

## REVIEW

## VALIDATION STUDIES OF NURSING DIAGNOSES IN NEONATOLOGY

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**Abstract**

*Aim:* The objective of the review was the analysis of Czech and foreign literature sources and professional periodicals to obtain a relevant comprehensive overview of validation studies of nursing diagnoses in neonatology. *Design:* Review. *Methods:* The selection criterion was studies concerning the validation of nursing diagnoses in neonatology. To obtain data from relevant sources, the licensed professional databases EBSCO, Web of Science and Scopus were utilized. The search criteria were: date of publication – unlimited; academic periodicals – full text; peer-reviewed periodicals; search language – English, Czech and Slovak. *Results:* A total of 788 studies were found. Only 5 studies were eligible for content analysis, dealing specifically with validation of nursing diagnoses in neonatology. The analysis of the retrieved studies suggests that authors are most often concerned with identifying the defining characteristics of nursing diagnoses applicable to both the mother (parents) and the newborn. The diagnoses were validated in the domains Role Relationship; Coping/Stress tolerance; Activity/Rest, and Elimination and Exchange. Diagnoses represented were from the field of dysfunctional physical needs as well as the field of psychosocial and spiritual needs. The diagnoses were as follows: Parental role conflict (00064); Impaired parenting (00056); Grieving (00136); Ineffective breathing pattern (00032); Impaired gas exchange (00030); and Impaired spontaneous ventilation (00033). *Conclusion:* Validation studies enable effective planning of interventions with measurable results and support clinical nursing practice.

**Keywords:** nursing, nursing diagnoses, newborn, validation, validation studies.

**Introduction**

In evaluating the condition of the newborn, the nurse is dependent on an objective assessment of the clinical signs of the newborn, which are very variable in many cases. Knowing them well is a necessary prerequisite for accurate and timely assessment of the state of health of the newborn and the determination of a nursing diagnosis, including interventions that lead to the elimination of the newborn's problem and thus the effective fulfillment of the newborn's needs.

To determine nursing diagnoses, it is advisable to use NANDA International, an explicit international system of nursing diagnoses which uses a set of defining characteristics, risk factors and related factors. The nursing diagnoses are assigned numerical codes and are categorized into individual diagnostic classes comprising 13 diagnostic domains. Every two years, this diagnostic system is reassessed and revised (Marečková, 2006; NANDA-I, 2016).

Nursing diagnoses in the NANDA International system undergo a continuous process of verification for the purpose of effective implementation in nursing practice. To be applicable in practice, nursing diagnoses must be validated in different contexts and situations or theoretical models through systematic research (Rios et al., 1991; Paloma-Castro et al., 2014). An important factor influencing the selection of nursing diagnoses including interventions in the provision of health care is the cultural and religious climate (Asim, Mahmood, Sohail, 2015). NANDA International, as an internationally recognized classification system, enables and supports the use of standard nursing terminology also in European countries. Zeleníková and Žiaková (2012) emphasize that the implementation of NANDA International nursing diagnoses is conditioned by the effective support of the process of validation, that is, the process of verifying whether the defining characteristics of individual nursing diagnoses determined by the North American socio-cultural environment can be regarded as significant in determining nursing diagnoses in the environment of

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Czech and Slovak nursing. The result of validation is an expression of the validity of a nursing diagnosis.

Validity can generally be divided into content, criterion and construct validity. Content validity determines to what extent the content of the research, evaluation or measuring instrument is consistent with the content of the investigated area. During validation of evaluation tests, particular attention is paid to individual items and to whether they comprehensively cover the investigated issue (Hendl, 2006). In the case of nursing diagnoses, the content validation is focused on the identification of defining characteristics and determining their representativeness, that is, whether the defining characteristics of a given nursing diagnosis are characteristic for a particular clinical situation. Criterion validity assesses the compliance of the results of the evaluation or measurement with a well-known and proven criterion, the so-called criterion variable. Construct validity is aimed at identifying the theoretical aspects of the measured construct. This means that it indicates whether the tool or test actually measures and predicts what is expected in theory. For example, in newborns with high levels of bilirubin in the blood, the presence of other defining characteristics of the nursing diagnosis *Neonatal jaundice (00194)* is presumed (Jarošová et al., 2012a). In the validation of nursing diagnoses, the term “clinical validation” is often used. Carlson-Catalano and Lunney defined clinical validation as the implementation of scientific research methods to identify the defining characteristics of nursing diagnoses in real clinical situations (Mazalová, Mikšová, Kameníčková, 2013). According to Zeleníková and Žiaková (2012), however, clinical practice lacks a process of objectivization of nursing diagnostics due to the lack of a systematic solution to the issue.

Studies concerning validation of the defining characteristics of NANDA International nursing diagnoses in pediatric patients are not very common (Mazalová, Mikšová, Kameníčková, 2013), and there are almost none involving newborns. Clinical and content validation studies are more frequently carried out for the adult population. The reason for the absence of validation studies of nursing diagnoses in pediatric patients is likely to be the potential relationships between the degree of validity of the defining characteristics of the nursing diagnoses, age and the degree of psychomotor development of the assessed pediatric patients including newborns (Mazalová, Mikšová, Kameníčková, 2013). It may also be the non-specificity of the clinical indicators

and, in many cases, also the limiting possibilities of current diagnostic tools (Rabasová, Sikorová, 2015).

In neonatal nursing, the general procedures used are based on NANDA International. The majority of medical facilities use modified NANDA International nursing diagnoses. Unfortunately, it is often seen that such diagnoses have differently defined names supplemented with other terms, and that they often lack the standardized numerical codes assigned to the NANDA International nursing diagnoses. These modified nursing diagnoses lack sufficient content and clinical validation. Not using the NANDA International nursing terminology can thus produce inconsistent results in the context of nursing assessment between those using NANDA International and those who do not implement it effectively into nursing clinical practice.

## Aim

The objective of the review was the analysis of Czech and foreign literature sources and professional periodicals to obtain a relevant comprehensive overview of validation studies of nursing diagnoses in neonatology.

## Methods

### Eligibility Criteria

The selection criterion was studies concerning the validation of nursing diagnoses in neonatology. The exclusion criterion was validation studies of nursing diagnoses in the adult population in clinical specialties other than neonatology.

### Sources

To obtain data from relevant sources, the following professional licensed databases were utilized: EBSCO, Web of Science and Scopus.

### Search

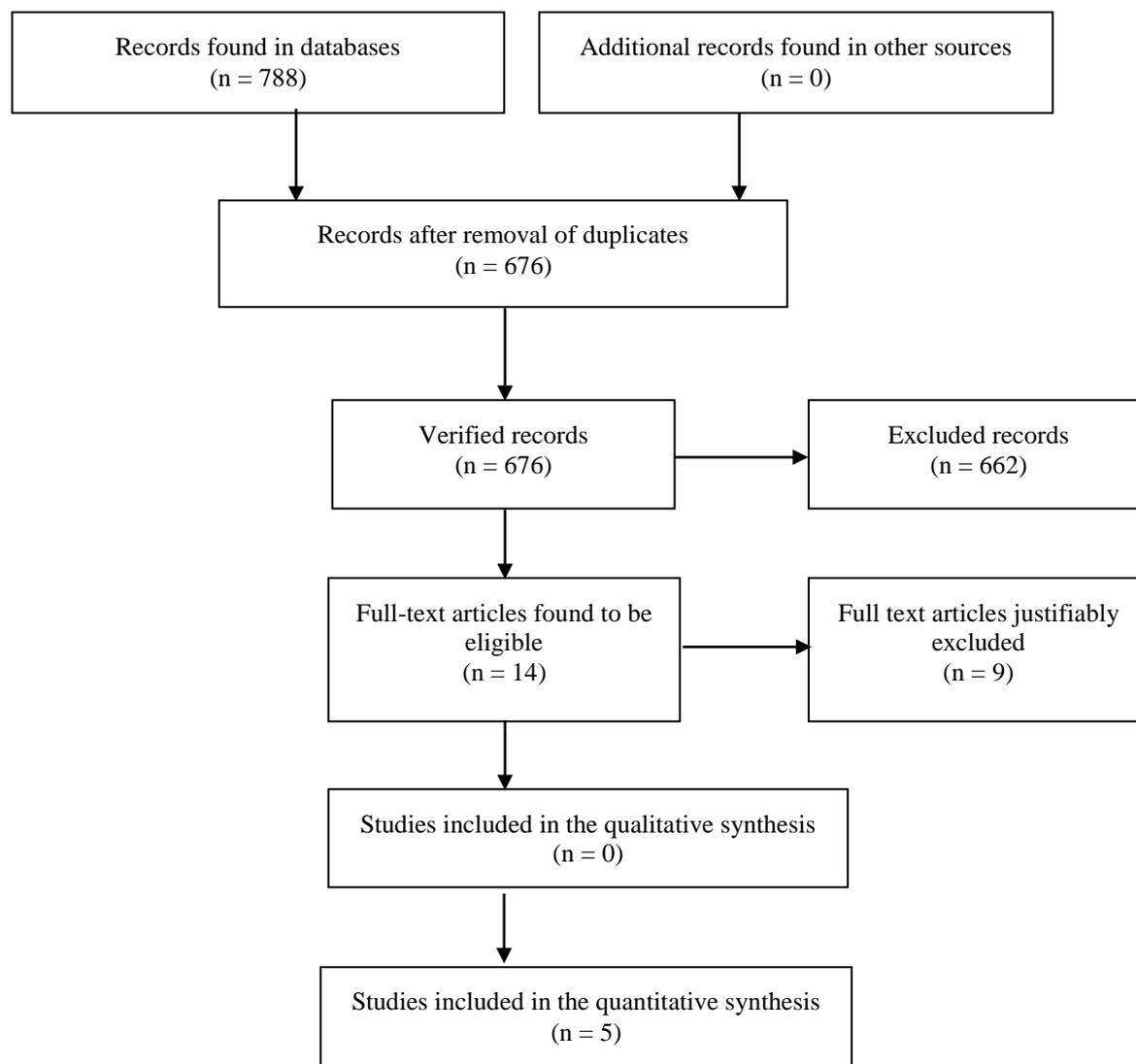
The search criteria were: date of publication – unlimited; academic periodicals – full texts; peer-reviewed journals; search language – English, Czech and Slovak. When searching the individual databases, keywords combined with a Boolean operator (AND) were used. The following keywords were selected: nursing, nursing diagnosis, newborn, validation, and validation studies. The same search criteria were maintained for each database. For analysis of articles, quantitative content analysis was conducted.

### Study selection and data analysis

A total of 788 studies were found in the selected databases. Using the software EndNote, 112 duplicates were removed. Based on analysis of the

articles found, articles not associated with the given topic and those not meeting the selection criteria were eliminated. The analysis of Czech and foreign literature sources and professional periodicals found a minimum of knowledge and information concerning validation of nursing diagnoses of

newborns. For content analysis, only 5 full-text studies that were specifically devoted to the validation of nursing diagnoses in neonatology were eligible (Table 1). The process of selection of the studies as recommended by PRISMA is shown in Figure 1.



**Figure 1** Overview of the selection of studies (according to PRISMA recommendation)

**Results**

The authors of the studies analyzed within this review were mostly concerned with content validation of nursing diagnoses in newborns with regard to their caregivers (Table 1).

In a 2006 Brazilian descriptive study, Carmona and Lopes (2006, pp. 3–6) conducted content validation of the NANDA International nursing diagnosis *Parental role conflict (00064)* in neonatal intensive

care units. Nurses and professionals in the field of neonatal intensive care evaluated major and minor defining characteristics. The authors used Fehring’s Diagnostic Content Validation (DCV) model. Participating in the study were 59 specialists from the field of neonatology who defined 4 major and 15 minor defining characteristics in the study. They identified a total of 19 characteristics which were validated for use in neonatal intensive care units.

**Table 1** Overview of validation studies in neonatal nursing

Author, year, country	Focus of the study	Sample (n)	Results	Major defining characteristics	Total score CVI/DCV
Carmona, Lopes, 2006 Brazil	Content validation of the nursing diagnosis <i>Parental role conflict (00064)</i> in neonatal intensive care units. Fehring's DCV model	59	A total of 19 characteristics (four major, 15 minor), which were validated for use in neonatal intensive care units.	Mother expresses concern(s) / feeling(s) of inadequacy to provide for child's physical and emotional needs during hospitalization – <b>0.92 CVI</b> . Mother expresses concern(s) / feeling(s) of inadequacy to provide for child's physical and emotional needs at home – <b>0.88 CVI</b> . Mother expresses concern(s) about changes in parental role – <b>0.88 CVI</b> . Mother expresses concern(s) about family health – <b>0.87 CVI</b> .	0.73 CVI
Carmona et al., 2010–2011 Brazil	Clinical validation of the nursing diagnosis <i>Parental role conflict (00064)</i> in neonatal intensive care units. Fehring's CDV model	83	Four minor defining characteristics were identified. Major defining characteristics were not identified.	Anxiety – <b>0.74 CVI</b> . Mother reports concerns about changes in parental role – <b>0.67 CVI</b> . Mother reports concerns about family – <b>0.56 CVI</b> . Fear – <b>0.50 CVI</b> .	0.62 CVI
Orozco-Vargas, Villamizar-Carvajal, Vargas-Porras, 2014 Colombia	Clinical validation of the nursing diagnosis <i>Impaired parenting (00056)</i> in primiparous mothers through Rasch analysis.	301	Eighteen defining characteristics were identified.	/	/
Paloma-Castro et al., 2011–2012 Spain	Content validation of the nursing diagnosis <i>Grieving (00136)</i> in perinatal loss situations. Fehring's DCV model	208	Of 18 defining characteristics, 12 were verified, of which 7 as major and 5 as minor.	Suffering – <b>0.93 DCV</b> . Pain – <b>0.90 DCV</b> . Making meaning of the loss – <b>0.85 DCV</b> . Blame – <b>0.85 DCV</b> . Disturbed sleep pattern – <b>0.84 DCV</b> . Alterations in dream patterns – <b>0.84 DCV</b> . Despair – <b>0.83 DCV</b> .	0.86 DCV
Avena, Pedreira, Gutiérrez 2011–2012 Brazil	Conceptual validation of defining characteristics of three nursing diagnoses in newborns: <i>Ineffective breathing pattern (00032)</i> , <i>Impaired gas exchange (00030)</i> , <i>Impaired spontaneous ventilation (00033)</i> . The Delphi method	10	A total of 40 defining characteristics were validated. Of those, professionals achieved 100% consensus in 12 cases in the first evaluation round.	<i>Ineffective breathing pattern (00032)</i> : bradypnea (100%), decreased vital capacity (100%), increased anterior-posterior diameter (100%), altered chest excursion (100%). <i>Impaired gas exchange (00030)</i> : cyanosis (100%), diaphoresis (100%), hypercapnia (100%), irritability (100%), somnolence (100%), tachycardia (100%). <i>Impaired spontaneous ventilation (00033)</i> : increased metabolic rate (100%), decreased tidal volume (100%).	/

Legend: CVI – Content Validity Index; DCV – Diagnostic Content Validity model; CDV – Clinical Diagnostic Validity model; NANDA – North American Nursing Diagnosis Association.

The following characteristics were defined as major:

- mother expresses concern(s)/feeling(s) of inadequacy to provide for child's physical and emotional needs during hospitalization;
- mother expresses concern(s)/feeling(s) of inadequacy to provide for child's physical and emotional needs at home;
- mother expresses concern(s) about changes in parental role; and
- mother expresses concern(s) about family health.

The Content Validity Index (CVI) of the minor defining characteristics ranged from 0.52 to 0.77. The overall CVI for all 19 characteristics was 0.73. There was no apparent correlation between nurse profiles and defining characteristic scores. The nursing diagnosis *Parental role conflict (00064)* was validated for the purpose of its use in neonatal intensive care units. However, the authors state that the defining characteristics must be described in a more objective manner. According to them, it is important to conduct validation studies of nursing diagnoses in various health care settings in order to take into account the particularities of care and to meet the needs of the clients. Due to the minimum number of validation studies of NANDA International nursing diagnoses in neonatology, it is necessary, according to the authors, to address the validation of nursing diagnoses in newborns also with respect to the mother. The use of validation studies in practice can potentially contribute to the improvement of nursing care (Carmona, Lopes, 2006).

In 2010–2011, Brazilian authors Carmona et al. (2013) subjected the nursing diagnosis *Parental role conflict (00064)* to a clinical validation study. The authors utilized Fehring's Clinical Diagnostic Validation (CDV) model. The study surveyed 83 mothers of newborns hospitalized in a neonatal unit in a teaching hospital in the city of Campinas, Sao Paulo, Brazil. Identified as major defining characteristics were in particular: anxiety; mother reports concern about changes in parental role; mother reports concerns about family; fear; mother reports feelings of frustration; mother reports feelings of inadequacy to provide for child's needs; demonstrates disruption in caretaking routines; mother reports concerns about perceived loss of control over decisions relating to child; reports feelings of guilt; and mother reluctant to participate in usual caretaking activities. The overall CVI for the nursing diagnosis *Parental role conflict (00064)* was 0.62. As major or critical defining characteristics were considered those with CVI equal to or higher

than 0.80. Defining characteristics with CVI between 0.50 and 0.80 were considered minor, and those with CVI under 0.50 were not considered to be validated.

Orozco-Vargas, Villamizar-Carvajal and Vargas-Porras (2015) engaged in the validation of the nursing diagnosis *Impaired parenting (00056)* in primiparous mothers of full-term infants that had no health problems during their first year of upbringing. The other inclusion criteria were being 24 years old or younger and living in the urban area of Bucaramanga, Santander, Colombia. The exclusion criteria were communication impairment, mental abnormalities and use of psychoactive substances. They performed clinical validation using Rasch analysis and Fehring's clinical validation method. The sample consisted of 301 mothers; 18 defining characteristics were identified. According to the authors, clinical validation of nursing diagnoses using Rasch analysis allows for dimensional diagnoses with construct validity.

Content validation of the nursing diagnosis *Grieving (00136)* was carried out by Spanish authors Paloma-Castro et al. (2014). The aim of the validation study was to verify this diagnosis in situations of perinatal loss. The authors used Fehring's validation model. A total of 208 Spanish experts were asked to examine the defining characteristics and other manifestations identified in the literature concerning the issue of perinatal loss. The overall CVI for the nursing diagnosis *Grieving (00136)* was 0.867. From the 18 defining characteristics, 12 were verified, of which 7 as major and 5 as minor. Of the proposed manifestations, "empty inside" was considered as major. According to the experts, the nursing diagnosis *Grieving (00136)* fits in content to the cases of perinatal loss.

Brazilian authors Avena, Pedreira and Gutiérrez (2014) carried out a methodological study of conceptual validation of the defining characteristics of three nursing diagnoses in newborns. The diagnoses were as follows: *Ineffective breathing pattern (00032)*, *Impaired gas exchange (00030)*, and *Impaired spontaneous ventilation (00033)*. The validation study was conducted from January 2011 to April 2012. The validation process was carried out using the Delphi technique and the consensual agreement among the selected experts was equal to or greater than 80%. Of the 46 defining characteristics in the above-mentioned nursing diagnoses proposed by NANDA International, the expert team eliminated 8 and 2 were added due to their common occurrence in this population. A total of 40 defining characteristics were validated. In 12 of these, experts reached complete agreement in the first round of

assessments. For the diagnosis *Ineffective breathing pattern* (00032), it was these defining characteristics: bradypnea (100%), decreased vital capacity (100%), increased anterior-posterior diameter (100%), and altered chest excursion (100%). For the diagnosis *Impaired gas exchange* (00030), 100% agreement was reached in these defining characteristics: cyanosis, diaphoresis, hypercapnia, irritability, somnolence, and tachycardia. In the case of the nursing diagnosis *Impaired spontaneous ventilation* (00033), it was these defining characteristics: increased metabolic rate and decreased tidal volume. The conceptual and newly proposed operational definitions determining the characteristics of the nursing diagnoses *Ineffective breathing pattern* (00032), *Impaired gas exchange* (00030), and *Impaired spontaneous ventilation* (00033) attained a high level of consensus on validation. The authors have thus created a tool that enables nurses in clinical practice to better identify and objectify nursing diagnoses in a specific group of patients, such as newborns. At the same time, this assessment tool allows for planning more appropriate and effective interventions and promotes safer newborn care.

## Discussion

The conclusion that can be drawn from the analysis of the retrieved validation studies is that for the validation of nursing diagnoses, the authors most often used Fehring's model of validity in various combinations. For their content validation of the nursing diagnosis *Parental role conflict* (00064), Carmona and Lopes (2006) used the DCV model. The same model was also used by Paloma-Castro et al. (2014) for validating the content of the nursing diagnosis *Grieving* (00136). Another variant of the validation model is the CDV model, which was used by Carmona et al. (2013) in the clinical validation study of the nursing diagnosis *Parental role conflict* (00064). These validation models are often used for validation studies of nursing diagnoses in adults. This is evidenced by the analysis of 50 validation studies carried out by Zeleníková and Žiaková (2010). The authors identified the use of some of the Fehring's models in 25 of the 50 studies. In this overview, the authors of the analyzed studies also utilized other methods for content and clinical validation. Avena, Pedreira and Gutiérrez (2014) supported content validation by the Delphi technique. The Delphi technique is based on anonymous interviewing of experts in the given field who, based on consensual agreement, draw conclusions regarding a particular problem. The process of the Delphi technique is very time-consuming, but very effective. The questioning

of experts proceeds in several phases, allowing sufficient time for the experts to assess the problem from several perspectives by analyzing the opinions of other experts. The limitations may be the structure, the questioning and the selection of experts. The Delphi technique was first used in 1953 to obtain expert consensus in military planning. It is now used in all scientific disciplines, including nursing (Wiener et al., 2009). In the nursing research of the classification systems NANDA International, Nursing Interventions Classification (NIC) and Nursing Outcomes Classification (NOC) in neonates, the Delphi technique was utilized by Boledovičová et al. (In Bužgová, Sikorová, 2008). Similarly, Wielenga et al. (2015) used the Delphi technique to evaluate nursing research priorities in neonatal intensive care in the Pan-European context. Orozco-Vargas, Villamizar-Carvajal and Vargas-Porras (2015) used the so-called Rasch analysis, based on the one-parameter Rasch model in combination with Fehring's model of clinical diagnostic validity, for the clinical validation of the nursing diagnosis *Impaired parenting* (00056). The authors of the analyzed studies recommend a combination of various methods and approaches in the validation of nursing diagnoses.

A factor influencing the validation studies is the selection of the evaluator and the evaluation tool. It is evident from the studies analyzed in this scoping overview that their authors most often used a questionnaire to evaluate the defining characteristics. Other measuring instruments for the objectivization of the defining characteristics can also be employed. These include, for example, direct measurements, observations, measurements requiring intervention by the nurse, self-assessment and the use of assessment scales (Zeleníková, Žiaková, 2010). In some cases, a combination of selected measurements can be utilized for the effective objectivization of some aspects of the examined phenomenon (Williamson, 2005), for example, for detection of the defining characteristics in the case of nursing diagnosis.

Expert nurses or patients can be utilized as evaluators in the assessment of the defining characteristics. According to Fehring (1986; 1994), a sufficient number of experts for validation studies is in the range of 25–50, ideally 50–100; he also specified clear criteria for identifying experts (Jarošová et al., 2012a). In validation studies analyzed in this scoping study, there is apparent variability in the number and selection of evaluators, where the authors of the validation studies utilize modifications of Fehring's criteria. The largest sets of evaluators in the analyzed studies consisted of 301 mothers (Orozco-Vargas, Villamizar-Carvajal and Vargas-Porras, 2015) and

208 experts (Paloma Castro et al., 2014); the smallest group comprised 10 experts (Avena, Pedreira, Gutiérrez, 2014).

Nursing diagnoses in the NANDA International system have been supported by numerous studies that objectify, both clinically and content-wise, the defining characteristics of the nursing diagnoses. In many cases, however, they are not validation studies. Yet these studies are concerned with research into nursing diagnoses of newborns.

In the preparatory phase of validation, Boledovičová et al. (In Bužgová, Sikorová, 2008) engaged in the creation of sets from the classification systems NANDA International, NIC and NOC for the needs of neonatal nursing at the University Hospital in Nitra, Slovakia. Based on a content analysis of documents using the Delphi technique, they produced sets of 11 nursing diagnoses from the NANDA International classification system, 10 NIC sets, and 9 NOC sets suitable for planning nursing care for normal newborns. The nursing diagnoses were compiled in the following domains: (5) Perception/Cognition; (7) Role Relationships; and (11) Safety/Protection. The authors point to a less rigorous selection of nursing interventions in the areas of touch, temperature regulation and the mother-child relationship. One factor influencing the selection of some nursing diagnoses when assessing the defining characteristics and related factors is, according to the authors, the mother's level of knowledge about care for the newborn.

In a quantitative cross-sectional study, Brazilian authors Santos et al. (2014) identified nursing diagnoses according to NANDA International 2012–2014 and their defining characteristics in 41 newborns with sepsis, who were hospitalized in a neonatal intensive care unit (Rabasová, 2015). The diagnoses were identified in the diagnostic domains: Safety/Protection; Nutrition; and Elimination and Exchange. A total of 13 NANDA International nursing diagnoses were identified: *Risk for Shock (00205)*, *Risk for imbalanced fluid volume (00025)*, *Dysfunctional gastrointestinal motility (00196)*, *Neonatal jaundice (00194)*, *Impaired gas exchange (00030)*, *Ineffective breathing pattern (00032)*, *Risk for bleeding (00206)*, *Risk for ineffective renal perfusion (00203)*, *Risk for delayed development (00112)*, *Decreased cardiac output (00029)*, *Hypothermia (00006)*, *Risk for impaired attachment (00058)* and *Ineffective airway clearance (00031)*. A 95% confidence interval was most significant for the first five of the above nursing diagnoses. For these nursing diagnoses, the authors also identified the defining characteristics. In the objectivization of the

clinical manifestations of sepsis in newborns, the most significant were, in a descending order, respiratory distress, lethargy and hypertonia, intolerance to feeding, abdominal distention, hyperglycemia, apnea, bleeding, convulsion, thermal instability, and shock. According to the authors, objectivization of nursing diagnoses in newborns with sepsis contributes to more precise formulation of nursing interventions and to the systematization of nursing care for newborns. At the same time, through this study, the authors contribute to strengthening the clinical judgment of nurses.

In 2007, Del'Angelo et al. (2010) carried out a retrospective study at a university hospital in Sao Paulo, Brazil, which focused on determining the NANDA International nursing diagnoses most commonly occurring in 118 premature newborns who had been hospitalized in a neonatal intermediary care unit. The purpose of this study was to implement the NANDA International nursing diagnoses into the nursing process, making it more effective (Rabasová, 2015). Statistically significant diagnoses were *Sleep deprivation (00096)*, *Risk for infection (00004)*, and *Interrupted family processes (00060)*. The authors of this study also focus on describing situations in which the likelihood of the aforementioned nursing diagnoses increases. They appeal for a targeted systematic intervention that would lead to physiological stability and growth, minimal structural injuries, and neurobehavioral integration of the family into the care for the newborn. In the course of the study, the authors analyzed 21 studies found in the area of nursing diagnoses in neonatology. Nevertheless, they believe that there is an insufficient number of studies on nursing diagnoses in newborns. The authors also point to the need for make more effective training and continuing education of nurses in nursing diagnoses. For these purposes, they recommend the use of strategies that enable the visualization of cognitive processes (observation, software, simulation games, case studies or problem-based situations).

Similar research was conducted in 2008 at the neonatal ward of a general hospital in Portugal. The aims of this descriptive study were to identify the 2007–2008 NANDA International taxonomy II nursing diagnoses most frequently seen in 35 newborns in a rooming-in neonatal ward, and to describe the defining characteristics and related factors, along with risk factors. The most frequent NANDA International nursing diagnoses in newborns in this ward were, in a descending order, *Risk for infection (00004)*, *Risk for imbalanced body temperature (00005)*, *Risk for impaired skin integrity (00047)*, and *Ineffective breastfeeding (00104)*.

Through the study, the authors wanted to support nursing diagnoses, with the aims to refine the identification and objectivization of NANDA International nursing diagnoses in newborns at neonatal wards, and to evaluate the effectiveness of nursing interventions undertaken by nurses more efficiently (Inácio, 2010; Rabasová, 2015).

In their exploratory descriptive study, do Vale, de Souza and Carmona (2005) identified nursing diagnoses from interviews with parents of newborns hospitalized in a neonatal intensive care unit. The interviews were obtained during 29 meetings over a period of 11 months. The authors managed to identify six nursing diagnoses from the 2005 NANDA International taxonomy: *Fear*, *Parental role conflict*, *Ineffective breastfeeding*, *Impaired home maintenance*, *Risk for caregiver role strain* and *Risk for impaired parenting*. The aforementioned diagnoses were not validated in their study.

In the field of nursing diagnoses, great attention is also paid to research for developing and implementing new electronic databases that would allow nurses in health care facilities to improve the quality of nursing documentation, including the objectivization of nursing diagnoses and the planning of interventions and their monitoring.

Implementation of electronic systems into the nursing process offers possibilities of continuous theoretical and practical perfecting of the provision of effective systematic and individualized nursing care based on knowledge, clinically practice guidelines and clinical practice (Ríos et al., 1991; Peres et al., 2010; Jarošová et al., 2012b).

## Conclusion

It is evident from the analysis of the retrieved studies that the authors most often dealt with identifying the defining characteristics of nursing diagnoses pertaining to both the mother (parents) and the newborn. Diagnoses were validated in the following domains: Role Relationships; Coping/Stress Tolerance; Activity/Rest; and Elimination and Exchange. Diagnoses in the areas of dysfunctional physical needs and psychosocial and spiritual needs were represented. The diagnoses were as follows: *Parental role conflict* (00064); *Impaired parenting* (00056); *Grieving* (00136); *Ineffective breathing pattern* (00032); *Impaired gas exchange* (00030); and *Impaired spontaneous ventilation* (00033). The authors of the analyzed studies agree on the significance of validation studies in newborns in various health care settings with respect to their caregivers, mainly for reasons of supporting individualized, systematic and safe nursing care for

newborns with effective planning of interventions, measurable results and supporting clinical nursing practice.

## Ethical aspects and conflict of interest

All the bibliographic sources used were properly cited. The author declares that the study has no conflicts of interest.

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