ORIGINAL ARTICLE

Care delivery to newborns with myelomeningocele according to Roy's adaptation model

ABORDAGEM ASSISTENCIAL AO NEONATO PORTADOR DE MIELOMENINGOCELE SEGUNDO O MODELO DE ADAPTAÇÃO DE ROY

ABORDAJE ASISTENCIAL AL NEONATO PORTADOR DE MIELOMENINGOCELE SEGÚN EL MODELO DE ADAPTACIÓN DE ROY

Eloah de Paula Pessoa Gurgel¹, Karla Maria Carneiro Rolim², Marli Terezinha Gimenez Galvão³, Joselany Áfio Caetano⁴

ABSTRACT

This case study aimed to identify the Nursing diagnoses, addressing physiological aspects according to Roy's Adaptation Theory, of a baby with meningomyelocele hospitalized at a Neonatal Intensive Care Unit (NICU), and to elaborate pertinent nursing actions for these aspects. The study was developed at the NICU of the Maternity Teaching Hospital Assis Chateaubriand, located in Fortaleza-Ceará, Brazil, between December 2007 and March 2008, when a script was used to survey data. During the analysis, the following diagnoses were recognized: ineffective breathing pattern; imbalanced nutrition: less than body requirements; impaired skin integrity; risk for infection and disturbed sensory perception. The use of this theory permitted recognizing that the newborn can produce positive or negative responses to stimuli and that the implemented targets and interventions were important to replace ineffective by adaptive responses.

KEY WORDS

Infant, newborn.
Meningomyelocele.
Adaptation.
Nursing diagnosis.
Nursing care.
Models, nursing.

RESUMO

O objetivo deste estudo de caso foi identificar os diagnósticos de Enfermagem de um bebê portador de mielomeningocele, internado na Unidade de Terapia Intensiva Neonatal (UTIN), abordando os aspectos fisiológicos segundo a Teoria de Adaptação de Roy, e elaborar ações de enfermagem pertinentes a estes aspectos. O estudo foi desenvolvido na UTIN da Maternidade Escola Assis Chateaubriand, na cidade de Fortaleza, Ceará, Brasil, nos meses de dezembro de 2007 a março de 2008, quando foi utilizado um roteiro de levantamento de dados. Na análise, reconheceram-se os diagnósticos: padrão respiratório ineficaz; nutrição desequilibrada: menos do que as necessidades corporais; integridade da pele prejudicada; risco para infecção e percepção sensorial perturbada. A utilização desta teoria permitiu reconhecer que o RN pode desencadear respostas positivas ou negativas mediante estímulos, e que as metas e intervenções implementadas foram importantes para a substituição de respostas ineficazes por respostas adaptativas.

DESCRITORES

Recém-nascido.
Meningomielocele.
Adaptação.
Diagnóstico de enfermagem.
Cuidados de enfermagem.
Modelos de enfermagem.

RESUMEN

El objetivo de este estudio de caso fue identificar los diagnósticos de Enfermería, abordando los aspectos fisiológicos según la Teoría de Adaptación de Roy, de un bebé portador de mielomeningocele, internado en la Unidad de Terapia Intensiva Neonatal (UTIN), y elaborar acciones de enfermería pertinentes a tales aspectos. El estudio fue desarrollado en al UTIN de la Maternidad Escuela Assis Chateubriand, en la ciudad de Fortaleza-Ceará-Brasil, en los mese de diciembre de 2007 a marzo de 2008, momento en el cual fue utilizado un cuestionario para la colecta de datos. En el análisis, se reconocieron los diagnósticos: patrón diagnóstico ineficaz, nutrición desequilibrada (inferior a las necesidades corporales), integridad de la piel afectada, riesgo de infección y percepción sensorial perturbada. La utilización de esta teoría permitió reconocer que el RN puede desencadenar respuestas positivas o negativas a través de estímulos, y que las metas e intervenciones implementadas fueron importantes en la sustitución de respuestas ineficaces por adaptativas.

DESCRIPTORES

Recién nacido. Meningomielocele. Adaptación. Diagnóstico de enfermería. Atención de enfermería. Modelos de enfermería.

Received: 01/22/2009

Approved: 10/15/2009



¹ Master's student, Graduate Nursing Program at *Universidade Federal do Ceará*. Nurse at Neonatal Unit of Teaching Maternity Hospital Assis Chateaubriand, *Universidade Federal do Ceará*. Faculty member, Nursing Program at *Universidade de Fortaleza*. Fortaleza, CE, Brazil. eloahgurgel@yahoo.com.br ² Nurse at Neonatal Unit of Teaching Maternity Hospital Assis Chateaubriand, *Universidade Federal do Ceará*. Faculty member, Nursing Program at *Universidade de Fortaleza*. Fortaleza, CE, Brazil. karlarolim@unifor.br ³ RN, Ph.D. Faculty Member, Nursing Department at *Universidade Federal do Ceará*. Fortaleza, CE, Brazil. marligalvao@gmail.com ⁴ RN, Ph.D. Faculty Member, Nursing Department at *Universidade Federal do Ceará*. Fortaleza, CE, Brazil. joselany@ufc.br



INTRODUCTION

By itself, birth generates expectations and needs for changes, as the transition from intra to extra-uterine life exposes newborn infants (NI) to an atypical environment they need to adapt to. When NI are ill, their ability to adapt and adjust to the extra-uterine environment is altered and easily unbalanced, leading to unstable physiological function and also affecting the infants' neuromotor development, especially in case of malformations.

One type of malformation that is common at the Neonatal Intensive Care Unit of a teaching maternity hospital in Fortaleza, Brazil is myelomeningocele (MMC), a closure defect of the neural tube, when the embryonic neural tube does not close completely. Considered one of the most disabling congenital malformations, there are four types of myelomeningocele: anencephaly, encephalocele, hidden and open spina bifida. The latter two are compatible with prolonged survival, although patients commonly display a range of sequelae, such as paralysis, cutaneous sensitivity disorders, absence of or difficulties for urinary and fecal control, besides musculoskeletal deformities⁽¹⁾.

The estimated number of Brazilian children born with this anomaly is eighthundred, but the true dimension of the problem remains unknown, as there is no comprehensive national survey and available prevalence studies appoint diverging rates⁽²⁾.

A more recent survey by the Latin American Congenital Malformation Collaborative Study (ECLAMC), a reference in Latin America for studies in this area, covering the period from January 2000 till August 2001, found a

mean prevalence rate of 2.4:1,000 births in the five Latin American countries that participated in the research: Argentina, Brazil, Chile, Uruguay and Venezuela. The highest rate was found in Brazil (3.3 per thousand), followed by Argentina (2.6 per thousand) and Uruguay (1.7 per thousand)⁽³⁾.

In daily practice, a large group of children born with MMC is found at the teaching maternity in Fortaleza-CE. From a nursing perspective, care systemization through the nursing process can contribute to improve care to myelomening occle patients.

For nursing care, it is important to use a theoretical model, in this case Roy's Adaptation Model, especially the physiological mode, for NI with MMC, who can have both adaptation and ineffective reactions in the health-illness transition they are going through.

In general, Roy's model comprises five elements: person, the nursing goal, nursing activities, health and the environment. Persons are seen as living adaptation systems, whose behaviors can be classified as adaptation or inefficient reactions. These behaviors derive from regulatory and

cogniscent mechanisms. These mechanisms act in the context of the four adaptation modes, physiological, selfconcept, role function and interdependence. Another element in Roy's model is the nursing goal, that is, the promotion of adaptation reactions towards the four adaptation model, using information about the person's adaptation level and focal, contextual and residual stimuli. Nursing activities are also included, which involve the manipulation of these stimuli to promote adaptation reactions. Health is a process of becoming integrated and capable of achieving the goals of survival, growth, reproduction and control. The environment comprises the person's internal and external stimuli⁽⁴⁾.

As mentioned, the nursing goal is to promote adaptation responses to the four modes Roy proposes, using information about the person's adaptation level and focal, contextual and residual stimuli. In other words, what has immediately confronted the NI with MMC and what other stimuli from the internal and external worlds are exerting negative or positively influence on the situation, whose current effects are not clear. Nursing activities involve the manipulation of these stimuli to promote adaptation responses.

The physiological mode corresponds to basic needs for oxygenation, nutrition, elimination, activity and rest. Its complex processes are associated with the senses, fluid and electrolytes, the neurological and endocryne functions, while the model's four essential elements are the person, environment, health and the nursing goal⁽⁴⁾.

Outlining nursing care for NI with MMC based on Roy's theory is essential in view of the complexity of care delivery to NI with this

illness. At the same time, it helps to understand not only biological needs, but also needs determined by environmental, psychosocial and family factors, often associated with the infant's physical condition.

This research aims to identify the Nursing diagnoses, addressing physiological aspects of NI with MMC hospitalized at an NICU, focusing on the adaptation degree according to Roy; and to elaborate nursing actions for these diagnoses in case of maladaptation situations.

In view of the above, this study is relevant because it contributes to neonatal nursing practice, through the information it offers in nursing care to NI with MMC, and also because it allows for improvements in care delivery to these clients.

METHOD

From a nursing

perspective, care

systemization through

the nursing process

can contribute to

improve care to

myelomeningocele

patients.

This is a case study, considered as detailed description of one single case or some cases, giving a complete picture of an experience⁽⁵⁾. The study involved one baby hospital-



ized at the NICU of the Teaching Maternity Hospital (MEAC) in Fortaleza-Ceará.

To select the NI, the following criteria were set: existence of congenital malformation, being hospitalized at the Intensive Care Unit and remaining under intensive care for more than 48 hours, in order to analyze adaptation forms during this process: relatives' written acceptance to participate in the study, in compliance with the ethical guidelines of Resolution 196/96⁽⁶⁾, and approval by the Research Ethics Committee at the research institution, under process No. 79/07. Data were collected between November and December 2008, during the infant's hospitalization period, when a script was used to survey data, founded on Roy's Adaptation Theory and elaborated based on some authors' model⁽⁷⁾. As established, the nursing process by Roy and Andrews⁽⁴⁾ highlights six phases: (a) assessment of behaviour; (b) assessment of stimuli; (c) nursing diagnosis; (d) goal setting; (e) intervention; (f) evaluation.

In the first phase, the script was used to assess behaviors and stimuli. From that point onwards, the Nursing diagnoses were established, based on the North American Nursing Diagnoses Association's Taxonomy II⁽⁸⁾. Next, goals and interventions were determined to promote a better adaptation response for the NI. In view of the goal of acting on identified ineffective behaviors, the nursing interventions and results were defined according to the Nursing Intervention Classification (NIC) and the Nursing Outcome Classification (NOC)⁽⁹⁻¹⁰⁾.

The final step was the assessment of the interventions. After data collection, the NI's reactions and the stimuli that generated these responses were assessed. This process was shown on a table with the following data: the physiological components of Roy's adaptation model, the Nursing diagnoses, besides the Nursing Outcomes (NOC) and Nursing Interventions (NIC). Finally, in line with data in the table, the nursing process was put in practice and assessed.

RESULTS

As the first step of the nursing process, the evaluation of behavior is considered as the collection of the person's exit reactions or behaviors, as an adaptation system related to each of the four adaptation modes, in this particular case the physiological mode. Data were collected through a physical examination, investigation of patient files and an interview with the mother. This process resulted in the NI's history.

History of the newborn

The infant was admitted at the Neonatal Intensive Care Unit (NICU), admitted on November 13th 2007. Born at 34

weeks of gestational age through normal birth, weighing 2,840g and measuring 46cm, in fetal suffering, Apgar 6 and 7. Maternal history indicates premature amniorrhexis, prenatal care and routine tests unaltered. Physical investigation showing head and neck without abnormalities. Respiratory assessment showed respiratory discomfort and acrocyanosis. Abdomen, cardiovascular, geniturinary and gastrointestinal systems without abnormalities. On the musculoskeletal assessment, the NI showed congenital malformation (ruptured lumbar myelomeningocele). Moreover, on the neurological assessment, hypoactivity was observed, with little reaction to handling and decreased crying. The infant was pale and showed lower limb ecchymoses. NI maintained in an incubator, with venous hydration (VH) and antibiotics therapy through an umbilical catheter, nasal CPAP, vital sign monitoring. On a zero diet, with an open orogastric probe and presence of yellowish gastric residue. Presence of elimination.

20/11/2007

NI kept in incubator, venous hydration and antibiotics therapy through an umbilical catheter. Acyanotic, pink NI. Oxy hood installed due to improvement in respiratory discomfort. Continuous vital sign monitoring. Good spontaneous activity, reactive to handling, strong crying and interacting easily. Absence of gastric residue (GR) and gavage diet. Presence of elimination.

27/11/2007

RN kept in incubator, under VH and use of antibiotics therapy, breathing well in environmental air, pink, active and reactive to handling, breastfeeding, good interaction with the mother and the environment at the Unit. Transferred to another institution at 16h for reparatory myelomeningocele surgery.

Nursing Process in the light of Callista Roy's Adaptation Model

The need for care delivery to infants in severe conditions concomitantly entailed new challenges for nurses. One of these challenges is care planning, using the art and science of technical and humanized care, with a view to focusing not only on the disease, but also on the NI and their behavior in the health/disease process, so as to promote their wellbeing, preparing them for a better experience, inserting them in care and valuing their singularity. This requires the NI's adaptation to the extra-uterine environment, which starts with the physical examination. The goal of this examination is to detect abnormalities and decrease doubts about the child's physical characteristics⁽¹¹⁾.



Table 1 - Nursing Diagnoses, Intervention and Nursing Outcomes of a newborn with myelomeningocele - Fortaleza, CE - 2008

Physiological component	Nursing Diagnoses	Outcomes and indicators (NOC Code)	Intervention and activities (NIC Code)
Oxygenation	Ineffective breathing pattern related to spinal cord injury	Respiratory condition: ventilation (0403) Respiratory Frequency (040301) Respiratory Rhythm (040302) Breathing Depth (040303) Symmetrical thorax expansion (040304)	Respiratory monitoring (3350) Vital sign monitoring (6680) Neurological positioning (0844) Mechanical ventilation (3300) Weaning from mechanical ventilation (3310)
Nutrition	Imbalanced nutrition: less than body requirements related to inability to digest nutrients	Establishment of breastfeeding: infant (1000)	Care for probes and drains: gastrointestinal (1874)
Protection	Impaired skin integrity related to mechanical factors (adhesives, pressure, containment) and altered pigmentation	Treatment behavior: illness or injury (1609) Tissue integrity: skin and mucous tissue (1101)	Injury care (3660) Bathing (1610) Control of pressure on body areas (3500)
	Risk for infection related to tissue destruction and increased environmental exposure	Severity of infection: NI (0708) Tissue integrity: skin and mucous tissue (1101) Treatment behavior: illness or injury (1609)	Care for probes and drains: umbilical line (1875) Injury care (3660) Infection control (6540) Maintenance of venous access devices (2440)
Neurological function	Disturbed sensory perception related to altered sensory transmission	Neurological condition: sensory-motor spinal function (0914)	Neurological positioning (0844)

DISCUSSION

When putting intervention in practice, the focus should be on enhancing the person's coping ability or adaptation level, so that total stimuli continue in that person's adaptation ability.

As shown in Table 1, the following physiological components were affected: oxygenation, protection, nutrition and neurological function. The Nursing diagnoses were: ineffective breathing pattern related to spinal cord injury; imbalanced nutrition: less than body requirements related to inability to digest nutrients; impaired skin integrity related to mechanical factors (adhesives, pressure, containment) and altered pigmentation; risk for infection related to tissue destruction and increased environmental exposure and disturbed sensory perception related to altered sensory transmission.

The ineffective breathing pattern diagnosis is defined as: inspiration and/or expiration that does not provide adequate ventilation⁽⁸⁾. In this study, it was represented by the following defining characteristics: spinal cord injury and neurological immaturity. The following nursing interventions were included: respiratory monitoring, vital sign monitoring, neurological positioning, mechanical ventilation, weaning from mechanical ventilation.

The following respiratory monitoring activities were put in practice: monitoring frequency, rhythm, breathing depth and effort; determining the need for aspiration through auscultation of airway stertors and snoring; monitoring reading of mechanical ventilator parameters, observing rises

in inspiration pressure and reduction in current volume, as appropriate⁽⁹⁾. Activities to monitor vital signs were: monitoring arterial pressure, pulse, temperature and breathing pattern, when adequate⁽⁹⁾.

As the infant showed respiratory discomfort, continuous positive airway pressure (CPAP) was installed, a method that consists in the administration of an oxygen and compressed air mixture under continuous pressure, through nasal devices, increasing the pulmonary functional residual capacity and reducing pulmonary vascular resistance⁽¹²⁾. The following activities were executed: routine monitoring of ventilator parameters; monitoring of efficacy of mechanical ventilation for the NI's physiological condition⁽⁹⁾.

One of the interventions in care delivery to NI with MMC is neurological positioning, with the following activities: supporting the affected body part, avoid pressure on the affected body part; monitoring skin integrity⁽⁹⁾. As respiratory discomfort improved, the oxy hood was installed, a method indicated for NIs who breathe spontaneously, need a 60% oxygen concentration and minimum to moderate respiratory stress.

Activities for weaning from mechanical ventilation were: airway aspiration as needed; consulting other health care professionals to select a weaning method; monitoring signs of respiratory muscle fatigue and position the NI with a view to a better use of ventilation muscles and optimized diaphragm expansion⁽⁹⁾.

According to literature, the imbalanced nutrition diagnosis: less than body requirements is defined as: insuffi-



cient intake of nutrients to satisfy metabolic needs⁽⁸⁾. In this study, it was represented by the following defining characteristic: inability to absorb nutrients. Initially, interventions were made during care for the nasogastric tube, through the following activities: monitoring correct tube placement; connecting the probe to the draining system; monitoring intestinal sounds; monitoring feelings of fullness, nausea and vomiting; monitoring quantity, color and consistency of nasogastric elimination: starting and monitoring gavage feeding and the later establishment of breastfeeding⁽⁹⁾.

In the physiological mode, alterations were also found in the NI's protection, with the following diagnoses: impaired skin integrity related to mechanical factors (adhesives, pressure, containment) and altered pigmentation, besides the risk for infection related to tissue destruction and increased environmental exposure. Interventions were: care for injuries, bathing and control of pressure on body areas, with the following activities: removing adhesive tape and residues, observing injury characteristics, delivering venous access care, applying an adequate solution to the skin/injury when appropriate and applying a dressing as needed, bathing the patient in water at a comfortable temperature, monitoring skin conditions while bathing, avoiding pressure on the affected body part, monitoring the skin for redness and cracks and monitoring sources of pressure and friction⁽⁹⁾.

The main interventions for the infection risk diagnosis were: care for probes and drains: umbilical line; care for injuries; infection control and maintenance of venous access devices. The NI had an umbilical catheter and activities were related to medication infusion as indicated, daily dressing changes and as needed, observing signs that demand catheter removal.

Some basic principles should be taken into account in care delivery to NIs with MMC. In the first place, due to the exposed nerve tissue that is not covered by skin, the NIs are at high risk of catching an infection until the opening is surgically closed. Therefore, it is extremely important to use adequate techniques when performing nursing procedures. Another important aspect is hypothermia prevention, as heat can be lost through the skin interruption, and these NIs are at risk of cold. It is also essential to protect the lesion. The NI should be positioned adequately and a moist dressing should be used⁽¹³⁾.

Interventions for injury care were already commented on. With regard to infection control, efforts were made to establish standard precautions: changing access sites and dressings according to current guidelines by the Center for Disease Control⁽⁹⁾. When maintaining venous access devices, an aseptic technique should be adopted whenever the venous access device is manipulated, following standard precautions; an occlusive dressing should be maintained, signs and symptoms associated with local infection should be monitored and flow speed should be determined⁽⁹⁾.

The disturbed sensory perception diagnosis related to altered sensory transmission is defined as: a change in the

number or pattern of stimuli that are being received, accompanied by a decreased, exaggerated, distorted or impaired reaction to these stimuli⁽⁸⁾. As the patient had meningocele, in which the spinal cord and meningeal membranes are exposed through the dorsal surface, covered by a thin layer of epidermis, this phenomenon was expected to be characteristic of the infant. This is the most severe defect with the most compromising neurological consequences. Although surgical repair can close the bag, it is not able to revert already established disabilities⁽¹²⁾. In view of the situation, interventions were aimed at neurological positioning. Neurological assessment of the infant right after birth is also important to determine the severity of the functional defect.

Assessment

As explained, the nursing process is completed with the assessment. In this phase, behavioral goals are compared with the person's exit reactions and the movement towards or away from goals achievement is determined. Goals and interventions are readapted based on the assessment data.

The assessment of the infant's reactions after the nursing interventions showed a pink, eupneic baby with good peripheral perfusion and suspension of oxygen. The infant was calm in the crib and kept in environmental air. Integral skin with reduced ecchymosis and using compresses, skin surrounding the injury without signs of inflammation. Good spontaneous activity and reaction to handling. NI interacting satisfactorily with the mother and the environment. Breastfeeding with good suction. In conclusion, the established goals were achieved, demonstrating the importance of nursing care. The NOC and NIC classifications evidence suggestions for connections between diagnoses, interventions and outcomes, which can help nurses who are not that familiar with the classifications or certain diagnoses⁽¹⁴⁾. The choice of the outcomes and interventions for each diagnosis, however, depends on the nurses' skills, who should consider the peculiarities of each situation.

FINAL CONSIDERATIONS

The use of Callista Roy's Adaptation Model showed that, through stimuli, people can unleash positive or negative reactions in stressful situations. Nurses, however, are responsible to act as mediators between technical objectivity and human subjectivity, through strategies for care actions, training people to develop coping mechanisms aimed at decreasing negative reactions, favoring their experience and facilitating the performance of the procedure.

As presented, the following physiological components were affected: oxygenation, protection, nutrition and neurological function. The Nursing diagnoses were: ineffective breathing pattern related to spinal cord injury; imbalanced nutrition: less than body requirements related to inability to digest nutrients; impaired skin integrity re-



lated to mechanical factors (adhesives, pressure, containment) and altered pigmentation; risk for infection related to tissue destruction and increased environmental exposure and disturbed sensory perception related to altered sensory transmission.

The collected data can provide elements for nursing team members to reflect on their perception of the infant's calls in outlining the nurse/patient relation, considered the main resource to respond to the bio-psycho-social needs of the infant they are taking care of.

REFERENCES

- 1. Figueiras MG, Dytz JL. Avaliação do perfil de recém-nascidos portadores de defeitos do tubo neural. Bras Med. 2006;43(1/4):17-24.
- Aguiar MJB, Campos AS, Aguiar RALP, Lana AMA, Magalhães RL, Rabeto LT. Defeitos de fechamento do tubo neural e fatores associados em recém-nascidos vivos e natimortos. J Pediatr (Rio J) 2003;79(1):129-34.
- Castilla EE, Orioli IM, Lopez-Camelo JS, Dutra MDAG, Nazer-Herrera J, Latin American Collaborative Study of Congenital Malformations (ECLAMC). Preliminary data on changes in neural tube defect prevalence rates after folic acid fortification in South America. Am J Med Genet A. 2003;123A(2):123-8.
- 4. Roy C, Andrews HA. Teoria da enfermagem: o modelo de adaptação de Roy. Lisboa: Instituto Piaget; 2001.
- Leopardi MT. Metodologia da pesquisa em saúde. Santa Maria: Pallotti; 2001.
- Conselho Nacional de Saúde. Resolução n. 196, de 10 de outubro de 1996. Dispõe sobre diretrizes e normas regulamentadoras de pesquisas envolvendo seres humanos. Bioética. 1996;4(2 Supl):15-25.
- 7. Melo MIS. Diagnóstico de enfermagem e propostas de intervenções em recém-nascido pré-termo em Unidade de Terapia Neonatal [monografia]. Brasília: Especialização em Enfermagem Materno-Infantil, Hospital Regional da ASA Sul; 2002.

- 8. North American Nursing Diagnosis Association (NANDA). Diagnóstico de enfermagem da NANDA: definições e classificação 2007-2008. Porto Alegre: Artmed; 2008.
- 9. McCloskey JC, Bulechek GM. Classificação das Intervenções de Enfermagem (NIC). 3ª ed. Porto Alegre: Artmed; 2004.
- 10. Maas M, Johnson M, Moorhead S. Classificação dos Resultados de Enfermagem (NOC). 3ª ed. Porto Alegre: Artmed; 2008.
- 11. Santana JC, Kipper DJ, Fiore RW. Semiologia pediátrica. Porto Alegre: Artmed; 2002.
- 12. Tamez RN, Silva MJP. Enfermagem na UTI neonatal: assistência ao recém-nascido de alto risco. Rio de Janeiro: Guanabara Koogan; 1999. p. 97-8.
- 13. Lockridge T, Caldwell AD, Jason P. Neonatal surgical emergencies: stabilizations and management. J Obstetr Gynecol Nurs. 2002;31(3):328-39.
- 14. Fontes CMB, Cruz DALM. Diagnósticos de enfermagem documentados para pacientes de clínica médica. Rev Esc Enferm USP. 2007;41(3):395-402.