Federal University of Rio de Janeiro State

Journal of Research Fundamental Care Online

ISSN 2175-5361
DOI: 10.9789/2175-5361

RESEARCH

Incompletude de informação de nascidos vivos em São Luís/MA no ano de 2012

Information incompleteness of Live Births in São Luís/MA in 2012

Información de la incompletitud de nacidos vivos en São Luís/MA en 2012

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ABSTRACT

Objective: to evaluate the Information System on Live Births in São Luís/MA referring to the mother, child and pregnancy. **Method:** this is a longitudinal and retrospective study. Data collection was performed in 2012, with a population of 18,065 live births in the Declaration of Live Birth. The calculation of the percentage of incomplete classification criterion of scale Romero and Cunha was carried out. **Results:** the Information System on Live Births in São Luís/MA showed fair to excellent completeness for most variables. Maternal and infant variables with excellent completeness were maternal age, marital status, education, sex of child, weight and Apgar score at 1 and 5 minutes. The highest percentages of incompleteness were the variables gestational age, mother's occupation, number of children living and dead. **Conclusions:** the estimated coverage of the Information System of Live Birth showed a regular completeness. **Descriptors:** Vital statistics, Birth certificates, Health systems.

RESUMO

Objetivo: avaliar o Sistema de Informação de Nascidos Vivos na cidade de São Luís/MA referente às variáveis relacionadas à mãe, criança e a gestação. **Método:** trata-se de um estudo longitudinal e retrospectivo. A coleta de dados foi realizada em 2012, com população de 18.065 nascidos vivos, por meio da Declaração de Nascidos Vivos. Realizou-se o cálculo do percentual de incompletitude pelo critério de classificação da escala de Romero e Cunha. **Resultados:** completitude identificada de regular a excelente para a maioria das variáveis. As variáveis maternas e infantis que apresentaram excelente completitude foram: idade materna, estado civil, escolaridade, sexo da criança, peso e índice de Apgar no 1º e 5º minuto. Os maiores percentuais de incompletude foram as variáveis: idade gestacional, ocupação da mãe, quantidade de filhos vivos e mortos. **Conclusões:** a cobertura estimada do Sistema de Informação de Nascidos Vivos apresentou uma completude regular. **Descritores:** Estatísticas vitais, Declaração de nascimento, Sistemas de saúde.

RESUMEN

Objetivo: evaluar el Sistema de Información sobre Nacidos Vivos en São Luís/MA relativos a las variables relacionadas con la madre, el niño y el embarazo. **Método:** se realizó un estudio retrospectivo longitudinal. La recolección de datos se realizó en 2012, con una población de 18.065 nacidos vivos en la Declaración de Nacido Vivo. Se realizó el cálculo del porcentaje de la escala criterio de clasificación incompleta de Romero y Cunha. **Resultados:** el sistema de Informaciones de Nacidos Vivos de São Luís/MA identificó de buena a excelente para la mayoría de las variables. Maternal y las variables infantiles con una excelente integridad fueron: edad materna, el estado civil, la educación, el sexo del niño, peso e índice de Apgar a 1 y 5 minutos. Los mayores porcentajes de la incompletitud fueron las variables: edad gestacional, la ocupación de la madre, número de nacidos vivos y mortinatos. **Conclusiones:** la cobertura estimada del Sistema de Información de Nacido Vivo presentó una integridad regular. **Descriptores:** Estadísticas vitales, Certificado de nacimiento, Sistemas de salud.

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INTRODUCTION

In 1990, the Ministry of Health implemented the Live Birth Information System (SINASC), which uses as standard tool the Statement of Live Birth (DNV) and aims to provide information on birth, place of occurrence, data on mother, pregnancy, childbirth and the newborn,[1] key to the establishment of specific health indicators.[2]

DNV, an official document of national validity is mandatory in hospitals and other healthcare institutions where they childbirths are held.[3] Its issue is the competence and responsibility of health workers or midwives (recognized and linked to health units) responsible for delivery care to the newborn or in the case of hospital and home births with assistance.[4-5]

According to Nhoncanse and Melo,[6] the declaration must be completed for all children born in health facilities and at home, essential for civil registration. Its filling is characterized by being one of the main sources of data for the generation of health indicators on prenatal care, childbirth assistance and vitality at birth, and it is part of the calculation of infant and maternal mortality rates.[7]

From the DNV, it is possible to perform the calculation of risk factors indicators and related protection of maternal and child health (proportion of live births to adolescents mothers and proportion of live births of low birth weight) as well as coverage indicators (proportion of hospital births and the proportion of cesarean deliveries). It is essential that the registration of live births be done shortly after birth, from the Public Records Law Number 6015 of December 31, 1973,[8] in order to not produce distortion in the calculation of health indicators.[9]

SINASC currently constitutes an essential tool for the knowledge of the epidemiology, planning and evaluation of maternal and child health activities and enables the monitoring of maternal and child risk profile of the population, elaborating appropriate health policies, aimed at specific groups.[3] Thus, it allows to track the profile of this segment of the population and elaborate appropriate health policies, aimed at specific groups according to risk profile.[10]

However, some features are essential for the credibility of SINASC information such as coverage and reliability being compromised by underreporting of events and the incorrect and incomplete declaration of live births.[11] It is noteworthy that, cases of sub-notification of live birth records reflect the inability to capture these events by the health system,[12] which compromises the reliability of data and the preparation of reliable statistics.[13]

Another aspect to be mentioned is the existence of local, regional and state differences in the coverage and quality of SINASC records, managed by the three spheres of government

(Federal, State, and Municipal). In this context, it emphasizes the important role of municipal managers to ensure the qualification of SINASC, due to the decentralization of the management of this system. It is known that identify underreporting of live births at the municipal level will contribute to the adoption of specific and necessary actions for its reduction at the local level,[12] since such identification will reflect the reality of a given population profile.[3]

With regard to coverage, the Brazilian Institute of Geography and Statistics (IBGE) reported in 2009, 90% registration of live births since 2005.[14] In 2009, the ratio between the number of live births reported by SINASC and estimates derived from the projections of IBGE (2009) reached 96.0% for the country as a whole, and 93.0% for the Northeast region. It should be noted that values below 90.0% are still observed in some units of the Federation.[4]

The consolidation of the system as a source of highly relevant data for public health requires efforts related to improving the information. This highlights the need to assess the SINASC information, either from a quantitative point of view (system coverage, filling completeness) and quality point of view (reliability/accuracy of the information).

When considering the scientific evidence that there are regional differences in the coverage and quality of SINASC, it is highlighted the interest in evaluating the incompleteness of SINASC data in São Luís, Maranhão state capital, located in the Northeast region of the country. It should be noted that in this city, the system was implemented in 1993, and since then, there have not been identified surveys to assess the information provided by the system as the diversity of variables involved in the collection of system data. This fact highlights a knowledge gap that motivated the present study.

Thus, it is proposed an evaluation research of Live Birth Information System in the city of São Luís/MA as a way of identifying relevance to improving the quality of official information about live births. In addition, it is noteworthy that studies of this nature have the advantage of ease of access, low cost, and has the characteristic of population-based research and nationwide.

METHOD

This is a longitudinal retrospective study conducted in São Luís/MA, with a population of 1,027,430 inhabitants and 18,316 live births in 2011, according to DATASUS.[15] The study was submitted and approved by the Research Ethics Committee of Ribeirão Preto Nursing School, University of São Paulo (EERP / USP) under number 292 317 protocol, complying with Resolution 196/96 of the National Research Ethics Commission (CONEP).

The study population consisted of 18,065 live births occurring in the place of residence of their mother (São Luís/MA) in 2012. Births that occurred at home, other locations or ignored

data on the place of occurrence, as well as the births occurred in other cities in the state of Maranhão were excluded.

Data collection took place from July to October 2013 in the surveillance sector in the Municipal Health Secretary of São Luís, located in São Luís/MA, the city where the live birth certificates were available to the principal investigator of this study.

The variables studied were related to the mother, newborn and obstetric data. The variables related to the mother were: age, marital status, occupation, education level, number of living children, amount of dead children. Variables related to newborns were gender, weight, Apgar score in the first minute, Apgar score in the first and fifth minute. The variables related to obstetric data were: type of pregnancy, prenatal visits, gestational age and type of delivery.

In the analysis, the completion percentage (fill in blank and ignored) for each variable and the classification criteria of the scale suggested by Romero and following Cunha were used: excellent, when the variable shows less than 5% coverage incomplete; good from 5.0% to 9.9%; regular from 10.0% to 19.9%; bad from 20.0% to 49,9%; and very bad with 50.0% or more.[16]

RESULTS AND DISCUSSION

In São Luís, it was observed that the Live Birth Information System has an excellent regular fill of completeness for most variables. The highest percentages of incompleteness have been observed in the variables: gestational age (17.33%), mother's occupation (11.23%), number of living children (11.08%) and dead children (11.08%), being regular the quality of information on registration of live births, as shown in table 1 below.

Table 01. Incompletion of variables related to the mother, the child and pregnancy and childbirth of SINASC in São Luís, Brazil, in 2012.

Variables	Incompletion			
	No		Yes*	
	f	%	f	%
Related to the mother				
Age	18065	100,00	0	0,00
Marital status	17596	97,40	469	2,60
Occupation	16036	88,77	2029	11,23
Education	17797	98,52	268	1,48
Number of lived children	16064	88,92	2001	11,08
Number of children death	16064	88,92	2001	11,08
Related to the children				
Gender	18056	99.95	9	0.05
Weight	18065	100.00	0	0.00
Apgar index - 5º minute	17602	97.44	463	2.56
Apgar index - 1º minute	17614	97.50	451	2.50
Related to the the pregnancy and delivery				
Type of pregnancy	17980	99.53	85	0,47
Prenatal consultations	18053	99.93	12	0,07
Gestational age	14935	82.67	3130	17.33
Type of delivery	17952	99.37	113	0.63

Note: * completion percentage rating: Excellent <5.00%; Good = 5.00 and 9.90%; Regular=10.00 to 19.90%; Bad = 20.00 to 49.90%; Very bad = 50.00% or more.

The variables related to the mother such as maternal age (100%), marital status (97.40%) and education (88.77%) had excellent fullness in live birth records. The variables related to the child as gender, weight and Apgar index 1 and 5 minutes also showed excellent completeness and the weight variable filled in 100% of the population of live births.

In relation to pregnancy and delivery variables, gestational age with 17.33% of incompleteness was characterized as a regular in the register of births. Other variables such as pregnancy, prenatal visits, and delivery type showed excellent completeness.

The research shows a variation of quality regulation to excellent in the completeness of SINASC data for maternal variables and related to pregnancy and childbirth in the city of St. Louis in 2012. This result is equivalent to the study performed[7] with live birth records of mothers residence in the states of northeastern Brazil, in 2000 and 2009, from DATASUS, which found variation in the quality of the completeness of SINASC data.

Maternal education, one of the variables related to the mother´s characteristics, showed excellent quality of completeness, different from that observed in the study[18] that demonstrated the failure to obtain the excellent completeness of education in the states of Paraiba and Bahia. The categorization of education at intervals of years of study in the registration of live births obliges the finished to calculate the number of years of study and categorize degrees of education in hospital documents used as a secondary data source. These facts are conditions that influence the education of the completeness of quality in SINASC.[18]

The qualitative assessment of variables related to the child about the fulfillment of DNV, in particular, the measurement of frequency information “ignored”,[19] showed excellent quality in this study. The research developed in 2000-2009[17] concluded that only Rio Grande do Norte state had the variable of excellent quality Apgar score. It is noteworthy that the

deficiency in the completion of this variable can reflect the quality of care delivered to newborns and possibly their relationship with the lack of neonatologists in the delivery rooms. For some authors[10], the Apgar score tends not to be filled in places where there is a qualified professional.

Such registration errors in the completion of this variable, as well as other variables, reflecting the need for training of professionals involved in the SINASC process as well as to fill the DNV, featuring thus the need for greater involvement of the Municipal Health Department, as they are those responsible for the system power.

As for the variables related to pregnancy and childbirth, gestational age showed the highest percentage of incompleteness of data with regular quality of information. The lack of information about the gestational age can be explained by the lack of trained professionals or specific features as well as in cases when it is provided by the partner or relatives of the postpartum woman, such a situation was observed in the study performed in the city of Teresina/Pi20 where occurred absence of gestational age record in 83% of 14,413 live births (LB), children of mothers living in the capital, in the period January to December 2002.

Recent studies[17,21] have identified improvements in coverage and quality of SINASC records, although there remain gaps to fill the DNV. Technological facilities of information technology, information system implementation period, expansion of SINASC and especially professional training responsible for filling and processing data are factors that can justify the improvement of completeness of filling, reliability and underreporting.

These studies provide the proof of the validity and reliability of the data generated by the Hospital Information System, contributing to the system to be used as a source of reliable and timely data for research, planning and evaluation in health. [12]

It was possible to identify the reality of socio-demographic and epidemiological profile of the studied place, pointing out the differences of incompleteness according to the selected variables. Of all the variables studied, those related to pregnancy and childbirth, the variable gestational age, in particular, was the one with a higher percentage of incompleteness, which may indicate the need for training of professionals responsible for completing the investigation records/notification that give rise to the systems information.

Therefore, it is important to invest in the training of professionals involved for the maintenance of records in order to emphasize the importance of proper notice they run to promote the planning and subsequent implementation of actions consistent with the reality.

The research has shown that some maternal and child variables of SINASC in the city of São Luís/MA in 2012 still have a regular completeness, although other studies relate to improving DNV records over the years in the same state. It should be noted that this research conducted a partial assessment of the quality of SINASC log information limited to the completeness of maternal and child data.

Research conducted to evaluate the quality of SINASC records are important to produce reliable information that favor the correct calculation of maternal and child indicators and design of epidemiological profile, as well as subsidized decisions taken by data, representing the reality.

The results of this study demonstrate the importance of overcoming challenges to increase the completeness of some variables that can be achieved with the establishment of

actions and strategies as the systematic supervision of development and permanent training of professionals involving SINASC to ensure the trustworthiness and reliability of the data collected and available information.

CONCLUSION

The estimated coverage of Live Birth Information System evaluated in Sao Luís/MA presented a regular completeness, although other studies relate to improvement of Live Birth Declaration of records over the years in this state.

This finding emphasizes the importance of seeking the improvement and training of professionals involved in making the data records at SINASC, since this provides a knowledge of the local epidemiological profile, contributing to the planning, implementation and evaluation of actions, strategies and public health policies to solve the problems identified. It is worth noting the importance of reliable records and systematic control to avoid underreporting. The adoption of such measures will contribute to improving the completeness related to the coverage of Live Birth Information System in Sao Luís/MA.

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Received on: 28/07/2014
Required for review: 04/11/2014
Approved on: 17/09/2015
Published on: 07/01/2016

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