

# Child Development: New Diagnoses for the NANDA International

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**OBJECTIVE:** The paper proposes new diagnoses on child development (CD) for NANDA International.

**METHODS:** The study followed the recommended steps of Developmental Processes for NANDA International Nursing Diagnoses. It was a secondary analysis study on the findings of a concept analysis study on CD.

**RESULTS:** A proposal of labels and components of three diagnoses: "Delayed child development," "Risk for delayed child development," and "Readiness for enhanced child development."

**CONCLUSIONS:** The proposed diagnoses represent all the complexity of CD.

**IMPLICATIONS FOR NURSING PRACTICE:** The proposed diagnoses can support nurses in the development of a comprehensive care plan on the health of children.

**Objetivo:** propor novos diagnósticos de enfermagem para a NANDA-International que abordem o desenvolvimento infantil.

**Método:** Este estudo seguiu as etapas recomendadas para o desenvolvimento de diagnósticos de enfermagem da NANDA-International. Foi realizado a partir dos resultados da análise de conceito do termo desenvolvimento infantil.

**Resultados:** Propostos os títulos e os componentes de três diagnósticos: "Atraso no desenvolvimento infantil," "Risco de atraso no desenvolvimento infantil," e "Disposição para desenvolvimento infantil melhorado."

**Conclusões:** Os diagnósticos propostos contemplam toda a complexidade do desenvolvimento infantil.

**Implicações para a prática de enfermagem:** Os novos diagnósticos podem subsidiar o enfermeiro na elaboração de um plano de cuidados integrais à saúde da criança.

## Objective

The objective of this study is to propose new diagnoses related to child development (CD) for the NANDA International (NANDA-I) Classification (Herdman, 2013).

## Problem Identification

Knowledge about CD is essential for nurses to be able to provide comprehensive, quality-based, and person-centered care for children. Human development is a phenomenon that starts in conception and continues throughout life, but brain architecture is molded during the first years of life when the nervous system has more plasticity, being the most vulnerable period to grievances, and also the time when the child best responds to therapy and stimuli that she/he receives from the environment (Kolb & Gibb, 2011; Mustard,

2009; Paus, 2011). Therefore, positive experiences in this stage contribute to children achieving their potential, providing more chances for them to become a thriving citizen able to tackle life's adversities, thereby decreasing the social and economic disparities in society (National Scientific Council on the Developing Child, 2008; Shonkoff et al., 2012).

Promoting healthy overall development involving nutrition, health care, a safe and stimulating family environment, stable and supportive relationships, and quality education is needed to lay the groundwork for each child to reach his or her full potential (Comitê Científico do Núcleo Ciência pela Infância, 2014).

The availability of clinically useful content in nursing classification systems addressing responses to CD provides support for nurses' clinical reasoning in order to make accurate decisions in child care. The content of NANDA-I classification

(Herdman & Kamitsuru, 2014) related to CD needs to be refined to properly represent the knowledge in this field.

A previous study (Souza & Veríssimo, 2013) on CD phenomenon content in the 2012-2014 edition of the NANDA-I classification (Herdman, 2013) concluded that it does not approach the phenomenon in all its complexity. In that study, it was found that the diagnosis "Delayed growth and development (00111)" (Herdman, 2013) joined growth and development in the same label, although they are two diverse phenomena with different definitions and characteristics and sensitive to different interventions; the definition of the diagnosis "Risk for delayed development (00112)" was inappropriate, as it did not correspond to verifiable situations. Furthermore, the related factors and the risk factors that form both diagnoses were insufficient, or unclear (Souza & Veríssimo, 2013). It was also observed that there was no health promotion diagnosis in CD (Souza & Veríssimo, 2013). The absence of a health promotion diagnosis related to CD fails to provide adequate vocabulary to express a diagnosis, which reinforces a care plan focused on strengthening the family in actions that must be maintained and encouraged to achieve positive outcomes in CD. Although the Nursing Outcomes Classification (NOC) (Moorhead, Johnson, Maas, & Swason, 2010) and the Nursing Intervention Classification (NIC) (Bulechek, Butcher, & Dochterman, 2010) have several outcomes and interventions appropriate for the promotion of CD, the absence of a health promotion diagnosis in CD is a barrier to integrate outcomes and interventions to promote CD in care planning.

In addition to this, the 2015-2017 edition of the NANDA-I removed the diagnosis "Delayed growth and development (00111)," stating that further investigation on growth and development as two separate diagnosis concepts was needed (Herdman & Kamitsuru, 2014), as previously pointed out by Souza and Veríssimo (2013).

This article reports a study conducted to refine diagnoses of the NANDA-I classification concerned with CD.

### Methods/Design

The study followed the recommended steps of Developmental Processes for NANDA International Nursing Diagnoses (Herdman, 2013; Scroggins, 2008). It was a secondary analysis study of the findings of a concept analysis study on CD (Souza & Veríssimo, 2015).

The primary study was a concept analysis of "child development" (Souza & Veríssimo, 2015) designed according to the hybrid model (Schwartz-Barcoot & Kim, 2000) in three phases: (1) a theoretical phase, with a literature review of 256 papers from 12 databases and textbooks; (2) a field phase, with qualitative research conducted with health professionals practicing in children care; and (3) an analytical phase, in which the data of the two previous phases were integrated. The concept analysis was based on the following categories: CD antecedents, CD attributes, CD consequences, and CD definitions (Souza & Veríssimo, 2015).

Thus, the framework to review the existing NANDA-I diagnoses related to CD was the findings of the previous study on concept analysis (Souza & Veríssimo, 2015). The analytical categories of the CD concept (antecedents, attributes, consequences, and definitions of CD) composed the data that were used to compare all the components of the existing diagnoses on CD in NANDA-I (Herdman, 2013). This comparison allowed for theoretically deriving labels, definitions, defining characteristics, and risk factors or related factors of potentially missing diagnoses related to CD.

By performing an analysis on each category found in the concept analysis study (Souza & Veríssimo, 2015), it was possible to establish the relationship between those categories and the NANDA-I diagnosis components. So, the definition of the problem-focused diagnosis on CD was elaborated according to the attributes of CD; and the definitions of the risk and the health promotion diagnoses were based on the antecedents of CD. The attributes of CD found in the primary study (Souza & Veríssimo, 2015) supported refining the defining characteristics of the problem-focused diagnosis of CD. The antecedents of CD of the primary study (Souza & Veríssimo, 2015) supported proposing related factors of problem-focused diagnosis, risk factors of risk diagnosis, and defining characteristics of health promotion diagnosis related to CD.

In addition, the Bioecological Theory of Development (Bronfenbrenner & Morris, 2006) was used to verify whether the related factors included all the elements of childhood development that the nurse has to consider when caring for children in the nursing process. The theory describes the influence of four interrelated elements on development: process, person, context, and time. Process is the primary mechanism whereby human development takes place. According to Bronfenbrenner's theory, "human development takes place through processes of progressively or complex reciprocal interactions between an active, evolving biopsychological human organism and the persons, objects, and symbols in its immediate external environment" (Bronfenbrenner & Morris, 2006). The person component is the personal characteristics that individuals bring with them into any social situation (Tudge, Mokrova, Hatifield, & Karnik, 2009). The context is the environment where the developing person is situated. The later element - time - "refers to the fact that developmental processes may vary according to specific historical events that are occurring as the developing individuals are at one age or another" (Tudge, Mokrova, Hatifield, & Karnik et al., 2009).

### Findings

Analyses of the diagnoses related to CD of the 2012/2014 NANDA-I Classification (Herdman, 2013) based on the findings of a concept analysis study (Souza & Veríssimo, 2015) supported the previously made decision to remove "Delayed growth and development" from the classification (Herdman & Kamitsuru, 2014). As previously mentioned, growth and development are two distinct constructs and

should be represented separately in standardized language systems.

The analyses also supported the following findings presented in this paper: (1) the proposal of a new current diagnosis, labeled as “Delayed child development”; (2) the proposal of a new risk diagnosis, labeled as “Risk for delayed child development”; and (3) the proposal of a new health promotion diagnosis, labeled as “Readiness for enhanced child development.” These diagnoses capture the specificity of the CD phenomenon and should be slotted into Domain 13: growth/development; Class 2: development.

Related factors of “Delayed child development” diagnosis and risk factors of “Risk for delayed child development” were grouped as follows: (1) Child factors, which include physical and physiological child conditions that are potentially associated to CD delay; (2) Aspects related to pregnancy include the related factors connected to pregnancy; (3) Aspects related to daily care include the factors concerning the care offered for the child in their environment; and (4) Socioeconomic conditions include aspects of socioeconomic conditions that could cause CD disturbances. These groups correspond to the elements of the Bioecological Theory of Development as follows: the child factors are related to the person; the aspects related to pregnancy and daily care are both related to the process and the context; and the socioeconomic conditions are related to context.

### New Nursing Diagnosis “Delayed Child Development”

The new diagnosis “Delayed child development” is focused on the development phenomenon in childhood. Therefore, its definition and defining characteristics are specific to CD (Table 1). The definition of “Delayed child development” mentions that the use of a validated CD assessment scale as the assessment of development requires specific procedures in order to identify the presence of the defining characteristics. One specific scale is not recommended because there are many that are useful for this objective. Also, the scale must be adequate for the characteristics of the child under assessment, such as age and cultural characteristics of the population.

Almost all defining characteristics of the diagnosis “Delayed growth and development (00111)” were not included in the new diagnosis because they were not specific enough to characterize the diagnoses, or because they were not measurable in comparison to the new elements provided by the concept analysis.

The defining characteristics of the diagnosis “Delayed child development” (Table 1) match the most common areas of development that can be assessed by the developmental scales. They also include a general defining characteristic of having difficulty or inability to perform typical skills of the age group, which allows for classifying the child by using a scale that does not have the same organization

**Table 1. Definition, Defining Characteristics, and Related Factors of the Nursing Diagnosis Delayed Child Development**

**Definition:** Child classified as having delayed development according to development assessment scale adopted as reference.

#### Defining characteristics

Difficulty or inability to perform skills typical of the age group  
 Difficulty or inability in performing psychosocial skills typical of age group  
 Difficulty or inability in performing cognitive skills typical of age group  
 Difficulty or inability in performing motor skills typical of age group  
 Difficulty or inability in performing language skills typical of age group

#### Related factors

##### Child factors

Diseases  
 Genetic disorders  
 Congenital disorders  
 Sensory disturbances  
 Inadequate growth (head circumference, weight and height curves much lower than expected for their age)  
 Prematurity and/or low weight

##### Aspects related to pregnancy

Use of medications during pregnancy  
 Use of tobacco during pregnancy  
 Use of alcohol and drugs during pregnancy  
 Maternal disease  
 Inadequate or absent prenatal care  
 Altered maternal mental health (anxiety, depression, and stress)  
 Exposure to environmental pollutants (e.g., nitrogen dioxide, benzene, lead, manganese, pesticides, heavy metals)

##### Aspects related to daily care

Lack of bond with the caregiver  
 Altered maternal mental health (anxiety, depression, and stress)  
 Exposure to domestic violence (neglect, abuse, parental violence)  
 Impaired cognitive development of parents  
 Lack of health professional support  
 Institutionalization  
 Experiencing stressful situations without enough support from a caregiver (adoption, hospitalization, entry into day care, family changes)  
 Lack of stimulation (inadequate physical environment, lack of opportunity to play, inconsistent interaction of the caregiver with the child, etc.)

##### Socioeconomic conditions

Economically disadvantaged (insufficient family income, unemployment)  
 Unfavorable social conditions (violence, lack of access to support network, etc.)

Source: Souza, J. M. (2014). *Child development: Concept analysis and NANDA-I diagnoses review*. Unpublished thesis, Nursing School, University of São Paulo, São Paulo.

by development area. An assessment tool may not specify the area of the delay, or may even assess different dimensions of CD, such as a scale of daily living activities or a functional development tool, which would convey other CD dimensions and could be considered in this general defining characteristic.

**Table 2. Definition and Risk Factors of the Diagnosis Risk for Delayed Child Development**

**Definition:** Risk for delayed child development due to exposure to situations that negatively interfere in development<sup>a</sup>

**Risk factors****Child factors**

- Diseases
- Genetic disorders
- Congenital disorders
- Sensory disturbances
- To be classified as risk for the development, according to a standardized rating scale
- Inadequate growth (head circumference, weight and height curves much lower than expected for their age)
- Prematurity and/or low weight

**Aspects related to pregnancy**

- Use of medications during pregnancy
- Use of tobacco during pregnancy
- Use of alcohol and drugs during pregnancy
- Maternal disease
- Inadequate or absent prenatal care
- Altered maternal mental health (anxiety, depression and stress)
- Exposure to environmental pollutants (for example, nitrogen dioxide, benzene, lead, manganese, pesticides, heavy metals)

**Aspects related to daily care**

- Lack of bond with the caregiver
- Altered maternal mental health (anxiety, depression and stress)
- Exposure to domestic violence (neglect, abuse, parental violence)
- Impaired cognitive development of parents
- Institutionalization
- Experiencing stressful situations without enough support from a caregiver (adoption, hospitalization, entry into day care, family changes)
- Lack of stimulation (inadequate physical environment, lack of opportunity to play, inconsistent interaction of the caregiver with the child, etc.)
- Lack of health professional support

**Socioeconomic conditions**

- Economically disadvantaged (insufficient family income, unemployment)
- Unfavorable social conditions (violence, lack of access to support network, etc.)

<sup>a</sup>Elaborated according NANDA-I 2012-2014 (Herdman, 2013). Source: Souza, J. M. (2014). *Child development: Concept analysis and NANDA-I diagnoses review*. Unpublished thesis, Nursing School, University of São Paulo, São Paulo.

**New Nursing Diagnosis "Risk for Delayed Child Development"**

The definition for the risk factors of "Risk for delayed child development" captures the specificity of a clinical phenomenon which nurses deal with in practicing child and family care (Table 2). The definition is aligned to the evidence of risks in CD (Souza & Veríssimo, 2015), so it refers to the situations that may cause damage or impairment.

**New Nursing Diagnosis: "Readiness for Enhanced Child Development"**

The concept analysis showed that the promotion of CD is related to the care provided to children and characteristics of their life context. Thus, all the defining charac-

**Table 3. Definition and Defining Characteristics of the Diagnosis Readiness for Enhanced Child Development**

**Definition:** A standard of care that is sufficient to support the child's development and can be strengthened

**Defining characteristics<sup>a</sup>**

- Evidence the bond of the children with the caregiver
- Child's needs satisfied
- Family environment favorable to development
- Favorable economic conditions
- Health professional support
- Interaction with parents
- Breastfed child
- Proper social context
- Support for caregivers to experience stressful situations (entry into day care, hospitalization, family changes, etc.)

<sup>a</sup>Elaborated according NANDA-I 2012-2014 (Herdman, 2013). Source: Souza, J. M. (2014). *Child development: Concept analysis and NANDA-I diagnoses review*. Unpublished thesis, Nursing School, University of São Paulo, São Paulo.

teristics of the diagnosis "Readiness for enhanced child development" were related to the context on all levels - from the microsystem to the macrosystem (Table 3). Although the personal characteristics are also very important for development, they alone cannot guarantee the success of this process (Bronfenbrenner & Morris, 2006). This justifies the definition of the diagnosis of promotion as proposed.

**Discussion**

The study's objective was achieved as the concept analysis of CD supported the new diagnoses, being specific to the phenomena development as was requested (Souza & Veríssimo, 2013). The set of diagnoses include an actual diagnostic, a risk diagnostic, and a health promotion diagnostic, which can improve the nurse's role to comprehensively care for children. Because of this, it can be said that the concept analysis according to the hybrid model can be considered a valuable source of supporting the diagnoses proposal; its complementary steps can provide more consistency to the results. The new diagnoses reflect the contemporary science in which CD is viewed as a result of interaction among the characteristics of process, person, and context during time (Bronfenbrenner & Morris, 2006). They have greater scope of the CD phenomenon, including factors related to the various contextual dimensions, as explained by the bioecological model of development (Bronfenbrenner & Morris, 2006). Additionally, they are according to the American Association of Pediatrics' recommendation on the use of standardized instruments to perform the development assessment (Sandler et al., 2001). This was not guaranteed in previous diagnoses, which could lead to an incorrect nursing diagnosis. Furthermore, proposing a health promotion diagnostic is relevant for promoting CD, since it is critical to children's health. Even when risks or delays in development are not found, the nurse can plan interventions to support and promote development when such a diagnostic is

assigned. Thus, the new diagnoses are completely designed for clinical testing and validation.

Diagnoses were developed before 2015-2016 NANDA-I (Herdman & Kamitsuru, 2014), and the definition of the diagnosis "Risk for child development" can be updated according to the current nomenclature. A new revision may be necessary to rewrite the defining characteristics of the diagnosis "Readiness for enhanced child development," according to the new nomenclature.

### Implications for Nursing Practice

The new diagnoses convey the current perspective of science, highlighting care and the environment as critical in CD, as well as the importance of using standard scales during data collection of children's health. The proposal of a health promotion diagnosis for CD is critical to the clinical practice of nurses who work in pediatrics and child health promotion. The new diagnoses can improve the NANDA-I classification with structured diagnoses based on scientific evidence.

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