Original Article

Clinical and demographic characteristics of mothers and newborns seen at the David Capistrano Filho birthing center/RJ

Características clínicas e demográficas de mães e recém-nascidos atendidos na casa de parto David Capistrano Filho/RJ

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ABSTRACT | OBJECTIVE: To describe the clinical and demographic characteristics of mothers and newborns treated at a birthing center. **METHOD:** Cross-sectional epidemiological research with retrospective collection in a database of medical records of a birthing center in a city of Rio de Janeiro with 949 neonates for the period 2014 and 2018. **RESULTS:** Most of the women declared themselves to be black (64,9%), the prevalent age group was 20 to 34 years old (81,3%) and prenatal care started in the second gestational trimester (53,5%). As for the newborn's characteristics, 50,8% were female and weighed 3.000g or more (73,3%). The Apgar score in the first (98,7%) and in the fifth minute (99,6%) were greater than 7. Breastfeeding (98,3%) and skin-to-skin contact (99,3%) were performed in most births, as well as late and timely clamping (98,6%), administration of vitamin K (97,8%) and Hepatitis B vaccine (97,4%). Most newborns did not need upper airway aspiration (97,4%) and resuscitation maneuvers (97,5%). **CONCLUSION:** The data point to a profile of young adult mothers and newborns, most of whom are healthy, for whom care was provided based on good practices recommended by the national guidelines for normal childbirth care in Brazil.

DESCRIPTORS: Natural childbirth. Humanizing delivery. Newborn Infant. Obstetric Nursing.

RESUMO | OBJETIVO: Descrever as características clínicas e demográficas de mães e recém-nascidos atendidos em casa de parto. **MÉTODO:** Pesquisa epidemiológica transversal com coleta retrospectiva em banco de dados de prontuários de uma casa de parto de um município de Rio de Janeiro de 949 neonatos referente ao período de 2014 e 2018. **RESULTADOS:** A grande parte das mulheres se autodeclarou negra (64,9%). A faixa etária prevalente foi de 20 a 34 anos (81,3%) e o pré-natal foi iniciado no segundo trimestre gestacional (53,5%). Quanto às características dos recém-nascidos, 50,8% eram do sexo feminino e 73,3% pesaram 3.000g ou mais. O índice de Apgar no primeiro (98,7%) e no quinto minuto (99,6%) foram maiores que 7. O aleitamento materno (98,3%) e o contato pele a pele (99,3%) foram realizados na maioria dos nascimentos, assim como o clampeamento tardio e oportuno (98,6%). A administração da vitamina K ocorreu em 97,8% e vacina de Hepatite B em 97,4% dos recém-nascidos e a maioria não necessitou de aspiração de vias aéreas superiores (97,4%) e manobras de reanimação (97,5%). **CONCLUSÃO:** Os dados apontam um perfil de mães adultas jovens e de recém-nascidos, em sua maioria saudáveis, para os quais foram prestados cuidados baseados nas boas práticas recomendadas pelas diretrizes nacionais de assistência ao parto normal do Brasil.

DESCRITORES: Parto normal. Parto humanizado. Recém-nascido. Enfermagem obstétrica.

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Introduction

According to Ordinance No. 371 of May 7, 2014, newborn (NB) health care consists of care provided by trained professionals, doctors (preferably pediatricians or neonatologists), or nursing professionals (preferably obstetric or neonatal nurses), from the period immediately prior to delivery until the newborn is sent for joint dwelling with the mother or to the Neonatal Unit. Otherwise, in the case of birth at the prepartum, labor, and puerperium (PLP) room, they are kept with the mother under the supervision of the professional team responsible for the PLP.[1]

NB health care is essential for the reduction of infant mortality, which remains high in Brazil. The actions of promotion, prevention, and health care directed to pregnant women and newborns have great relevance because they influence individuals' health status, from the neonatal period to adult life. The determining relationship of intrauterine life and health conditions at birth and in the neonatal period with chronic-degenerative problems in adult life, such as obesity, diabetes, cardiovascular diseases, and mental health, among others, is increasingly clear.[2]

Most infant deaths occur in the first days of a child's life, and from preventable causes, such as infection, birth asphyxia, and complications from prematurity. Neonatal asphyxia is one of the main causes of hospital morbidity in newborns and of serious sequelae for individuals. It is essential that the care provided during labor monitoring is based on scientific evidence, thus ensuring this moment's safety, as the still high unsatisfactory complication rates relate directly to the abusive use of techniques and procedures.[2,3]

Regarding birth in normal birthing centers (NBC), they can be understood as a unit whose purpose is to provide assistance to normal births of usual risk. Their implementation in Brazil occurred more markedly in the eighties and the women's movement was responsible for encouraging this by raising questions about routine obstetric practices and rethinking ways to humanize labor and birth care. They offer humanized care and consider that birth is a physiological process that occurs without complications for most women and babies.[4]

The implementation of care for low-risk births by obstetric nurses is associated with changes in institutional practices and routines, since it is based on the humanization of care based on the woman's central role and birth physiology, breaking with unnecessary practices, and using evidence-based care to guarantee greater safety, integrality, empathy, respect, and dignity. However, the entry of obstetric nursing in this care space has unfortunately caused clashes between professional categories internally, which hinders the implementation of the humanization policy.[5]

Brazil's obstetric care model is still largely focused on the technocracy of parturition, favoring the maintenance of care practices that go against women's human rights, since daily care in the delivery and birth environment remains marked by care focused on unnecessary interventions. The great challenge for implementing a model based on humanized practices is the coordination between the Ministries of Health and Education, so that health programs curriculums incorporate content surpassing the fundamentals of "Evidence-Based Medicine", a human perspective that is essential to good professional practice.[5]

According to Dias and Domingues[6], who defend the strengthening of the multi-professional care model, the biggest challenge faced by professionals providing childbirth care is to minimize suffering and contribute to labor being an experience of growth and fulfillment for women and their families. In addition, they should ensure safety and support in this important moment, and that will certainly always be remembered by the parturient woman and her family.

Recommendations for immediate newborn care after birth include late clamping of the umbilical cord to improve maternal and child nutrition and health outcomes. In uncomplicated newborns skin-to-skin contact with their mothers is recommended during the first hour after birth to prevent hypothermia and promote breastfeeding. Low birth weight babies who can be breastfed, in turn, should be breastfed as soon as possible after birth, when they are clinically stable, and mother and baby are ready.[7]

Given the relevance of describing the clinical and demographic findings and the care provided by

obstetric nurses in a birthing center, it is important to discuss this topic to provide assistance to normal births based on scientific evidence and WHO's good practices, always emphasizing respect for physiology, humanization, women's central role, and fewer unnecessary interventions.

Due to these issues, the present study has the following research question: "what clinical and demographic characteristics of mothers and newborns are found in the care provided at birthing centers?" To answer this question, this study's aim was to describe the clinical and demographic characteristics of mothers and newborns assisted in a birthing center.

Methodology

This is a cross-sectional epidemiological study with retrospective data collection from a medical records database of a birthing center located in Rio de Janeiro municipality. This study is part of a larger project called "Perinatal outcomes, good practices, and interventions of the birth model adopted in David Capistrano Filho birthing center – Rio de Janeiro". Data were collected using a data collection instrument and stored in a birthing center data bank containing information on all deliveries that occurred in the period from 2014 to 2018.

Inclusion criteria were: full-term pregnancy, without clinical complications and previous cesarean sections, and classified as normal risk by the birthing center care protocol. Exclusion criteria were: hospitalized during the discharge period, who did not received medical attention in the unit and, therefore, were transferred in the postpartum period, and observations with missing data for the analyzed variables.

Of the total number of births from 2014 to 2018 (968), 19 not meeting the inclusion criteria were excluded, resulting in a final sample of 949 records of neonates born at David Capistrano Filho birthing center. Data collection included sociodemographic variables such as age, education, marital status, race/skin color, and number of prenatal visits; NB variables, such as anthropometric measurements, Apgar, need for resuscitation; and care provided such as skin-to-skin contact with the mother, timely clamping, breastfeeding, administration of vitamin K, hepatitis B, performance of Crede's method, and airway aspiration.

A descriptive analysis of the data (absolute and relative frequency) was performed. Data were processed and tabulated using Microsoft® Office Excel® 2010 software.

According to resolution 466/12 of the Conselho Nacional de Saúde – CNS (National Health Council) and no. 510/16,[8] the project was submitted to the Research Ethics Committee at the University of the State of Rio de Janeiro, linked to the Sub-Rectory of Graduate Studies and Research at UERJ. It was also referred to the Comitê de Ética em Pesquisa da Secretaria Municipal de Saúde do Rio de Janeiro (Research Ethics Committee of the Municipal Health Department of Rio de Janeiro), being approved by both committees. It obtained a favorable result with opinion 3.316.926/2019 and Secretaria Municipal de Saúde do Rio de Janeiro (Municipal Health Department of Rio de Janeiro), with opinion 3.450.662/2019.

Results

Table 1 shows that 13.7% of mothers were adolescents and among them, 0.4% were between 12 and 14 years old. Women aged 20-34 years predominated, with 81.3%. A total of 87.2% had 8 to 12 years or more of schooling. The brown race was predominant in the study corresponding to 46.4%, followed by 34.9% white and 18.5% black. Prenatal care was started early by 40.4% of them and 53.5% started prenatal care in the second trimester of pregnancy.

Table 1. Distribution of data related to maternal and gestational sociodemographic characteristics at David Capistrano Filho birthing center, from 2014 to 2018. (N= 949)

Variable		N	%
Maternal Age Group	10 to 14 years old	4	0.4
	15 to 19 years old	126	13.3
	20 to 34 years old	772	81.3
	35 years or older	47	5.0
Maternal Education	1 to 3 years	8	0.8
	4 to 7 years	113	11.9
	8 to 12 years and over	828	87.2
Skin color or race of the mother	White	331	34.9
	Brown	440	46.4
	Black	176	18.5
	Indigenous	1	0.1
	Yellow	1	0.1
Marital Status	With partner	479	50.5
	No partner	470	49.5
Start of Pre Natal	1st quarter	383	40.4
	2nd quarter	508	53.5
	3rd quarter	58	6.1
7 consultations or more	No	82	8.6
	Yes	867	91.4
Gestational Week	< 37 weeks	7	0.7
	37 to 41 weeks	936	98.6
	>41s	6	0.6

Source: The authors (2022).

A total of 50.8% of the NB were female and 73.3% were born with 3,000g or more. The Apgar score at the first minute was higher than 7 in 98.3% and the Apgar score at the fifth minute was mostly higher than 7 in 99.6%. Breastfeeding in the first hour reached 98.3%. Most babies (99.3%) had the opportunity to go to their mothers' laps in the first minutes of life favoring skin-to-skin contact. Late clamping prevailed with 61.2% and it was performed early in only 1.4%. In 55.6%, the father clamped the umbilical cord (Table 2).

Table 2. Distribution of characteristics of the birth of babies at David Capistrano Filho birthing center, in the period from 2014 to 2018. (N= 949)

Variable		N	%
Sex	Female	482	50.8
	Male	467	49.2
Weight	< 2.500g	21	2.2
	2.500g to 2.999g	163	17.2
	3.000g to 3.499g	431	45.4
	3.500g to 3.999g	265	27.9
	4.000g or more	69	7.3
Apgar 1 minute	From 0-2	1	0.1
	From 3-4	1	0.2
	From 5-6	13	1.4
	From 7-10	933	98.3
Apgar 5 minute	From 5-6	4	0.4
	From 7-10	945	99.6
First hour breastfeeding	No	16	1.7
	Yes	933	98.3
Skin-to-skin contact	No	7	0.7
	Yes	942	99.3
Clamping	Early	13	1.4
	Timely	355	37.4
	Late	581	61.2
Who clamped?	Father	527	55.6
	Grandmother/Grandfather	97	10.2
	Other	102	10.7
	Professional	223	23.5

Source: The authors (2022).

Regarding the care offered to the NB, upper airway aspiration was not performed in 97.4% of cases. Vitamin K was administered in 97.8%, the Hepatitis B vaccine was administered in 97.6%, and 94.7% were exclusively breastfed (Table 3).

Table 3. Distribution of newborn care at David Capistrano Filho birthing center in the period from 2014 to 2018. (N= 949)

Variable		N	%
Upper airway aspiration	No	924	97,4
	Yes	25	2,6
Vitamin K	No	21	2,2
	Yes	928	97,8
Crede's method	No	28	3
	Yes	921	97
Hepatitis B vaccine	No	23	2,4
	Yes	926	97,6
Exclusive Breastfeeding	No	50	5,3
	Yes	899	94,7

Source: The authors (2022).

Regarding the distribution of complications in the NB, only 2.5% required resuscitation, 0.6% required oxygen support, and 2.2% required the use of an ambulance. Asphyxia occurred in 0.4% of cases and 7.1% required transfer (Table 4).

Table 4. Distribution of intercurrences in newborns assisted at David Capistrano Filho birthing center, from 2014 to 2018. (N=949)

Variable		N	%
Resuscitation	No	925	97.5
	Yes	24	2.5
Oxygen Support	No	943	99.4
	Yes	6	0.6
Ambulance	No	928	97.8
	Yes	21	2.2
Asphyxiation	No	945	99.6
	Yes	4	0.4
Discharge type	Discharged	882	92.9
	Transfer	67	7.1

Source: The authors (2022).

Discussion

The sociodemographic findings are similar to a study on childbirth care for adolescents and women of advanced maternal age in maternity hospitals linked to the Rede Cegonha, in which adolescents accounted for 20.5% and mothers between 12 and 14 years of age accounted for less than 1%. Parturient women between 20 and 34 years represented 68.5% of the total, while women in advanced age (35 years or more) corresponded to 11% of the total.[9]

The present study is in line with the results of a study on Casa Ângela birthing center in São Paulo on maternal education, in which 49.6% of mothers had completed higher education and 44.6% had completed elementary school.[10] The authors observed that women with higher education levels prefer to receive assistance during pregnancy, childbirth, and puerperium in normal childbirth centers whose philosophy is based on childbirth as a physiological event, respecting women'scentral role along with their social and cultural dimensions and without unnecessary interventions.

Brown was the predominant race/skin color in this study, followed by white and black. Thus, black mothers (brown and black), representing a total of 64.9%, had the opportunity to experience a humanized birth and respectful delivery in the birthing center. These results corroborate findings of a study[9] in which 71.7% of women were black and brown and 26% were white. Most pregnant women had partners, corroborating the study of Viellas, in which 78.5% of women had partners.[9]

Although a significant percentage of women started prenatal care in the second trimester, most of them managed to reach the minimum number of consultations recommended by the Ministry of Health. According to data from DATASUS on the health indicators of the Municipality of Rio de Janeiro between 2014 and 2018, an average of 75.8% of women attended seven or more consultations during prenatal care.[11]

At the time of birth, only a few newborns weighed below 2,500g, attributable to prenatal care, which aims to detect early possible maternal or fetal clinical changes that may trigger a high-risk situation, properly referring the pregnant woman for medical evaluation.

Almost all newborns were breastfed in the first hour and only 1.7% were not contemplated within the golden hour. Most babies had the opportunity to go to their mothers' lap in their first minutes of life, favoring skin-to-skin contact, which increases the probability of breastfeeding in the first hour of life, and provides stability to the cardiorespiratory system and higher blood glucose levels for the NB.[12] Another important practice is the maintenance of exclusive breastfeeding until six months after birth, when there is skin-to-skin contact.[12]

The predominant Apgar score in the first minute was higher than 7, with 98.3%. This result also agrees with that found at Casa Ângela birthing center, in which 96.6% of the babies had an Apgar score higher than 7 in the first minute of life.[7] When analyzing the number of babies born with an Apgar score lower than 6, which corresponds to a clinical picture of neonatal asphyxia, we obtained the same percentage of babies who did not reach the golden hour, that is, 1.7%. Thus, this may explain why skin-to-skin contact was not implemented in some newborns.

Breastfeeding in the first hour of life and skin-to-skin contact also reduce morbidity and mortality and prevent hypothermia and infection in the newborn and promote the reduction of anxiety and bleeding in the mother after birth.[13] Although for many years the hospital delivery care routine prioritized, as the first step of newborn care, placing them in a heated crib and wrapping them in a sterile field, contact with the mother immediately after birth has been recommended by the United Nations Children's Action Foundation, based on several benefits offered by this practice both for the child and the woman.[14]

Skin-to-skin contact between mother and baby is extremely important, since this non-verbal communication restores the baby's contact with the mother's physiological functions, such as her breathing. By feeling the mother's breathing movements, the baby will slow down any accelerated breathing after birth, getting closer to the mother's heartbeat. The mother's body is the first environment the baby needs to develop emotionally, and this relationship will constitute the baby's psychism, his internal world.[15]

Another finding is that, after birth, the baby's skin is very sensitive. He is born without any experience of contact with external realities, without the sense of his own corporeality and dimensions of time and space. It is worth emphasizing that hands holding and supporting the baby's naked body at the moment of birth are as important as the experience of birth or the contact they will have with their mother's body from then on.[15]

An integrative review showed a correlation between the increase in the bloodstream hemoglobin rate and late umbilical cord clamping. The results obtained here showed that late cord clamping can increase up to 75 mg more iron to the newborn, being an effective and costless way to promote increased iron reserves in the body.[3]

A study published by Cochrane, with 15 randomized trials and involving a total of 3.911 women and baby pairs, showed some important advantages of late cord clamping in healthy term babies, such as higher birth weight, earlier hemoglobin concentration, and increased iron stores up to six months after birth.[16] Although this same study also showed a small additional risk of jaundice in newborns requiring phototherapy, the benefits are much greater and significant than the risks.

One of the most striking characteristics of the care provided to the newborn found here was the high percentage of non-aspiration of airways and administration of vitamin K. These findings are in accordance with the WHO and the 2016 normal birth guidelines that state that all newborns should receive one milligram of vitamin K intramuscularly after birth.[1,4]

Sucking from the mouth and nose should not be performed in neonates born with clear amniotic fluid and who start breathing on their own after birth. Bathing, in turn, should be postponed until 24 hours after birth. If this is not possible for cultural reasons, bathing should be delayed for at least six hours. It is also important to ensure to mother and baby stay in the same room 24 hours a day.[4]

Evidence shows that the assessment of the color of extremities, trunk, and mucous membranes is subjective and has no relationship with oxygen saturation at birth, so it is no longer used to define the procedures.[2] In addition, newborns with adequate heart rate (HR) may take a few minutes to turn pink. In NB not requiring resuscitation procedures at birth, oxygen saturation at one minute of life is around 60-65%, only reaching values of 87%-92% at the fifth minute of life. The transition process to reach oxygen saturation above 90% requires five minutes or more in healthy NB breathing room air.[2]

At birth, the NB undergoes an assessment of five signs in the first, fifth, and tenth minute after birth called Apgar score, namely: heart rate, breathing, muscle tone, skin color, and presence of reflexes, assigning each of the signs a score from 0 to 2. The sum resulting from the Apgar Index should not be used to determine the onset of resuscitation or the maneuvers to be performed during the procedure. However, measuring the Apgar Index longitudinally allows evaluation of the response of the NB to the maneuvers performed and their effectiveness.[2]

Among the complications found in the study, 2.5% of newborns required neonatal resuscitation and, according to the Sociedade Brasileira de Pediatria – SBP (Brazilian Society of Pediatrics), it is expected that 10% of them need this procedure at birth. Neonatal asphyxia, which occurred in four cases, was within what is expected by the SBP, which observed an incidence for the disease of one to six cases per 1.000 live births in developed countries and an incidence significantly higher in developing countries, representing the third most common cause of neonatal death worldwide, estimated at 23%.[17-18] Thus, we can infer that the quantity of cases found in the birthing center is similar to the reality found in other units, including hospitals, worldwide.

A study conducted in Norway to evaluate the safety of birth in normal birthing centers showed that out of a total of 1.275 women, only 4.5% of those who started labor in normal birthing centers required transfer to the hospital during labor.

In 4.7% of the cases, mother and baby were transferred after birth, and in only 0.4%, newborns had an Apgar score below 7 in the fifth minute of life.[19]

After birth, newborn vitality is evaluated through the absence of meconium, the term of gestation, whether they were born breathing or crying, and also the muscle tone. If the answer is positive to all questions, the NB is considered to have good vitality and does not require resuscitation maneuvers. What determined this need is the simultaneous assessment of respiration and HR, the latter being the main determinant for the onset of maneuvers. After birth, the NB must breathe regularly and sufficiently to keep the HR above 100bpm. HRis assessed by precordial auscultation with a stethoscope and may eventually be verified by palpation of the pulse at the base of the umbilical cord.[2]

Of the babies born in a birthing center in the period analyzed here, 92.9% did not require transfer to a hospital unit. Those who required transfer were transferred for the following reasons: respiratory distress, to accompany their mother, pediatric evaluation, low weight, and jaundice. The results agree with the findings of the study conducted in a birthing center in Pernambuco in which one of the greatest causes of transfer was respiratory discomfort (13.1%).[20]

It was also possible to compare the results obtained with the study that described the characteristics of newborns transferred from the normal birth center to the hospital unit, which found that the reasons for transfer were not associated with the care provided by the normal birth center.[21] According to the authors, jaundice was the main reason indicated and was described in the medical records using the following related terms: rh incompatibility, increased total fractional bilirubin, phototherapy, positive direct coombs, and jaundice. The same study also mentions that physiological jaundice, which occurs after 24 hours of life, may affect about half of the term newborns. In addition, in pregnancies of usual risk, there is no way to predict its occurrence in normal-risk pregnancies.

One of this study's limitations is that the data were extracted from medical records and are subject to bias. However, the results presented contribute to a better understanding of the clinical and demographic characteristics of mothers and newborns assisted in a birthing center, and show that most of the provided care is in line with the good practices recommended by the WHO, such as skin-to-skin contact, favoring mother and baby bonding, breastfeeding in the first hour of life, and late and timely clamping.

This study also contributes to the literature and nursing practice since it draws attention to the care provided by nurses for providing assistance that can reduce unnecessary interventions and prioritize procedures that result in favorable outcomes for mother and baby.

Conclusion

This study demonstrated the clinical and demographic characteristics of mothers and newborns assisted at David Capistrano Filho birthing center of Rio de Janeiro, showing that the majority declared themselves black, the most prevalent age group was 20 to 34 years, and prenatal care was initiated in the second gestational trimester.

Most of newborns were female and born with 3,000g or more. The Apgar score in both the first and fifth minutes was mostly higher than 7. Breastfeeding and skin-to-skin contact were performed in the majority of births, as well as late and timely clamping and administration of vitamin K and Hepatitis B vaccine. Most newborns did not require upper airway aspiration and resuscitation maneuvers.

These results demonstrate that the care provided at David Capistrano Filho birthing center at Rio de Janeiro follows the recommendations of the WHO and national guidelines for assistance with normal childbirth. It is worth emphasizing the importance of new studies that can correlate the results found and

further investigate the implications of the newborn's clinical findings and the consequences for their extrauterine adaptation, growth, and development. Future studies should also encourage including this topic in the curricula of health programs to train professionals grounded in evidence-based practices and with a humanistic vision.

Conflict of interest

No financial, legal or political conflicts involving third parties (government, companies and private foundations, etc.) were declared for any aspect of this submitted manuscript (including, but not limited to grants and funding, participation in an advisory board, study design, manuscript preparation, statistical analysis, etc.).

Authors' contributions

Neves NB contributed to the conception and design of the study, literature review, data collection and writing of the manuscript. Medina ET participated in the conception and design of the study, data collection, elaboration and intellectual revision of the manuscript. Mouta RJO worked on data collection and intellectual review of the manuscript. Silva SCSB participated in the conception and design of the study and in the intellectual review of the manuscript. Mesquita ND contributed to the literature and intellectual review of the manuscript. Silva ALS participated in the literature review and writing of the manuscript. All authors approved the final version of the article.

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