Nursing diagnoses in hospitalized children

Diagnósticos de enfermagem em crianças hospitalizadas

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Objective: to describe the frequency of nursing diagnoses in hospitalized children. **Methods**: this is a cross-sectional study carried out in a hospital for children, from 738 medical records. Data analysis was based on descriptive statistics. **Results**: a frequency of 2,100 nursing diagnoses was identified, distributed in 15 diagnostic concepts, six domains, and 12 classes, according to NANDA-I Taxonomy II. The most prevalent diagnoses were: ineffective respiratory pattern (18.7%), hyperthermia (15.2%), impaired sleep pattern (11.1%), unbalanced nutrition: less than body needs (10.8%), fear (9.3%), acute pain (7.1%) and diarrhea (6.7%). **Conclusion**: five nursing diagnoses were described in hospitalized children: "ineffective respiratory pattern", "hyperthermia", "diarrhea", "fear" and "acute pain". The first three diagnoses are closely related to the conditions that determine the major causes of hospitalization in childhood: acute respiratory infections and gastroenteritis.
Descriptors: Nursing Process; Child, Hospitalized; Nursing Diagnosis.

Objetivo: descrever a frequência dos diagnósticos de enfermagem em crianças hospitalizadas. **Métodos:** estudo transversal, realizado em uma unidade hospitalar infantil, a partir de 738 prontuários. A análise dos dados baseou-se na estatística descritiva. **Resultados:** identificou-se frequência de 2.100 diagnósticos de enfermagem distribuídos em 15 conceitos de diagnósticos, seis domínios e 12 classes, conforme a Taxonomia II da NANDA-I. Os mais prevalentes foram: padrão respiratório ineficaz (18,7%), hipertermia (15,2%), padrão de sono prejudicado (11,1%), nutrição desequilibrada: menor do que as necessidades corporais (10,8%), medo (9,3%), dor aguda (7,1%) e diarreia (6,7%). **Conclusão:** foram descritos cinco diagnósticos de enfermagem mais incidentes em crianças hospitalizadas "padrão respiratório ineficaz", "hipertermia", "diarreia" "medo" e "dor aguda". Destes, os três primeiros apresentam estreita relação com as condições que determinam as maiores causas de hospitalização na infância: infecções respiratórias agudas e gastroenterites.
Descritores: Processo de Enfermagem; Criança Hospitalizada; Diagnóstico de enfermagem.

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Introduction

The nursing diagnosis consists of the clinical judgment of the nurse on actual or potential human responses to health problems or life processes of an individual, family or community and it composes one of the stages of the nursing process, providing the basis for the systematization of care in nursing, and the identification of patient problems and selection of interventions that the nurse is responsible[1-2].

The nursing process is part of the scientific paradigm of knowledge production and, therefore, it favors the recognition and consolidation of nursing as a science, since it allows the planning of nursing actions[2]. In this context, the nursing diagnosis acts as a guide for the planning and implementation of care and as a source of specific knowledge of the profession, favoring the processes of teaching, research, and care in nursing, in different situations of child care[3].

The identification of nursing diagnoses in specific patients enables to determine the care needs of the population, sensitive to nursing action, highlighting the contribution of the profession to the solution, relief, and prevention of health problems. In this sense, research has been carried out aiming to identify nursing diagnoses among hospitalized children and with specific health conditions, which contribute to the consolidation of the body of knowledge related to pediatric nursing and provide evidence for the construction of protocols, registration and planning care tools[4-5].

Regarding the hospitalized child, the identification of the nursing diagnoses will show the human responses to the disease and hospitalization, pointing out the main needs of care, enabling the planning of nursing actions in response to the most prevalent demands, promoting the care of nursing based on scientific evidence. This study aimed to describe the frequency of nursing diagnoses in hospitalized children.

Methods

This is a cross-sectional study carried out in a municipal children's hospital located in the municipality of Juazeiro do Norte, located in the southern region of Ceará. This hospital institution has the capacity for 28 pediatric beds and an average occupation of 15 to 20 beds/day.

Data were collected between August and October 2015, obtained from the medical records of hospitalized children between January and October 2014, based on the following inclusion criteria: records that presented the forms related to the Nursing Care Systematization duly completed of children with less than 10 years old, considering the higher prevalence of hospitalizations up to this age group in the institution under study. Unreadable medical records were excluded, enabling to confirm the eligibility criteria for this study.

A total of 753 records of hospitalized children were identified in the period described. There were 15 excluded because they did not meet the inclusion criteria, and at the end, 738 children were included in the study sample.

The instrument used to collect the data was developed specifically for this purpose, and a pilot test was performed at the institution, whose medical records used for this purpose were excluded from the study. There was no need for adjustments to the instrument tested. Sociodemographic and clinical variables, the age of the child and the main caregiver, education level, origin, medical diagnosis, organic system affected by the disease and the vaccination status of the child were investigated. The nursing diagnoses by domains and classes of NANDA-I Taxonomy II were considered when the literature points out as being more prevalent in hospitalized children[6-7].

After data collection, a database was prepared using the Microsoft Office Excel 2007 program, which

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allowed the selection, coding, and tabulation of data related to nursing diagnoses. Data analysis was performed through descriptive statistics, with frequency distribution and absolute and relative percentages to designate the occurrence of nursing diagnoses, as well as to quantify the sociodemographic and clinical profile of the children. The chi-square test was used, assuming a significance level of 5% (p<0.05). A margin of error of 5% was adopted, with a confidence interval of 95%.

The study complied with the formal requirements contained in the national and international regulatory standards for research involving human beings.

Results

There were 407 (55.1%) males, and the age group between 28 days and 23 months and 29 days had a higher prevalence in the hospitalizations with a total of 425 (57.6%) children, followed by the age group of two six years old with 202 (27.4%). The mother was referred as the main caregiver of the child, followed by the grandmother in almost all situations with 732 (99.6%) and most of them were between 24 and 60 years old, 353 (47.8%), with only incomplete elementary school being 192 (26.0%). However, many medical records did not present information on maternal education with 211 (28.6%).

A frequency of 2,100 nursing diagnoses was identified in 15 diagnostic titles, according to NANDA-I Taxonomy II, classified into six domains and 12 classes. The most prevalent nursing diagnoses were: ineffective respiratory pattern, hyperthermia, impaired sleep pattern, imbalanced nutrition: less than bodily needs, fear, acute pain, and diarrhea. As shown in Table 1, there is statistical significance for all ratios of nursing diagnoses identified (p<0.05).

Table 1 - Frequency of nursing diagnoses, according to the domain and class of NANDA-I Taxonomy II in hospitalized children

Domain	Class	Nursing diagnoses	f (%)	CI 95,0%	p
Activity/rest	Cardiovascular/pulmonary responses	Ineffective respiratory pattern	392 (18.7)	17.0 – 20.4	<0.001
	Sleep/rest	Impaired sleep pattern	234 (11.1)	9.8 – 12.5	<0.001
	Balance/Energy	Fatigue	13 (0.6)	0.3 – 1.0	<0.001
	Activity/exercicse	Impaired physical mobility	8 (0.4)	0.1 – 0.7	<0.001
Security/Protection	Thermoregulation	Hyperthermia	320 (15.2)	13.7 – 16.8	<0.001
	Infection	Risk of infection	119 (5.7)	4.7 – 6.7	<0.001
	Physical injury	Impaired skin integrity	93 (4.4)	3.6 – 5.4	<0.001
		Ineffective protection	35 (1.7)	1.1 – 2.3	<0.001
Nutrition	Nutrition	Unbalanced nutrition: less than the bodily needs	226 (10.8)	9.4 – 12.0	<0.001
	Hydration	Poor fluid volume	46 (2.2)	1.6 – 2.9	<0.001
		Excessive fluid volume	29 (1.4)	0.94 – 2.0	<0.001
Coping/stress tolerance	Coping reactions	Fear	195 (9.3)	8.0 – 10.6	<0.001
	Physical comfort	Anxiety	100 (4.8)	3.9 – 5.7	<0.001
Confort	Physical comfort	Acute pain	149 (7.1)	6.0 – 8.2	<0.001
Elimination and exchange	Gastrointestinal Function	Diarrhea	141 (6.7)	5.6 – 7.8	<0.001

*Chi-square test of proportion; IC = Confidence Interval

Discussion

The limits of this study were the aspects of the design used. Since it is a cross-sectional study, its results cannot be generalized to different contexts. However, information pertinent to the main care needs of children in a hospital environment with high sample coverage was discussed.

The analysis of the clinical profile of hospitalized children revealed that respiratory diseases (pneumonia, asthma and acute bronchiolitis) and gastroenteritis corresponded to most of the cases identified in this study, considered as important causes of childhood morbidity and mortality in Brazil[8]. Therefore, it was realized that the findings of this research follow the national trend towards health conditions more prevalent in children, responsible for the greater number of hospital admissions in childhood.

Regarding hospital admissions of children, it is necessary to consider that hospitalizations for certain causes, such as respiratory diseases, become an indirect indicator of the resolution of basic health and outpatient care. It is known that the broad coverage and access of the population to quality Primary Health Care services are able to reduce the rates of children's hospitalizations[9].

The use of a standardized language system enables the production of a focused and evidence-based care plan[10-11], as well as promoting documentation and information regarding the contribution of nursing to the process of care of hospitalized children[5].

The most prevalent diagnoses per identified domain will be discussed. In this perspective, the diagnosis "Ineffective respiratory pattern", belonging to the activity/rest domain was the most prevalent in this study, defined as "inspiration and/or expiration that does not provide adequate ventilation". In the context of children hospitalization, it is necessary to consider that this human response is frequently related to diseases of the respiratory system, an important cause of pediatric hospitalization in Brazil, and in this study, the main factor related to this diagnosis was "fatigue of respiratory musculature"[12: 234], present mostly in children with acute respiratory infections.

A similar study also highlighted the high prevalence of "ineffective respiratory pattern"[13] in children during hospitalization, pointing out that this diagnosis should be a priority in nursing care planning, since it directly affects tissue oxygenation, being a vital function, requiring rapid and decisive interventions, based on a careful evaluation of the respiratory function and the manifestations presented by the child. The use of accessory musculature, dyspnea and changes in respiratory rate were the main defining characteristics associated with the diagnosis. Therefore, these conditions must be carefully evaluated by the nursing team.

The diagnosis of nursing "Hypertheria" in the safety/protection domain prevailed in 15.4% of the cases. Being a common condition in children hospitalized and attended in the pediatric emergency room[14], their occurrence in this study was higher in the age group of infants and was mainly related to the presence of infectious focus in the respiratory and gastrointestinal systems. The occurrence of hyperthermia in infants is associated with the greater immaturity of the thermoregulatory system in this age group. It should be noted that the high prevalence of respiratory and gastrointestinal infections in hospitalized children in Brazil reflects the low integration and resolution of basic care services in the country[8-9].

Hyperthermia corresponds to the increase in body temperature due to an imbalance between production and heat dissipation[15]. In children, it can be characterized by irritability, lethargy, tachypnea, tachycardia and other defining characteristics. It may be related to the disease or health condition, as well as trauma, dehydration and an increase in the basal metabolic rate[12].

The "Impaired Sleep Pattern" was present in 11.1% of the sample and there was also a higher prevalence of this condition in infants. The related factor, in all cases identified, was the "environmental barrier"[12], which refers to the child's stay in a non-familiar place, in this case, the hospital. It should be noted that

the sleep pattern is established early in the child's life, so habits, routines, and schedules are essential for the formation of normal rhythms. Fragmented sleep, shift shifts, and separation of the family generate stress and irritability in the child, which justifies the occurrence of the diagnosis in hospitalized children.

The presence of the diagnosis "Unbalanced Nutrition: less than the bodily needs" was justified by the modification of the child's eating habits during hospitalization, which may reduce the stimulus and the desire to eat, besides the pathological condition presented, which can be associated with lack of hungry. In infants, stressors or the pathological condition can result in decreased nursing, chewing or even interest in food and consequent weight loss. The related factor in this study was insufficient food intake[12].

O "Medo", como diagnóstico de enfermagem corresponde a "resposta à ameaça percebida que é conscientemente reconhecida como um perigo"[12:343]. Possui entre suas características definidoras, respostas comportamentais que costumam ser prevalentes na faixa etária de pré-escolares (dois a seis anos), escolares (seis a 10 anos), a exemplo do comportamento de ataque, impulsividade e estado de alerta aumentado. Pelo exposto, supõe-se maior dificuldade dos enfermeiros identificarem o referido diagnóstico em lactentes, fato que pode estar relacionado a não identificação do diagnóstico medo nessa população.

In the stress coping/tolerance domain, the "Fear" and "Anxiety" nursing diagnoses were identified, which are often problems faced by the hospitalization of the child. Fear was the most prevalent problem in the domain under discussion, since it was identified in the records of 195 children who composed the sample (9.3%), yet this finding represents a relatively small number when compared to other studies, for example, which presented "fear" as a human response in 80.0% of hospitalized children[16]. However, this divergence may be related to the age range of hospitalized children, since, in this study, there was a higher prevalence of infants and there is greater difficulty in determining defining characteristics of the diagnosis

during this phase of child development.

"Fear" as a nursing diagnosis corresponds to "response to the perceived threat that is consciously recognized as a danger"[12:343]. It has, among its defining characteristics, behavioral responses that tend to be prevalent in the pre-school (two to six years), schools (six to 10 years), such as attack behavior, impulsiveness, and increased alertness. Therefore, it is more difficult for nurses to identify this diagnosis in infants, a fact that may be related to the non-identification of fear diagnosis in this population.

It should be noted that the "Fear" diagnosis corresponds to a very prevalent human response in hospitalized children, and may have negative impacts on child development, with potential for psychological trauma, and the nursing team needs to plan actions that reduce these impacts, such as the therapeutic toy, a playful tool that favors the understanding of the hospitalization and the procedures performed, allowing the emotional discharge of the child and providing them emotional support to face hospitalization.

Thus, the Federal Nursing Council recently issued a resolution[17], which updates the standard for the use of the therapeutic toy technique by the nursing team to the hospitalized child, highlighting the importance of the nurse's prescription so the nursing team performs the technique in the care of the hospitalized child and family. Also, it should be emphasized that this is a technique in pediatric nursing that must contemplate the stages of the nursing process, ratifying its importance in the context of the systematization of nursing care in pediatrics.

"Acute pain" is a diagnosis classified in the comfort domain and refers to "unpleasant sensory and emotional experience associated with actual or potential tissue injury"[12: 449], being present in 7.1% of the sample studied. In childhood, its main defining characteristic is the expressive behavior evidenced by agitation, groaning and crying as well as verbal reporting, when in older children, aspects identified in this research.

The presence of pain in hospitalized children

is quite frequent and it can be caused by procedures such as venipuncture, collection of exams, dressings or by the pathological process[18], but different prevalence of its occurrence are observed in the studies[6-7], suggesting that the different contexts of care production may determine the higher or lower prevalence of this diagnosis in children.

Thus, there is a need to instrumentalize pediatric services and to enable health professionals to deal adequately with the child's pain during hospitalization. The use of scales for assessing pain in childhood and the use of therapeutic toys should be highlighted among the strategies, with the objective of children experiencing hospitalization and less painful procedures[18-19].

In the elimination and exchange domain, the diagnosis of nursing "Diarrhea" was identified in 141 (6.7%) hospitalized children who composed the sample and it is one of the most important human responses to the occurrence of gastroenteritis in childhood. Childhood diarrhea often occurs in children who have already started adding complementary foods to their diet, besides breast milk, or who are using artificial milk.

The main implications of the diagnosis of "diarrhea" in hospitalized children in the context of the production of nursing care concern the need to monitor intestinal eliminations, including frequency, consistency, volume and color, as well as the constant evaluation of the skin of the region perianal to detect irritations, besides the stimulus to the ingestion of liquids. Sometimes the water balance can be a necessary strategy for the risk of dehydration[6].

However, there has been a reduction in the occurrence of hospitalizations for diarrheal diseases in children in Brazil[20], especially after 2006, when the rotavirus vaccine was implanted in the National Immunization Program. However, the scarcity of access to adequate basic sanitation in the study region is one of the factors limiting the decline of childhood diarrhea, remaining as a condition that leads to the hospitalization of children.

The findings of the study favor the planning of the care in a reasoned way and directed to the most incident needs in the pediatric population. As for implications for clinical practice, the data from this research provide subsidies for the construction of instruments related to the systematization of hospitalized child care, improving the work process and the quality of care of pediatric nursing.

Conclusion

Five more nursing diagnoses were reported in hospitalized children: "ineffective respiratory pattern", "hyperthermia", "diarrhea", "fear" and "acute pain". Of them, the first three diagnoses are closely related to the conditions that determine the major causes of hospitalization in childhood: acute respiratory infections and gastroenteritis.

Collaborations

Lopes TAMC, Monteiro MFV and Damasceno SS contributed to the design and project, analysis and interpretation of data and article writing. Oliveira JD, Oliveira DR and Pinheiro AKB contributed to the analysis and interpretation of the data, relevant critical review of the intellectual content and approval of the end of the version to be published.

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