GROWTH AND DEVELOPMENT SURVEILLANCE: ANALYSIS OF RECORDS IN THE CHILD HEALTH HANDBOOK

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ABSTRACT: The objective in this study was to analyze the records of growth and development data for children under one year of age in the child health handbook. Cross-sectional study with quantitative approach. The empirical material was collected in 116 handbooks between December 2012 and March 2013 in João Pessoa – Paraíba, Brazil. The chi-square test and Fisher's exact test were used for analysis. None of the handbooks contained oral health records and the number of the Unified Health System card, 109 (94%) did not present prenatal data and 115 (99.1%) did not contain information on the actions of the First Integral Health Week. A significant association was found between the number of consults and the children's age and anthropometric data, with a higher percentage of missing records for children who took part in one to six consults. The health professionals are expected to reflect on their work process regarding the valuation of the Child Health Handbook.

DESCRIPTORS: Child health; Growth and development; Primary health care; Health records, personal; Family health.

VIGILÂNCIA DO CRESCIMENTO E DESENVOLVIMENTO: ANÁLISE DOS REGISTROS NA CADERNETA DE SAÚDE DA CRIANÇA

RESUMO: Objetivou analisar o registro de dados sobre vigilância do crescimento e desenvolvimento de crianças menores de um ano na caderneta de saúde da criança. Estudo transversal com abordagem quantitativa. O material empírico foi coletado em 116 cadernetas, entre dezembro de 2012 e março de 2013, em João Pessoa – Paraíba. Para análise, utilizou-se o teste qui-quadrado e o exato de Fisher. Nenhuma caderneta continha registros acerca da saúde bucal e do número do cartão do Sistema Único de Saúde, 109 (94%) não apresentavam dados do pré-natal e 115 (99,1%) não tinham informações referentes às ações da Primeira Semana Saúde Integral. Houve associação significativa entre o número de consultas e idade das crianças e dados antropométricos, com maior porcentagem de falhas nos registros daquelas que tiveram entre uma e seis consultas. Espera-se que os profissionais de saúde reflitam sobre seu processo de trabalho quanto à valorização da Caderneta de Saúde da Criança.

DESCRITORES: Saúde da criança; Crescimento e desenvolvimento; Atenção primária à saúde; Registros de saúde pessoal; Saúde da Família.

VIGILANCIA DEL CRECIMIENTO Y DESARROLLO: ANÁLISIS DE LOS REGISTROS EN LA TARJETA DE SALUD DEL NIÑO

RESUMEN: La finalidad del estudio fue analizar el registro de datos acerca de acompañamiento de crecimiento y desarrollo de niños de menos de un año por la tarjeta de salud de niños. Estudio transversal con abordaje cuantitativo, cuyo material empírico fue obtenido en 116 tarjetas, entre diciembre de 2012 y marzo de 2013, en João Pessoa – Paraíba. Para análisis, fue utilzado el test chi cuadrado y el exato de Fisher. Ninguna tarjeta contenía registros acerca de la salud bucal y del número en el Sistema Único de Salud; 109 (94%) no presentaban datos del prenatal; y 115 (99,1%) no traían informaciones de las acciones de la Primera Semana Salud Integral. Hubo significativa asociación entre el número de consultas y edad de los niños y datos antropométricos, con mayor porcentaje de fallas en los registros de aquellos que tuvieron entre una y seis consultas. Se espera que los profesionales de salud hagan una reflexión acerca de su proceso de trabajo cuanto a la valoración de la Tarjeta de Salud del Niño.

DESCRIPTORES: Salud del niño; Crecimiento y desarrollo; Atención primaria a la salud; Registros de salud personal; Salud de la Familia.

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INTRODUCTION

In the literature, it is increasingly acknowledged that health in the first years of life establishes the bases for wellbeing in the course of life. This viewpoint is particularly valuable to understand the potential of policies and programs focused on early childhood, with a view to producing benefits in adult life⁽¹⁾. Therefore, the focus on health promotion and disease prevention in children is important to provide for healthy growth and development.

It is estimated that, each year, around the world, 6.6 million children under five years of age die of neonatal complications and common illnesses in childhood, which could be avoided with better healthcare. Despite progresses in maternal, neonatal and child health interventions in the past two decades, the advances made in the improvement of pediatric outcomes were limited, due to the existence of gaps between the coverage and quality of the care delivered at primary health care services⁽²⁾.

To overcome these gaps, in Brazil, the Program for Integral Child Health Care (PAISC) established the monitoring of primary health care actions after the 1988 constitution through the use of the Child Card (CC)⁽³⁾, later replaced by the Child Health Handbook (CSC), a legal instrument for children that is essential for health surveillance up to the age of nine years. It contains relevant information and orientations for integral care. Its distribution across the Brazilian territory is compulsory and free of charge⁽⁴⁾.

The appropriate use of the CSC permits the family's appropriation of the tool, whose potential compliance and co-accountability for the care developed positively influences the reduction of the childhood morbidity and mortality⁽⁵⁾. In addition, it allows the professionals and relatives to identify any change in the child's growth and development early. Therefore, it is characterized as an instrument for longitudinal monitoring and health education, which can be of help in integral child health care⁽⁶⁾.

Some studies⁽⁷⁻⁸⁾, however, prove that the work is fragmented with regard to the Family Health Teams' appropriate use of the CSC, as apparently simple actions like weighing, measuring and neuropsychomotor assessment are not always registered and, when they are, they are not accomplished correct and systematically, compromising the efficacy of an important instrument for integral health monitoring in childhood. They did not identify any records in the handbook either concerning the procedures followed during the childcare consultation⁽⁹⁾.

In view of the importance of CSC as a tool for child health surveillance and the need to investigate the professionals' registering of information, in line with recommendations by the Brazilian Health Department, the objective in this study is to analyze the registering of growth and development surveillance data for children under one year of age in the Child Health Handbook.

METHOD

Cross-sectional study with quantitative approach, undertaken between December 2012 and March 2013 at Family Health Services in Health District III (DS-III), in the city of João Pessoa - Paraíba, in the Brazilian Northeast, whose primary health care network consists of 180 Family Health Teams, distributed across five Health Districts, responsible for health care delivery to 568,082 people.

At the time of the data collection, 53 Family Health Teams were active in DS-III, responsible for the coverage of 90.5% of the families in this area. Sixteen were characterized as isolated services, with only one team, and nine were integrated services, joining three to four teams in the same physical and organizational structure.

The study population consisted of children under one year of age attended at the Family Health Services (USF), represented by their health handbooks. Children up to one year of age and their respective health handbooks were included in the sample. Children not registered at the Isolated USF of DS-III, whose mother had not brought the handbook at the time of the data collection and children who sporadically used the health service were excluded.

To compose the study sample, the number of children registered at the isolated USF was considered, corresponding to 553 children in July 2012. The calculation of the sample resulted in 228 CSC, with a

tolerable risk of error of 5% and a 95% confidence interval. To select the sample, the non-probabilistic sampling method by accessibility was used. The data were collected when the mothers attended the USF. At the time of the data collection, one health service was closed for renovation, resulting in a final sample of 116 CSC.

To collect the data, a form was used for the direct verification of the records in the CSC, including the correct completion of the Head Circumference (HC), Weight (W), Length (L) and Body Mass Index (BMI) curves and of the neuropsychomotor development surveillance table.

To assess the completion of the CSC, the orientations in the Brazilian Health Department's Manual for the Use of the Child Health Handbook⁽²⁾ were used for reference. Records in compliance with the Health Department criteria were considered appropriate, while items for which the Health Department had no defined criteria were simply considered as completed or not completed.

As regards the data in the growth curves, as least one record of anthropometric measures (HC, W, W/H and BMI) was admitted, with a maximum interval of three months, according to the minimal monitoring calendar recommended by the Health Department, that is, at least seven childcare consultations up to the age of one year. Concerning the assessment of the neuropsychomotor development, the presence of any record of the development benchmarks for the age range in the CSC was assessed.

The data were typed in Excel version 2010 and analyzed based on the software Statistical Package for the Social Sciences (SPSS) version 20.0 for Windows. The study involved descriptive statistics, with absolute and relative frequencies of the variables, and possible associations among the variables, the child's age and the number of consultations were studied, using the chi-squared test for a 2x2 contingency table. When less than five frequencies were observed, Fisher's exact test was considered.

Approval for the study was obtained from the Research Ethics Committee of the Health Sciences Center at Universidade Federal da Paraíba, under protocol 0096/12. The children's mothers/responsible caregivers received information on the research objectives and methods and freely signed the informed consent term.

RESULTS

The study evidences that the completion of the data was precarious, as none of the CSC contained all items properly registered, while none of the handbooks contained records of oral health procedures and the number of the SUS card.

Among the 116 handbooks investigated, 71 (61.2%) children were between zero and six months old, suggested greater care for children in the first six months of life. According to the records, 107 (92.2%) children underwent the neonatal screening test. Seven (6%) CSC contained information on prenatal care, but data on the type and place of birth were more significant, with 42 (36.2%) and 61 (52.6%), respectively.

As regards the birth data, the completion percentage of the weight at birth was 106 (91.4%), which was not the case for actions related to the "First Integral Health Week" and the monitoring of the infant at the health service, with only one (0.9%) record in the handbook (Table 1).

Table 1 – Frequency of records assessed in the Child Health Handbooks. João Pessoa, PB, Brazil, 2013 (continues)

Variables		n	%
Children			
Children's age	0 to 6 months	71	61.2
	7 to 12 months	45	38.8
Sex	Female	55	47.4
	Male	61	52.6
Data identification at CSC			

Name of child	Yes	101	87.1
	No	15	12.9
Date of birth	Yes	116	100
	No	-	-
Name of the parents	Yes	108	93.1
	No	8	6.9
No. of the patient history record	Yes	14	12.1
	No	102	87.9
No. of live birth declaration	Yes	54	46.6
	No	62	53.4
No. of SUS card	Yes	-	-
	No	116	100
Prenatal data	Yes	7	6
	No	109	94
Birth and postpartum data			
Place of birth	Yes	61	52.6
	No	55	47.4
Type of birth	Yes	42	36.2
	No	74	63.8
Infant			
Weight at birth	Yes	106	91.4
	No	10	8.6
Length at birth	Yes	104	89.7
	No	12	10.3
Head circumference	Yes	102	87.9
	No	14	12.1
APGAR index	Yes	102	87.9
	No	14	12.1
Heel lance test	Yes	107	92.2
	No	9	7.8
Oral health procedures	Yes	-	-
	No	116	100
Records on Clinical Problems	Yes	2	1.7
	No	114	98.3
Records on First Week	Yes	1	0.9
	No	115	99.1
Records on consultations	One to six	85	73.3
	Seven or more	10	8.6
	None	21	18.1

In Table 2, the shortages in the anthropometric assessment records can be observed, as only 40 (34.5%) handbooks contained records in the weight-for-age curve in accordance with the Health Department recommendations. Similarly, only 22 (19%) handbooks contained length-for-age records. As for the Head Circumference, 66 (56.9%) records did not comply with the requisites to be considered appropriate and, in 113 (97.4%) handbooks, no BMI records were found. As regards the child neuropsychomotor development, in 36 (31%) handbooks, only some developmental benchmark for the age range was registered.

Table 2 – Frequency of child growth and development registers in Child Health Handbooks. João Pessoa, PB, Brazil, 2013

Variables	n	%
Data on Child Development		
Yes	36	31
No	80	69
Head Circumference		
Yes	50	43.1
No	66	56.9
Records in Weight/Age graph		
Yes	40	34.5
No	76	65.5
Records in Length/Age graph		
Yes	22	19
No	94	81
Records of BMI in graph		
Yes	3	2.6
No	113	97.4

In this study, a statistically significant association was found between the child's age and the frequency of consultations, p= 0.000, as the number of consultations was considerably higher in children under six months of age. Nevertheless, despite the higher frequency of consultations in this age range, the number of anthropometric assessment records was inappropriate, in view of the statistically significant relation between the drop in the number of correct anthropometric records in children who had up to six consultations (Table 3).

Table 3 – Relation between number of consultations and age and anthropometric data variables of the children in the Child Health Handbook. João Pessoa, Paraíba, Brazil, 2013 (n=95)

		Consultations			
	Between	Between 1 and 6*		7 or more	
	n	%	n	%	p-value
Age of the children					
0 – 6 months	50	58,8	-	-	0,000**
7 – 12 months	35	41,2	10	100	-
Anthropometric data					
Correct	11	12,9	7	70	-
Incorrect	74	87,1	3	30	0,000**

^{*}The Ministry of Health recommends that seven or more consultations are considered an ideal number for children of up to one year of age.

DISCUSSION

The Child Health Handbook is a fundamental tool for child growth and development surveillance. This study, however, reveals weaknesses in the information records, even before the child's birth, as the prenatal care data were not registered in most of the handbooks. This can directly affect the infants' health, as the lack of records can compromise the communication among the professionals accompanying the mothers and

^{**} Fisher's Exact Test – significant results, p < 0.05.

monitoring the child in childcare.

The prenatal care data should be registered in all handbooks, as the mothers' exposure to some substances should be informed and registered, as these can result in abnormalities in the children⁽¹⁰⁾.

The "First Integral Health Week", an action recommended by the Brazilian Health Department in the Agenda of Commitments for Integral Child Health and the Reduction of Child Mortality⁽¹¹⁾, is a strategy that prioritizes woman's and infant's health care at the primary health care services, with a view to the promotion of healthcare and the identification of health risks for the children⁽¹²⁾, as well as the clarification of doubts and the correction of unsuitable practices by the mother/family.

Despite its importance for the reduction of childhood morbidity and mortality, the theme has been discussed neither in studies on CSC, nor in research on the professionals' registers. This can result in deficient orientations of the mothers for this strategy while still in prenatal care. This theme is considered relevant as the low registration index of these actions in the handbooks characterizes the discontinuity of care, compromising the postpartum women's use of the health service at a time of great demands deriving from the postpartum period.

In line with other studies, the weight at birth was registered satisfactorily^(7,13). This can be justified by the fact that this is one of the most required data for infants, by the family as well as the professionals; for the latter, the weight at birth is a fundamental piece of information, as some diseases affecting adults are related to intrauterine growth and development changes, such as cardiovascular, metabolic and endocrine diseases in adult life⁽¹⁴⁾.

One noteworthy finding is the increased recording of the APGAR score, mainly when compared to the results found in other Brazilian studies, which describe that this score is not registered in about 40% of the handbooks^(7,13). The APGAR test is an important indicator of the infant's physical condition, applied at the first, fifth and tenth minute after birth⁽¹⁵⁾. It is a simple and very important method to monitor the child's health, as the records of this information allow the health professionals to identify some problem at birth.

One information that causes concern is the lack of records on oral health procedures, although these orientations are recommended to monitor the child⁽¹⁶⁾. It is not known whether these actions are not part of the multiprofessional team's routine or whether the professionals perform but do not register them.

The panorama of oral health problems is persistent in many communities around the world, especially among poorer groups in developed and developing countries like Brazil. The behavioral and socio-environmental factors involving these problems are evidenced in epidemiological surveys, which reveal that the global burden of oral conditions in 1990-2010 affected about 3.9 billion people all over the world. Dental caries, for example, remains the most concerning condition in industrialized countries, affecting about 90% of children and the large majority of the adults⁽¹⁷⁾. Thus, the absence of these records and orientations for the mothers demonstrate the lack of attention to these problems, which make it unfeasible to monitor important benchmarks, such as dental eruption, as well as the prevention of caries and other oral diseases compromising child health.

As for the records of neuropsychomotor developmental benchmarks, the data appointed deficiencies in the completion, with missing notes in a considerable number of handbooks. These data are in accordance with another study that presented similar results, compromising child health surveillance⁽⁸⁾.

In line with this aspect, studies^(6,18) affirm that this reality has an impact on the shortage of child development surveillance, limiting the possibility of preventing and detecting any developmental delays early, and therefore limiting any intervention in a timely manner. This attitude goes against the Ministry of Health's proposals to guarantee integral child health care, whose monitoring should be cautious and continuous, in view of the intense neuropsychomotor processes that occur over a short period and the negative repercussions for life in case of developmental changes. Nevertheless, to promote healthy development, health education and the encouragement of child neuropsychomotor development stimuli in the home context are fundamental⁽¹⁹⁾.

Among the anthropometric data, it was identified that the head circumference and weight curve stood out in terms of completion. This leads us to infer that the professionals may be engaging further in the early detection of developmental changes and in the identification of associated factors, with a view to preventing deficiencies in adult life⁽²⁰⁾. These findings diverge from the findings in another study on the theme, in which

the weight-for-age curve was the most used when compared to the head circumference⁽²¹⁾.

As for the length for age, a low percentage of completion was identified and the bMI graph was rarely used, a situation similar to other studies^(8,21). This lack of records is preoccupying, suggesting that the health professionals are not valuing the child growth monitoring.

A correct assessment of children's growth should cover records of each weight-height benchmark, in order to anticipate the early identification of changes and permit timely intervention. Nevertheless, the implementation of important specific actions to monitor the children's growth is limited, without integral child monitoring and, consequently, without important growth surveillance records in the CSC⁽²²⁾.

The statistically significant association between the child's age and the frequency of consultations (p=0.000) in the first six months of life suggests that the professionals are more cautious in monitoring the children during the first six months, reducing this monitoring in accordance with the child's growth. These findings are in line with the Health Department's recommendations, which indicate seven consultations in the first year of life. On the opposite, a study⁽²³⁾ in another Northeastern state differs from these results, as the percentage records for consultations involving children under six months of age is still low(38.6%).

The results also reveal a statistically significant association between the anthropometric records and the number of consultations (p=0.000), indicating a higher percentage of incorrect records among the children who had between one and six consultations, among which we can highlight children under six months of life with a higher percentage of appropriate consultations for their age. This can be related to the fact that, in this phase, the growth and development is segmented in smaller intervals, in view of the singularities in the speed of the infant's growth, demanding a detailed look to identify factors that can interfere in this process.

Nevertheless, the increased frequency of the consultations is possibly associated with the increased work demand, which can compromise the effectiveness of the records made during the consultations⁽²⁴⁾. This reality is a source of concern as, due to the fact that the number of consultations is an indicator of child growth and development surveillance, existing gaps in the records of these data made in the handbook compromise the health professionals and the mother and/or caregiver's monitoring of the child.

Departing from the premise that the records in the handbook permit the communication among the health professionals and relatives and among health professionals from different services, the articulation among the team members and the family members' valuation of this document should gain intensity, with a view to putting in practice its fundamental role in the surveillance of child growth and development⁽²⁵⁾.

The main limitation in this study is related to the age range chosen for the sample, which did not reveal the reality of the handbooks of all children who use the services that participated in the study.

CONCLUSION

Health information is fundamental for the continuity of care. Against this assertion, however, these study results evidence weaknesses in the registering of data in the Child Health Handbook during the first year of life. Thus, the handbook cannot be used as a tool for dialogue between family members and professionals, nor will the notes be shared among professionals at the different care levels. This situation marks a strong rupture in the line of care for the sake of integral child health care and child growth and development surveillance.

We hope that these research results and the reflections made contribute for the health professionals to reflect on their work process concerning the valuation of the Child Health Handbook as a fundamental tool for child health promotion. In addition, it is important for the managers to acknowledge the need to train the health professionals in child health care as a way to qualify the care for children under one year of age in Primary Health Care.

Further studies are needed to evidence the reasons why the professionals do not register the data correctly in the handbook, in accordance with the recommendations of the Brazilian Health Department.

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