

## **Validation Studies On NANDA-I Nursing Diagnoses:**

Methodical demands, overview of studies and critical evaluation

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### **Overview:**

- **Introduction**
- **Research questions**
- **Methodology**
- **Methodical demands**
- **Validation methods for NANDA-I diagnoses**
- **Further results**
- **Conclusion**
- **Limits of the study**

## Introduction: Historical Background and Structure of the NANDA-I Diagnoses

*„A nursing diagnosis is a clinical judgement about individual, family, or community responses to actual or potential health problems/life processes. A nursing diagnosis provides the basis for selection of nursing interventions to achieve outcomes for which the nurse is accountable.“ (approved at the 9th conference 1990)*

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## NANDA-I submission guidelines Level Of Evidence (LOE)

**„Each diagnosis is research-based, with some diagnoses havin stronger research evidence than others.“**

(Lunney 2007, in NANDA-I: Nursing Diagnoses: Definitions & Classification 2007-2008, p. 308)

**„To remain evidence-based, however, the NANDA-I Taxonomy needs ongoing research support.“ (Whitley, 1999)**

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## Introduction: Structure of the NANDA-I Diagnoses

- The terminology model for nursing diagnoses is organised according to the **PES scheme**:

<b>P</b>	<p><b>Title of diagnosis</b> <i>Ineffective airway clearance</i></p> <p><b>Definition</b> <i>Inability to clear secretions or obstructions from the respiratory tract to maintain a clear airway</i></p>
<b>E</b>	<p><b>Possible related factors</b> <i>Second-hand smoke</i> <i>Asthma</i> <i>(...)</i></p>
<b>S</b>	<p><b>Possible defining characteristics</b></p> <ul style="list-style-type: none"> <li>- <i>Absent cough</i></li> <li>- <i>Dyspnea</i></li> <li>- <i>(...)</i></li> </ul>

NANDA-I 2007, p. 5

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## Research Questions:

- • How is validity defined in the nursing context?
- Which methodical demands are there for the validation of NANDA-I nursing diagnoses?
- Which methods are used for the examination of validity of NANDA-I nursing diagnoses?
- How often are the various methods used?
- Which NANDA-I nursing diagnoses have been examined?
- Of which quality are the research studies published?
- Which NANDA-I diagnoses are examined most often?

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## Methodology

### Databases:

- PubMed
- CINAHL 1982-2008
- NANDA conference proceedings 8, 10, 11, 12, 13
- Monograph of the Invitational Conference on Research methods for Validating nursing diagnoses
- OVID

### Search terms:

- Nursing diagnos#s, validity[ti], NANDA, content validity, Delphi technique, factor analysis, clinical diagnostic validity, Fehring

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## Validity of Nursing diagnoses

„Validity has to do with whether the diagnosis represents the patient's true problem, not the nurse's inferred problem“ (Derdiarian 1988, in: Maas 1990)

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**NANDA-I submission guidelines  
Level Of Evidence (LOE)**

- All submissions must include supporting references
- Primary reviewer of DDC
- Review of DDC
- Presentation and discussion on conference
- Final approve by board of directors
- Published from LOE 2.1

NANDA-I, 2007, p. 320 f.

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**NANDA-I submission guidelines  
Level Of Evidence (LOE)**

- I. Received for Development
  - I.1 Label only
  - I.2 Label and Definition
  - I.3 Label, Definition, and Defining Characteristics or Risk Factors
- Accepted for Publication/Inclusion in Taxonomy Label

NANDA-I, 2007, p. 327

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**NANDA-I submission guidelines  
Level Of Evidence (LOE)**

- 2. Accepted for Publication/Inclusion in Taxonomy
  - 2.1 Label, Definition, Defining Characteristics or Risk Factors, Related Factors, and References
  - 2.2 Concept Analysis
  - 2.3 Consensus Studies Related to Diagnosis Using Experts

NANDA-I, 2007, p. 328

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**NANDA-I submission guidelines  
Level Of Evidence (LOE)**

- 3. Clinically Supported
  - 3.1 Literature Synthesis
  - 3.2 Clinical Studies (not generalizable)
  - 3.3 Well-Designed Clinical Studies With Small Sample Sizes
  - 3.4 Well-Designed Clinical Studies With Random Sample of Sufficient Size to Allow for Generalizability to the Overall Population

NANDA-I, 2007, pp. 328 f.

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## Requirements for Validation Studies

- Use of multivariate statistics (Schroeder 1989; Maas et al. 1990)
- Generalisability (Hoskins 1997; Parker und Lunney 1999)
- Creation of operational definitions (Grant und Kinney 1991; Avant 1991, In: Creason 1994; Miers 1991, In: Creason 1994)
- Clinical studies (Grant und Kinney 1992; Müller-Staub 2004)
- Compliance with sequence of studies (Hoskins 1997)
- Research process (Hoskins 1997; Maas et al. 1990)
- Method triangulation (Creason 1989)

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## Validation Methods for NANDA-I Nursing Diagnoses

- Validation models according to Gordon und Sweeney

The retrospective identification model

The clinical model

The nurse validation model

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## Validation Methods for NANDA-I Nursing Diagnoses

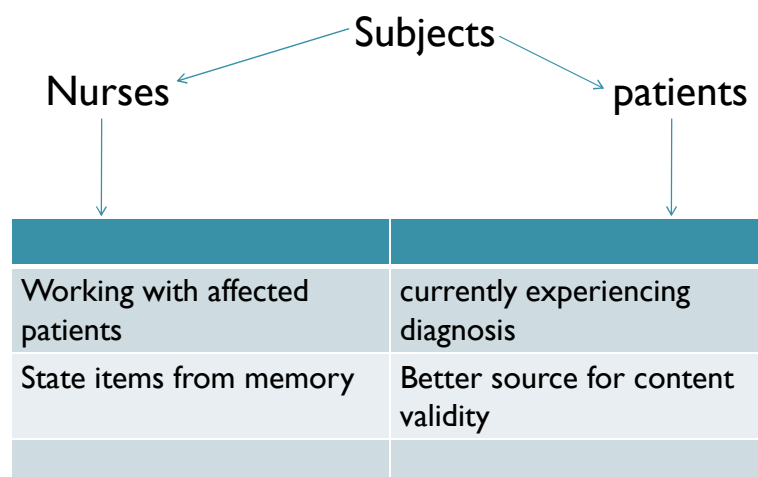
- Validation models according to Fehring

1. The *diagnostic content validity (DCV)*
2. The *clinical diagnostic validity (CDV)*
3. The *differential diagnostic validity (DDV)*
4. The *etiological correlation ratings (ECR)*

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## Discussion about content validity



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## Validation Methods for NANDA-I Nursing Diagnoses

- **The Delphi method**
  - Particular kind of interview in written form to achieve a systematic agreement of a group of experts on (in this case) nursing categories.
  - Anonymity among experts
  - Panel size between 10 and 1000 participants
  - Typically three rounds are necessary

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## Validation Methods for NANDA-I Nursing Diagnoses

- **Multivariate approaches**
  - Magnitude Estimation Scaling (MES)
  - Q-Sorting
  - Factor analysis
  - Cluster analysis
  - Discriminant analysis

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## Validation Methods for NANDA-I Nursing Diagnoses

### • Concept analysis

„Concept identification and formulation is the first step in developing a new diagnose[!]s and refining previously accepted diagnoses. Each diagnosis is a concept that needs to be developed using systematic methods.“ (Walker & Avant, 2005, in: NANDA-I, 2007, p. 308)

Three publications which only consisted of one concept analysis.

In further seven publications the concept analysis is described as the first step of a multi-level approach.

## Validierungsmethoden von NANDA-Pflegediagnosen

### • Qualitative approach

There are three studies which could have been identified using a qualitative approach.

## Summary of Results

- • Use of various methods
  - In most of the studies a method according to Gordon und Sweeney and/or Fehring was used (n=45)
  - In three studies expert ratings without referring to the DCV method
  - Three studies with Delphi method
  - Five studies with multivariate approach
  - Three concept analyses
  - One study with method triangulation
  - 25 studies used a combination of methods
  - 32 studies used non-relatable methods

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## Summary of Results: Number of examined NANDA-I diagnoses

- •
- Problems:**
  - Many diagnosis titles have changed over the years and could not be easily allocated.
  - Multiple publication make clear counting difficult
  - Studies on „self-care deficit“ could be allocated to three diagnoses

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## Summary of Results

- • Number of examined NANDA-I diagnoses

### Results:

- For 72 diagnoses at least one validation study
- For 24 diagnoses only 1 study is stated
- The diagnosis most examined is *knowledge deficit*, which status as diagnosis is put into question by the literature
- For 11 diagnoses 5 or more studies were found
- For 59 diagnoses 1 to 4 studies were found
- For 84 diagnoses no study was found

*Only few NANDA nursing diagnoses were analysed more than once  
(Van Dyke Hayes 1999)*

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## Summary of Results

- • Compliance with the requirements:

- Little studies on construct and criterion-related validity
- The demand for clinical studies was generally observed. Altogether 50 studies using clinical methodology were identified.
- The lack of repetitive studies or follow-up-studies constricts the generalisability of NANDA-I nursing diagnoses
- The different number of uses of the Fehring methods is in contrast to the demand for Fehring of using all three of his methods for a diagnosis.

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## Summary of Results

- **Compliance with the requirements:**
  - The demand for increased use of multivariate statistics has not been fully observed.
  - The method triangulation was only used once by the author who suggested its use.
  - The discussion on operational definitions takes place only in methodologic publications. Neither the aims of the studies, nor the titles indicate the development of operational definitions.

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## Summary of Results

- **Evaluation of research articles:**
  - Great qualitative differences
  - Extent and quality differs often due to place of publication
  - Often the study design and the sample were insufficiently described
  - Lack of critical discussion of the results

### **Instruments for evaluation:**

1. Basic Guideline for Discussion, Focus on Critical Care, 17(Vol.), Issue 5/1990, p. 406
2. General Criteria for the Evaluation of Qualitative Research Articles (author: Aldridge)

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## Conclusion

- Many studies on NANDA-I nursing diagnoses
- Large share of the taxonomy has not been validated yet
- The increased use of the Fehring methods lead to a better comparison of studies
- Difficult to get an overview of the validation-status of a diagnosis
- Only three key references maximum can be listed in the book

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## Limits Of the Study

- Difficulty to grasp all validation studies carried out
- Not all the articles found in the literature could be obtained
- Many studies are only published with short abstracts in conference proceedings. These abstracts lack the clarity to be categorised.
- The number of studies for individual NANDA-I nursing diagnoses make no claim to be complete

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*Thank you for your attention!*

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