



EPIDEMIOLOGICAL PROFILE OF PEDIATRIC PATIENTS HOSPITALIZED IN A SMALL HOSPITAL IN THE BRAZILIAN NORTHEAST

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ARTICLE INFO

Article History:

Received 15th March, 2018

Received in revised form

20th April, 2018

Accepted 27th May, 2018

Published online 30th June, 2018

Key Words:

Hospitalization. Child Health. Medicine, Hospitalization, Pediatric Assistance; Root canal irrigation.

ABSTRACT

The objective of this study was to identify the characteristics and the profile of pediatric hospitalizations in hospitals of the public health system in the Northeast of Brazil. A retrospective study was carried out, consisting of 82 children who were hospitalized in a small public hospital in the Brazilian northeast. It was found that 52.4% of the children were female, while 47.5% were male. It was observed that 100% of the interviewees were of the brown color, where 56% lived in the rural area and 44% lived in the urban area. Among the diseases, the most prevalent was pneumonia with 39.02%, followed by the asthmatic crisis with 23.17%. Regarding evolution, it was observed that 88% of children evolved with cure, 5% were transferred and 7% were discharged at the request of parents or guardians. Knowledge of the profile of hospitalized children can be useful in the institutional programming related to the adequate care strategy of this population, in addition to contributing to improve knowledge about the epidemiological and administrative aspects of the hospital service, as well as the implementation of preventive actions and measures, to management, treatment and follow-up of children.

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Citation: Maria Jamily Tavares Leal Vidal, Horst Naconecy de Souza, Hérika Maria Filgueira Costa, Lorena de Sousa Cunha, Bruno Frota Amora Silva, 2018. "Epidemiological profile of pediatric patients hospitalized in a small hospital in the Brazilian Northeast", *international Journal of Development Research*, 8, (06), 21181-21184.

INTRODUCTION

During the first years of life, the child experiences a series of experiences in their family and school environment that may favor the appearance of behavioral and health problems,

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leading to hospital admissions (Borsa, Nunes, 2011, Silva *et al.*, 2017). In the developmental period, the child is curious, restless, inexperienced, exploitative, active and unable to identify and assess the danger, leading to a higher prevalence of domestic accidents including burns (VIANA *et al.* MORAES *et al.*, 2014). In most cases the infant needs hospitalization in specialized centers, usually for a long time, increasing the hospital cost for the treatment that requires

numerous invasive interventions and follow-up for rehabilitation of the lesion after discharge, pediatric hospitalizations may occur again (MACHADO *et al.*, 2009). The profile of infant morbidity has been changing from nutritional diseases to respiratory diseases, mainly due to advances in environmental health and basic sanitation programs. The study of these factors allows a more in-depth knowledge in order to guarantee better child care (SILVA; TEIXEIRA *et al.*, 2016). The profile of morbidity and mortality in childhood and adolescence has been undergoing a profound transition process. In Brazil, as in other developing countries, pediatric hospital care until a few years ago was directed at the treatment of acute diseases such as diarrhea, verminoses, respiratory diseases, and other infectious diseases in general associated with varying levels of malnutrition (ROCHA *et al.*, 1997). Specifically in relation to hospital care, we emphasize that the availability of information, even in the field of scientific production, about the profile and the main demands of pediatric hospitalizations, is still scarce. The results found in researches already performed are insufficient and need to be improved, in order to adapt health policies to the new profile of child and adolescent illness, mainly because hospital admissions are very expensive (DUARTE *et al.*, 2012). The hospital is a medium-level or high complexity level of care, and is also considered the most expensive part of the Health System. On the administrative use of hospital statistics in service planning (LEBRÃO, 1997). The hospitalization of the child, for the most part, represents a complex problem in the family structure, besides implying a financial cost to the health system, both public and private. The period in which the child is hospitalized, usually accompanied by the mother, may mean the abandonment of the home and the other children by the mother, leading to various family and social implications. Based on these premises and associated with public policies in attention to the health of the ineffective children and shortage of publications with this theme in the Brazilian northeast this work has as objective of this study was to identify the characteristics and the profile of pediatric hospitalizations in hospitals of the public health system in the Northeast of Brazil.

MATERIALS AND METHODS

A descriptive cross-sectional study with a quantitative approach was carried out in a small hospital in the municipality of Cariri Cearense, Ceará, Brazil, from May to April 2012. According to Gil (2002), the descriptive research has as main objective the description of the characteristics of a certain population or phenomenon or, therefore, the establishment of relations between variables. This same author states: "Descriptive research is, along with the exploratory ones, that social researchers usually do with practical action." The data were collected in the Patient Record Sector of the Hospital, using the AIH's, acquiring the following information: sex, age, zone, race / color, diagnosis, evolution and use of antibiotics. Data collection was carried out from May 2011 to April 2012. For access to medical records, the consent of the administrative and clinical directors of the hospital health service was obtained previously. The data collected were processed in the Excel statistical program for the construction of databases referring to the quantitative variables and expressed in figures and tables with the help of the Excel for Windows version 2000 worksheet. The normality of the data was evaluated using the Shapiro-Wilk test. Data analysis was performed using the Graph Pad Prism program, version 5.0 for statistical analysis, and the Microsoft Office Excel 2007

program for the production of graphs and tables. The analysis considered statistical significance values of $p < 0.05$. The chi-square test (χ^2) were applied to verify the association between the variables studied, at a significance level of 5%. The Graph Pad Prism version 5.0 application was used as statistical instrument. In compliance with ethical recommendations, this study followed all the norms established by Resolution 466/12 of the National Health Council (BRAZIL, 2012). This research does not have any conflict of interests and follows the precepts of Resolution 466/12 of the National Health Council, which regulates research involving human beings and Declaration of Helsinki (BRAZIL, 2012).

RESULTS

In the study period, 82 hospitalizations of children were identified. Of the 82 pediatric admissions from May 2011 to April 2012, 43 children were female (52.4%), 46 resided in the rural area of the city under study (56%), in the sample distribution by age group, 66 children were between 0 and 5 years old.

Table 1. Socio-demographic data of children hospitalized in the Brazilian Northeast municipality

	n	%
SEX		
Men	39	47.5
Women	43	52.4
Color		
Brown	82	100
Zone		
Rural	46	56
Urban	36	44

It was found that 52.4% of the children were female, while 47.5% were male. It was observed that 100% of the interviewees were of the brown color, where 56% lived in the rural area and 44% lived in the urban area. The mean age of the male gender was 3.5 ± 0.39 years, being 3.949 ± 0.47 years for the female gender and 3.1 ± 0.39 years for the men, and no statistically significant difference was found (0.1987) (Table 1)

Table 2. Distribution of hospitalizations by sex. Mixed Health Unit of Brazil

Sex	Mean \pm DP	Median	Max	Min	p-value
Women	3.159 ± 0.39	2	01	11	0,1987
Men	3.949 ± 0.47	3	01	10	

Values represent the mean \pm standard error of the mean; Student's t-test.

Table 3. Main Diagnoses of children hospitalized in a city in northeastern Brazil.

Diagnoses	n	%
Pneumonia	32	39.02
Asthmatic crisis	19	23.17
Infectious Gastroenteritis	15	18.29
Food poisoning and dehydration	3	3.66
Streptococcus	2	2.43
Staphylococcal	2	2.43
Bacterial gastroenteritis	2	2.43
Bronchopneumonia	2	2.43
Gastritis	1	1.21
Laryngeal stricture	1	1.21
Acute diffuse nephritis glomerulus	1	1.21
Neonatal jaundice	1	1.21
Urinary infection	1	1.21

Among the diseases the most prevalent was pneumonia with 39.02% of the chaos following the asthmatic crisis with

23.17%, Infectious Gastroenteritis 18, 29% among other causes observed in Table 3. He observed that 88% of the children evolved with cure, 5% as transferred 7% were discharged at the request of parents or guardians.

Table 4. Evolution of the pediatric patients attended

Clinical evolution	n	%
Cure	72	88
Transfer	4	5
High on request	6	7

It was observed that 71.42% of the patients who used antibiotics, of these 60.71% were in the age group between 0 and 5 years. In this study, it was verified that there is no statistically significant difference between the use of antibiotics and belongs to the age group (0.0886) (Table 3). As for the age groups, we noticed that the most frequent was 0 to 5 years, corresponding to a total of 82 hospitalizations, as shown in Table 5.

Table 5. Distribution of the participants according to the antibiotic therapy performed

Age	Antibiotic therapy.				X ²	p-value	Odd ratio
	Yes n	%	No n	%			
0 – 5 years	51	60,71	17	20,25	2.899	0,0886	2,644
6 – 12 years	9	10,71	7	8,33			

* Chi-square test. Significant values when $p < 0.05$.

DISCUSSION

Despite the changes observed in recent years in sickness and in childhood mortality with marked reduction of hospitalizations due to infectious diseases, there are few studies that present the clinical and demographic profile of pediatric hospitalizations in our country (DUARTE *et al.*, 2012). Children are exposed to various types of pathogens since there is no well-formed immune system because it is even in the maturation stage, which justifies the knowledge of the profile of pediatric hospitalizations with the objective of taking preventive measures to prevent the onset of prevalent childhood diseases such as chickenpox, rubella, parotitis and others. Congenital malformations are a major challenge for health professionals since children with this type of pathology need more hospital care. Congenital malformations represent the second leading cause of mortality in children under one year of age, and congenital heart disease is the most frequent and high mortality in the first year of life (VICTORIA *et al.*, 2011; AMORIM *et al.*, 2006, CATARINO *et al.*, 2017). Regarding the socio-demographic profile, our studies corroborate studies carried out in southern Brazil, where the authors found a predominance of males, where 50% of the patients were younger than 1.9 years of age and 30% of the patients had between 3 and 6 years of age with mean age of 3.1 ± 3.8 years without significant difference between the sexes (VERAS *et al.*, 2010). In our studies, respiratory diseases were the most frequent followed by gastrointestinal conditions. Researchers conducted a systematic review of hospital admissions in children found that pneumonia and asthma appeared among the most sensitive causes. The respiratory diseases, which were the main cause among general hospitalizations, or to gastroenteritis, parasitic diseases, were also reported as preventable causes of hospitalization with expressive frequency (PEDRAZA *et al.*, 2017).

Bronchial obstructive syndrome and pneumonia are very common causes of children's consultations in primary care and emergency and specialized services, such as many other respiratory diseases (OLIVEIRA *et al.*, 2011). In Brazil, some studies have already described the impact of respiratory diseases in pediatric hospitalization units (VERAS *et al.*, 2010). The Brazilian Ministry of Health states that pneumonia is the main cause of infant mortality among respiratory diseases and that its early identification and treatment is fundamental to disease control (BRAZIL, 1993). Hospital admissions for respiratory diseases are among the leading causes of hospitalization in developing countries. The costs involved, school absenteeism and worsening quality of life have a significant impact on public health worldwide. Rates of hospitalization for respiratory conditions show considerable variation among published studies. The annual worldwide incidence of pneumonia in children under five is currently estimated at around 150 million cases, of which 7-13% require hospital care. Studies conducted in the city of São Paulo, Brazil, when evaluating the hospitalizations of children aged 0 to 5 years hospitalized for respiratory infections in a large hospital in the south of São Paulo in the period from 2008 to 2009, the data showed that the respiratory diseases affected differently the age groups and the gender of the children, occurring at distinct times of the year (OLIVEIRA *et al.*, 2011). In our studies the majority of children evolved to cure, thanks to the quality of hospital care. We emphasize that primary care relies on technologies of low complexity and high effectiveness, such as oral rehydration therapy and oral rotavirus vaccine, capable of preventing gastroenteritis and its complications (VAZQUEZ *et al.*, 2011). In Brazil, the vaccination campaigns follow an annual calendar in each phase of life systematized through public policies elaborated by the Brazilian government, being the secret to low incidence of diseases prevalent in childhood. Moreira and Goldani (2010), in a recent analysis on the situation of children's health in our country, point to the need for new strategies, related to child care and the training of new pediatricians and researchers, human being in growth and development, with all its specificities.

Conclusion

It was found that there is a high incidence of respiratory diseases in the studied children and this type of disease affects the younger children. Thus, we can observe that the hospital statistics can contribute to improve the knowledge about the epidemiological and administrative aspects of this service of pediatric hospitalizations. It was verified that the information of the present study contributed to a better knowledge of the main causes of hospitalizations in children in a public hospital accredited by public health in northeastern Brazil. From the public health point of view, preventive actions and measures such as vaccination, intensification of primary care, outpatient treatment, population orientation and sex education need to be reinforced in order to reduce morbidity and mortality rates and hospitalizations in childhood. The causes of hospitalization demonstrate the need to reinforce public health campaigns capable of accommodating patients mainly affected by respiratory and gastrointestinal diseases.

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