guia de implementação do quesito Raça/Cor/Etnia [Internet]. Brasília: Ministério da Saúde; 2018 [citado 2020 jan 25]. Disponível em: [http://bvsms.saude.gov.br/bvs/publicacoes/guia\\_implementacao\\_raca\\_cor\\_etnia.pdf](http://bvsms.saude.gov.br/bvs/publicacoes/guia_implementacao_raca_cor_etnia.pdf)
- Pacheco VC, Silva JC, Mariussi AP, Lima MR, Silva TR. As influências da raça/cor nos desfechos obstétricos e neonatais desfavoráveis. *Saúde Debate*. 2018;42(116):125-37. <http://dx.doi.org/10.1590/0103-1104201811610>.
- Leal MC, Gama SGN, Pereira APE, Pacheco VE, Carmo CN, Santos RV. A cor da dor: iniquidades raciais na atenção pré-natal e ao parto no Brasil. *Cad Saude Publica*. 2017;33(33, Supl 1):e00078816. <http://dx.doi.org/10.1590/0102-311x00078816>. PMID:28746555.
- Calegari FL, Barbieratto BJ, Fujinaga CI, Fonseca LMM, Oliveira CR, Leite AM. Prontidão do recém-nascido a termo durante a primeira mamada em alojamento conjunto. *Rev Rene*. 2016 out 4;17(4):444-50. <http://dx.doi.org/10.15253/2175-6783.2016000400002>.
- Iyengar K, Jain M, Thomas S, Dashora K, Liu W, Saini P et al. Adherence to evidence based care practices for child birth before and after a quality improvement intervention in health facilities of Rajasthan, India. *BMC Pregnancy Childbirth*. 2014;14(1):270. <http://dx.doi.org/10.1186/1471-2393-14-270>. PMID:25117856.

29. Abdala LG, Cunha MLC. Contato pele a pele entre mãe e recém-nascido e amamentação na primeira hora de vida. *Clin Biomed Res*. 2018;38(4):356-60. <http://dx.doi.org/10.4322/2357-9730.82178>.
30. Mercer JS, Erickson-Owens DA, Graves B, Haley MM. Práticas baseadas em evidências para a transição do feto a recém-nascido. *Rev Tempus Actas Saúde Col*. [Internet]. 2010; [citado 2020 jan 25];4(4):173-89. Disponível em: <http://redehumanizadas.usp.br/acervo/praticas-baseadas-em-evidencias-para-a-transicao-do-feto-a-recem-nascido/>
31. Sandall J, Soltani H, Gates S, Shennan A, Devane D. Midwife-led continuity models versus other models of care for childbearing women. *Cochrane Database Syst Rev*. 2016;4(CD004667):CD004667. <http://dx.doi.org/10.1002/14651858.CD004667.pub5>. PMID:27121907.