ORIGINAL ARTICLE

EPIDEMIOLOGIC CHARACTERIZATION OF PARTURITIONS AND BIRTHS:
ANECOLOGICAL STUDY BASED ON AN INFORMATION SYSTEM

CARACTERIZAÇÃO EPIDEMIOLOGICA DE PARTOS E NASCIMENTOS: ESTUDO ECOLÓGICO
COM BASE EM UM SISTEMA DE INFORMAÇÃO

CARACTERIZACIÓN EPIDEMIOLÓGICA DE PARTOS Y NACIMIENTOS: ESTUDIO ECOLÓGICO
CON BASE EN UN SISTEMA DE INFORMACIÓN

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ABSTRACT

Objective: characterizing the parturitions and births in the State of Rio Grande do Norte. Methods: an ecological study with a quantitative approach, developed from secondary data from the Information System about Live Births. The processing and analysis of data were developed through the softwares TabWin (DATASUS) and Excel (Microsoft®) and were expressed in tables, considering the descriptive statistics.

Results: 196,632 births were analyzed in the period 2008-2011, there was higher prevalence of hospital births (over 97 %), regarding the newborns, stood out weight of 3.000 to 3.999g (65,4%), Apgar score at 1st and 5th minutes between 8 and 10 points (85,0% and 96,7% respectively).

Conclusion: is necessary to stimulate adherence to vaginal parturition, expand coverage of prenatal care and improve the quality of the records on the birth certificate, with special attention to the type of congenital anomaly item. Live Birth; Information Systems; Epidemiology; Nursing.

RESUMO

Objetivo: caracterizar os partos e nascimentos ocorridos no Estado do Rio Grande do Norte. Método: estudo ecológico, com abordagem quantitativa, desenvolvido a partir de dados secundários do Sistema de Informações sobre Nascidos Vivos. O processamento e análise dos dados desenvolveram-se por meio dos softwares TabWin (DATASUS) e Excel (Microsoft®) e foram expressos em tabelas, considerando-se a estatística descritiva.

Resultados: foram analisados 196.632 nascimentos, no período de 2008 a 2011; houve maior predominância de partos hospitalares (percentuais superiores a 97%); quanto aos recém-nascidos, destacou-se peso de 3.000 a 3.999g (65,4%), Apgar no 1º e 5º minuto entre 8 e 10 pontos (85,0% e 96,7% respectivamente).

Conclusão: faz-se necessário estimular a adesão ao parto normal, expandir a cobertura de assistência ao pré-natal e melhorar a qualidade dos registros na declaração de nascido vivo, com atenção especial para o item tipo de anomalia congênita. Descritores: Nascimento Vivo; Sistemas de Informação; Epidemiologia; Enfermagem.

REZUMAJO

Objetivo: caracterizar os partos y nacimientos ocurridos en el Estado de Rio Grande do Norte. Método: estudio ecológico, con un enfoque cuantitativo, desarrollado a partir de datos secundarios del Sistema de Información de Nacidos Vivos. El procesamiento y análisis de los datos se desarrollaron a través del software TabWin (DATASUS) y Excel (Microsoft®) y se expresaron en tablas, teniendo en cuenta la estadística descriptiva.

Resultados: se analizaron 196,632 nacimientos en el periodo de 2008 a 2011; hubo mayor predominancia de partos hospitalares (porcentajes superiores al 97%); cuanto a los recién nacidos, destacó-se peso de 3.000 a 3.999g (65,4%), Apgar en el 1º y 5º minuto entre 8 y 10 puntos (85,0% y 96,7% respectivamente).

Conclusión: se necesita estimular la adherencia al parto normal, ampliar la cobertura de asistencia al prenatal y mejorar la calidad de los registros en el acta de nacimiento, con especial atención para el ítem tipo de anomalía congénita. Descritores: Nacimiento Vivo; Sistemas de Información; Epidemiología; Enfermería.

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Carvalho IS, Costa Júnior PB da, Macedo JBPO et al. Epidemiologic characterization of parturitions...
INTRODUCTION

The experience of the process of gestating and giving birth has a strong impact on women's lives, the fact that, because of its importance, generates expectations beyond pregnancy and promotes keepsakes for life. However, such processes have received, over time, considerable influences of social, cultural contexts and the technocratic model prevailing in health services.1

In the current context, there is the reality in which hospitals began to exert a strong decision power over the life of the triad mother, baby and family, given the time, circumstances and people who will attend the birth and even the behavior of individuals involved in the process. Obstetric care thus became dehumanized and woman lost the power of decision about their health and about the actions related to your own body, making it questionable quality of care provided to it.2

On the Brazilian reality, it follows that the deficit during the prenatal period, the information model of care and hospitalization of childbirth transferred to the physician control over the birth process. Thus, a true “outsourcing” of childbirth occurs, ie, a cultural transfer of physiological control exerted by the woman to an essentially technical command exercised by the doctor.3,386

In order to combat this technical model of obstetric care, the Ministry of Health established in 2000, the Program for Humanization of Prenatal and Birth (PHPN), through Ordinance/GM nº 569, June 6º, 2000. This program has as principles the right to decent and quality monitoring for all pregnant women during periods of pregnancy, childbirth and the guarantee of access to maternity leave, the right to a humane and safe care to all women, as well as to newborns during neonatal care.4

The proposed humanization of childbirth requires changes in care practices that should guide the respect the right of women to have a safe, pleasurable motherhood, with the presence of a companion of your choice. Thus, this is based on a service capable of respecting the scientific evidence of safety, efficacy and participation reality, not just guided by convenience of institutions and health professionals.5

To realize this reality a revision of the concept of quality of care at birth and adoption of new attitudes is needed. These will be feasible only through investments in training health professionals, contemplating the advantages of a natural birth.6 In this sense, it highlights the role of the nurse as a professional developer of changes in practices aimed at parturition. In the context of obstetric care, the nurse plays a key role in raising awareness of managers and health team for new paradigms of health care. Moreover, it is necessary to explore this field of nursing care, with emphasis on producing studies to highlight strategies to improve care and enhance the recommendations scientifically proven.6

It is considered that know the reality and characteristics in the labor and delivery happen is configured as the first step in making changes on the care of women parturition period. Thus, this study is justified by exposing data on the variables involved in the labor and birth process, which may provide support to managers and health professionals for planning, intervention and redirection of obstetric practices.

OBJECTIVE

- Characterizing the parturitions and births in the State of Rio Grande do Norte.

METHOD

This is an ecological study, with a quantitative approach, based on secondary data on live births in the State of Rio Grande do Norte, in the period of 2008-2011.

Rio Grande do Norte is located in northeastern Brazil and has an area of 52,811,047 Km². In 2010 had a population of 3,168,027 inhabitants, of whom 1,619,140 were women, distributed in 167 municipalities. The Capital State is Natal.7

The data were from the National Information System on Live Births (SINASC). SINASC enables accessing to data on births in Brazil, with updated using a standard document in the birth certificate. Thus, this document is of great importance for statistical, demographic and epidemiological terms.8

The variables were grouped according to three aspects, namely: spatial characteristics - Regional health and site of delivery, maternal characteristics - age, education, marital status, length of gestation, type of pregnancy, type of delivery, and consultation prenatal, and newborn characteristics - gender, color/race, Apgar score at 1º and 5º minutes, birth weight, presence and type of congenital anomaly.

The processing and analysis of data developed through software TabWin (DATASUL) and Excel (Microsoft®) and were
expressed in tables, considering the descriptive statistics. Quantitative and qualitative variables were described as absolute and relative frequency.

This study was conducted with public domain data from the SINASC, without identification of the subject, and therefore, in accordance with the ethical principles of human research.

**RESULTS**

**Spatial Features**

During the study period, we identified the presence of 196,632 live births in the State of Rio Grande do Norte, ranging from 50,246 (2008) to 48,217 (2010) and annual average of 49,158 live births. As regional health, the greatest number of live births stood out in Grande Natal, which is composed of six municipalities, namely: Ceará-Mirim, Extremoz, Macaíba, Natal, Parnamirim and São Gonçalo do Amarante. This regional presented percentages greater than 50% of births in the state, the highest value being observed in 2011, the year the Great Christmas was responsible for the birth of 52.6% of newborns (Table 01).

**Maternal characteristics**

The age range that prevailed among mothers who delivered their children in the State of Rio Grande do Norte was between 20 and 24 years old (29,2%) and 25 and 29 (24,6%). A total of 41,203 (21,0%) women were less than 20, especially for the age group between 15 and 19 (19,8%). The range of education of mothers that more was present was 8-11 years of education (41,5%) and 4-7 years (33,4%). Only 3,110 women (1,6%) did not have any instruction. Most mothers were single (58,3%) and 29,0 % reported being married.

In 88,6% of cases pregnancy lasted 37-41 weeks and 98,1% of cases pregnancy is the only type. The twinning was present in only 1,7% of the cases. On the type of delivery, it was found that 50,6% were vaginally. In the last two years evaluated, 2010 and 2011, the number of cesarean parturitions was higher than normal parturitions, with percentages of 51,6% and 53,2%, respectively. In terms of the quantitative consultations during prenatal 48,1% women had 7 or more visits. In turn, 3,199 (1,6%) did not attend any consultation (Table 03).

<table>
<thead>
<tr>
<th>Variables</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of pre-natal consultations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>3,199</td>
<td>1.6</td>
</tr>
<tr>
<td>1 - 3</td>
<td>14,557</td>
<td>7.4</td>
</tr>
<tr>
<td>4 - 6</td>
<td>82,375</td>
<td>41.9</td>
</tr>
<tr>
<td>7 or more</td>
<td>94,511</td>
<td>48.1</td>
</tr>
<tr>
<td>Ignored</td>
<td>1,990</td>
<td>1.0</td>
</tr>
<tr>
<td>Duration of gestation (weeks)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lesser than 22</td>
<td>144</td>
<td>0.1</td>
</tr>
<tr>
<td>22 - 27</td>
<td>779</td>
<td>0.4</td>
</tr>
<tr>
<td>28 - 31</td>
<td>1,681</td>
<td>0.9</td>
</tr>
<tr>
<td>32 - 36</td>
<td>12,762</td>
<td>6.5</td>
</tr>
<tr>
<td>37 - 41</td>
<td>174,171</td>
<td>88.6</td>
</tr>
<tr>
<td>42 or more</td>
<td>3,981</td>
<td>2.1</td>
</tr>
<tr>
<td>Ignored</td>
<td>3,114</td>
<td>1.6</td>
</tr>
<tr>
<td>Type of pregnancy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only one</td>
<td>19,293</td>
<td>98.1</td>
</tr>
<tr>
<td>Double</td>
<td>3,260</td>
<td>1.7</td>
</tr>
<tr>
<td>Triple and more</td>
<td>85</td>
<td>0.0</td>
</tr>
<tr>
<td>Ignored</td>
<td>352</td>
<td>0.2</td>
</tr>
<tr>
<td>Parturition type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaginal</td>
<td>99,515</td>
<td>50.6</td>
</tr>
<tr>
<td>Cesarean</td>
<td>96,683</td>
<td>49.2</td>
</tr>
<tr>
<td>Ignored</td>
<td>434</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Source: Information System on Live Births.


<table>
<thead>
<tr>
<th>Apgar</th>
<th>1st minute</th>
<th>5th minute</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>0 - 2</td>
<td>1,542</td>
<td>0.8</td>
</tr>
<tr>
<td>3 - 5</td>
<td>6,872</td>
<td>3.5</td>
</tr>
<tr>
<td>6 - 7</td>
<td>19,611</td>
<td>10.0</td>
</tr>
<tr>
<td>8 - 10</td>
<td>167,848</td>
<td>85.0</td>
</tr>
<tr>
<td>Ignored</td>
<td>759</td>
<td>0.4</td>
</tr>
</tbody>
</table>

Source: Information System on Live Births.

Congenital anomalies chained 1,124 newborns, which corresponds to a percentage of 0.6% of live births. When we look at the types of anomalies, the total recorded in SINASC was 1,115 cases, which indicates incompleteness of information. Whereas the latter figure, there was a higher frequency of abnormalities classified as other malformations and congenital deformities musculoskeletal system (25.7%) and congenital deformities of the feet (20.0%) (Table 5).


<table>
<thead>
<tr>
<th>Type of congenital anomaly</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spina bifida</td>
<td>23</td>
<td>2.1</td>
</tr>
<tr>
<td>Other congenital malformations of nervous system</td>
<td>141</td>
<td>12.6</td>
</tr>
<tr>
<td>Congenital malformations of circulatory system</td>
<td>27</td>
<td>2.4</td>
</tr>
<tr>
<td>Cleft lip and cleft palate</td>
<td>86</td>
<td>7.7</td>
</tr>
<tr>
<td>Absence, atresia and stenosis of small intestine</td>
<td>3</td>
<td>0.3</td>
</tr>
<tr>
<td>Other congenital digestive tract malformation</td>
<td>58</td>
<td>5.2</td>
</tr>
<tr>
<td>Testicle not come down</td>
<td>2</td>
<td>0.2</td>
</tr>
<tr>
<td>Other malformations of genitourinary system</td>
<td>75</td>
<td>6.7</td>
</tr>
<tr>
<td>Congenital deformities of hip</td>
<td>2</td>
<td>0.2</td>
</tr>
<tr>
<td>Congenital deformities of the feet</td>
<td>223</td>
<td>20.0</td>
</tr>
<tr>
<td>Other malformations and deformities, congenital musculoskeletal apparatus</td>
<td>287</td>
<td>25.7</td>
</tr>
<tr>
<td>Other congenital malformations</td>
<td>112</td>
<td>10.0</td>
</tr>
<tr>
<td>Chromosomal abnormalities NCOP</td>
<td>72</td>
<td>6.5</td>
</tr>
<tr>
<td>Hemangioma and Lymphangiomata</td>
<td>4</td>
<td>0.4</td>
</tr>
<tr>
<td>Total</td>
<td>1,115</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Information System on Live Births.
DISCUSSION

The State of Rio Grande do Norte is divided into seven Health Regions of ‘A Grande Natal’ considerable expressiveness against the other is due in particular to the fact that it includes the State Capital of Natal, which is a benchmark in health care for metropolitan area and the State. Moreover, the precariousness of obstetric present inside means there is often the displacement of mothers to the capital in search of better care during childbirth. This fact contributes to the burden of obstetric services; to suit an excessive demand for women in labor cannot offer minimally quality care.

On the prevalence of birth in the hospital environment, this framework is reflective of historical change has gone through the process of birth. The incorporation of the event into medical practice has made deliveries, formerly occurred in the home environment, to begin to develop in the hospital, and the health professional has become the driver of the birth process. In the United States, for example, a study of births in the period from 1990 to 2009 showed that the percentage of home births in 2009 was 0,72%. In agreement with these results, the Metropolitan Region of São Paulo showed less than 1% of deliveries in non-hospital facilities, numbers that confirm the occurrence of this global reality.

Regarding the age of the mothers, there was a predominance of births in young women, who are in full swing of their childbearing years. However, it is worrying number of births among teenagers. This phase of life - adolescence - includes a transitional period between childhood and adulthood and is characterized by physical, physiological and psychological changes. The occurrence of pregnancy in this period of crisis and transformation can reach a size such that it can promote a number of social impacts on the lives of teen.

This reality proves to be necessary investments in projects that work on human sexuality and adolescent population, encouraging the use of contraception in order to prevent the occurrence of unplanned pregnancy. When considering the range of education for women, highlights the fact that most have up to 11 years of schooling, a condition that can contribute to a better understanding of the importance of the care to be taken during this phase, so particular, the life cycle female. On completion of the prenatal identification of low education (less than five years of regular study) is considered a risk factor, but it allows the monitoring of pregnant women in primary care. Another factor considered risk is unstable marital status, which was detected in the survey, as most women were single. It is understood that this instability predisposes to a difficulty in raising children, whereas women need, in many cases, provide sustenance alone home, and not have the support of a partner to raise children.

Regarding the duration of the pregnancy, it was perceived that the outcome was favorable, considering the majority of births occurred between 37 and 41 weeks, which ranked as newborns at term. It is known that prematurity, ie, newborns less than 37 weeks gestational age can cause organic or systemic dysfunction can produce serious complications and lead to the baby's death. Moreover, we have the financial and social impact that this entails, given the need for equipment and qualified professionals. Still Weds direct impacts within the family, upon the birth of a premature child.

Regarding the type of delivery, the calculated data corroborate the current trend of medicalization of childbirth. The high rates of cesarean deliveries show that the state of Rio Grande do Norte is far from reaching a value of 15% of cesareans recommended by WHO. What makes this situation even worse is to see it as not being a State issue. This situation constitutes a reality in many parts of Brazil. An international study conducted in two hospitals in the city of Maringá, Paraná, for example, revealed the prevalence of cesarean sections in both institutions, with percentages of 51% and 52%.

In terms of the number of consultation during the prenatal period, the Program for Humanization of Prenatal and Birth of the Ministry of Health states that must be performed at least six visits, distributed as follows: one in the first quarter, two in the second quarter and three in the third trimester. In the present study although the majority of pregnant women had attended 7 or more visits, one must consider the percentage of 1,6% that did not, ie 3.199 women. Prenatal appears as odd to care to mother and baby, during which keeps a constant watch to prevent/mitigate potential complications when.

The expansion of its coverage and the quality of care delivered during this period should be part of the goals of managers and health professionals in order to minimize complications inherent to the pregnancy cycle...
and impacting negatively on health indicators, such as maternal and perinatal mortality.

Regarding the weight of the newborn, this figure is as a health indicator that reflects sued as fetal development. The weight is used as a parameter for the newborn, as follows: underweight (less than 2.500g), underweight (2.500ga 2.999g), normal weight (3.000g 3.999) and overweight (4000g or more). Data from the present study demonstrated a percentage of 65,4% of newly born with normal weight. However, it is noteworthy that over 25% of infants had birth weights below the values stated.

The monitoring of this variable has significant importance because the risk of dying increases as weight decreases: newborns weighing less than 2.500g has 5 times more likely to die in the first year of life compared with those with normal weight. This probability is 20 times greater when it comes to newborns with less than 1.500g.

The Apgar score assesses the condition of the newborn at birth, in the first, fifth and tenth minute, second five signals, namely: respiration, heart rate, color, muscle tone, and reflex irritability. For each signal are assigned grades ranging from 0 to 2 and the sum of grades ranging from 0 to 10. Values below 7 indicate critical condition of the newborn. The results of this index must be constantly monitored, since low results obtained in the first and fifth minutes also constitute a risk factor for infant mortality.

In terms of the main anomaly identified - musculoskeletal - the obtained findings may be associated with the fact that this anomaly be easy to diagnose, since the macromosomal malformations are visible and detectable with the physical examination. About Data Loss observed, this may be related to how the birth certificate is structured. The item assessing congenital malformations and/or chromosomal abnormality has three options: present, absent or ignored. If selected the first option, the malformation and/or failure shall be described in a single line. The fact that there is an open question without a prior determination of groups of anomalies, increases the complexity of filling and contributes to the underreporting.

It is important that further discussions are undertaken to find ways to minimize the chances of having this underreporting as relevant item from the birth certificate. Moreover, one should establish mechanisms that promote prevention to early diagnosis of malformations and/or anomalies.

CONCLUSION

The findings of this study showed the prevalence of hospital, resulting births to mothers with age range between 20 and 24, schooling from 8 to 11 years, single, with gestational duration 37-41 weeks carrying seven or more prenatal visits prenatal and birth vaginally. About newborns, stood out weight of 3.000 to 3.999g, Apgar score at 1st and 5th minutes between 8 and 10 points and in case of congenital anomalies, there was a higher frequency of other malformations classified as congenital deformities and musculoskeletal system.

Among the identified limitations, it was highlighted the problem of underreporting, a condition that can cause mistaken interpretations, with the possibility of underestimation of the findings in the present study. In this sense, they become needed greater investment in training that seek to guide health professionals on the importance of the correct completion of the information in the birth certificate. This may contribute to the production of consistent data on the status of deliveries and births in Brazil, which are essential for planning and instituting actions to the obstetric setting.

The percentages of missing data were small, a condition that emphasizes the relevance of SINASC as an information system, capable of acting as an excellent tool for monitoring and evaluating quality of care provided during the prenatal, labor and birth.

On the findings that have received attention in issues that persisted in the obstetric field: increased rate of cesarean deliveries, need to expand prenatal care, teen pregnancy and newborns with low birth weight. Through this reality, public policies should be instituted with a view to increasingly contribute to reducing the indices referring to the mentioned problems, especially health education, restructuring of services and professional training.

Underreporting the type of congenital anomaly is needed awakening of professionals to the importance of effective record of epidemiological data, since these serve as tools for the analysis of health conditions and consequent modification of existing contexts. Conducting studies to promote appreciation of these data, giving them the proper interpretation should be promoted and implemented in several areas of health.
REFERENCES


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