



VALIDATION OF NURSING DIAGNOSES - THE *DIFFERENTIAL DIAGNOSTIC VALIDATION* MODEL AS A STRATEGY

VALIDAÇÃO DE DIAGNÓSTICOS DE ENFERMAGEM - O MODELO DIFERENCIAL COMO ESTRATÉGIA

VALIDACIÓN DE DIAGNÓSTICOS DE ENFERMERÍA - EL MODELO DIFERENCIAL COMO ESTRATEGIA

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ABSTRACT

Objective: to analyze the contribution and limits of the use of Richard Fehring's *differential diagnostic validation* model, as a methodological strategy in the validation of diagnoses. **Method:** theoretical review about the *differential diagnostic validation* model for the validation of NANDA-I nursing diagnoses. **Results:** the nursing diagnosis constitutes the step that precedes and promotes the appropriate nursing intervention. The correct identification of the diagnosis is fundamental for effective interventions. The presentation of a structured classification of diagnoses, such as for example the taxonomy II of NANDA-I, facilitates the clinical judgment of the nurse. It is necessary that the diagnoses are clear and that the defining characteristics are specific, and the validation studies contribute to this objective. **Conclusions:** the *differential diagnostic validation* model permits the validation of differences between diagnoses with very similar meanings; however, it is little known and applied in the validation studies. It is a methodology that can be useful for the accuracy of diagnoses and for contribution to the current discussion of taxonomy II and its new proposals. **Descriptors:** nursing; nursing diagnosis; validation studies.

RESUMO

Objetivo: analisar a contribuição e limites no uso do modelo diferencial de diagnósticos de Richard Fehring, como estratégia metodológica na validação de diagnósticos. **Método:** revisão teórica sobre o modelo diferencial para a validação de diagnósticos de enfermagem da NANDA-I. **Resultados:** o diagnóstico de enfermagem constitui a etapa que precede e favorece a intervenção adequada do enfermeiro. A identificação correta do diagnóstico é fundamental para que as intervenções sejam eficazes. A apresentação sistematizada dos diagnósticos em classificações, como por exemplo a taxonomia II da NANDA-I, facilita o julgamento clínico do enfermeiro. É necessário que os diagnósticos sejam claros e que suas características definidoras sejam específicas, e os estudos de validação contribuem para esse objetivo. **Conclusão:** o modelo de validação diferencial permite validar as diferenças entre diagnósticos com significados muito semelhantes; contudo, está pouco divulgado e aplicado nos estudos de validação. É uma metodologia que pode ser útil para a acurácia dos diagnósticos e para a contribuição na discussão atual da taxonomia II e suas novas propostas. **Descritores:** enfermagem; diagnóstico de enfermagem; estudos de validação.

RESUMEN

Objetivo: analizar la contribución y límites en el uso del modelo diferencial de diagnósticos de Richard Fehring, como estrategia metodológica en la validación de los diagnósticos. **Metodología:** revisión teórica sobre el modelo diferencial para validación de diagnósticos de enfermería de NANDA-I. **Resultados:** el diagnóstico enfermero es la etapa que precede y promueve la adecuada intervención de la enfermera. La identificación de un diagnóstico correcto es fundamental para que las intervenciones sean de clasificación efectiva. La presentación estructurada de diagnósticos, tales como la taxonomía II de NANDA-I, facilita el juicio clínico de las enfermeras. Se espera que los diagnósticos sean claros y que sus características definitorias sean específicas y son los estudios de validación que contribuyen a este objetivo. **Conclusiones:** el modelo diferencial de validación de diagnóstico se utiliza para validar el diagnóstico diferencial con las diferencias entre los significados muy similares, sin embargo, es poco conocido y aplicado en los estudios de validación. Se trata de una metodología que puede ser útil para la exactitud del diagnóstico y por su contribución actual a la discusión de la II taxonomía y sus nuevas propuestas. **Descriptores:** diagnósticos de enfermería; enfermería; estudios de validación.

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INTRODUCTION

The nursing diagnosis represents the stage that characterizes the state of the patient's health, and allows the establishment of the expected outcomes and the corresponding nursing interventions to achieve the objectives established; it may be defined as "a clinical judgment about individual, family or community responses to actual or potential health problems / life processes".¹ It is influenced by theories and concepts and constitutes the relevant part of the nursing care process, by means of a methodological model for managing information about the client and decision-making about care.²

To identify a diagnosis, the nurse selects a set of defining characteristics that may clarify the phenomenon under investigation. However, not all the clinical evidence of a diagnosis, seen as pertinent to a given situation, corresponds to what is observed in practice, because many diagnoses share both the defining characteristics as well as related factors, and the degree of uncertainty in the judgment is considered high.³ Diagnoses still exist with defining characteristics that are similar and that cause confusion for clinical reasoning, as is the case of diagnoses related to spirituality and religiosity.⁴

When the nurse does not find the correct meaning of the phenomenon that she seeks to identify, then her interventions may not be the most appropriate. Hence the necessity of the diagnosis to have a consistent theoretical argument, based on the literature and its confirmation in the clinical setting. That is, a diagnosis should be subjected to clinical trials that produce evidence sufficient to guarantee its validity.

Validation of a nursing diagnosis produces technical and scientific knowledge necessary for the understanding of patients' responses to particular phenomena, making possible both its appropriate use in clinical practice, as well as bringing important implications for teaching and nursing research.

The inclusion of a new diagnosis in a classification system requires not only a review of this concept, but also a refinement and clarification of the similar diagnoses and the relationships that exist; it is a continuous process of revision of both the diagnoses and the taxonomic structure.⁵ Therefore, the validation studies constitute a strategy for improving the accuracy of the diagnoses and similarly, making viable the process of their classification within the taxonomy. Validation of the defining characteristics of a diagnosis was an often cited theme within a recent

review of literature, and the NANDA-I taxonomy II was the most addressed classification.⁶

Several models for validation of nursing diagnoses have been proposed and applied; in Brazil, the models of Richard Fehring are the most utilized, primarily the *diagnostic content validation* model and the *clinical diagnostic validity* model.⁷⁻¹⁰ Other models, such as the *differential diagnostic validation* model, have been sparingly applied. This model permits differentiation and validation of two intimately related diagnoses,⁸ and can function as a fundamental strategy for nursing research about the diagnoses, and a contribution to the improvement of the taxonomy.

The literature is very limited in terms of studies applying this model, impeding a critical analysis of the results. In a review article completed in Brazil, the investigators encountered content and clinical validation studies, but did not identify studies using the *differential diagnostic validation* model.¹⁰

The present study was an update regarding the *differential diagnostic validation* model of nursing diagnoses and provides direction for future research in this theme.

THE MODEL

In 1986, Richard Fehring presented the *diagnostic content validation* model, the *clinical diagnostic validity* model, and indicated a third model which was developed in 1987, known as the *differential diagnostic validation* model.⁷⁻⁹ The *diagnostic content validation* model consists of the validation of the defining characteristics of the diagnoses with experts, whose selection criteria were also defined by the author. The *clinical diagnostic validity* model, as its name suggests, deals with the validation of defining characteristics with the patients. The *clinical diagnostic validity* model permits the validation of differences between diagnoses with similar meanings (for example, *fear* and *anxiety*; *powerlessness* and *chronic low self-esteem*).

Similar to the other models suggested by Fehring, this model can be applied noting the consensus among nurse experts or by means of evaluation in the clinical setting, in those patients who have been identified as having the diagnoses under study. Differential validation with nurse experts consists of selecting two diagnoses with the intent to differentiate them by validation (for example, *spiritual distress* and *impaired religiosity*); selection of a sample of nurse experts

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meeting the criteria for expert selection; and calculation of the values obtained for each defining characteristic, following the proposed procedure of the *diagnostic content validation* model.⁷⁻⁹

The characteristics of both diagnoses should be integrated into one instrument, resulting in a single list. The experts are requested to classify the characteristics according to their relevance to making a diagnosis (e.g., *spiritual distress*), as content validation. Subsequently, the procedure is repeated with the same list of defining characteristics, but with the other diagnosis (e.g., *impaired religiosity*). The validation of diagnoses may take place simultaneously, if the number of experts permits two randomized groups. If so, a different diagnosis must be provided for each group, but with the same set of defining characteristics. The results are analyzed as in content validation, i.e., each defining characteristic must be presented on a 5-point Likert scale according to its relevance to the diagnosis. The score for each defining characteristic is calculated considering that each level of the Likert scale is equivalent to: Level 1 - 0, Level 2 - 0.25, Level 3 - 0.50, Level 4 - 0.75, Level 5 - 1. The characteristics that obtain a score equal to or greater than 0.80 are "critical characteristics", those that obtain scores greater than 0.50 but less than 0.80 are "secondary characteristics", and those with scores below 0.50 should be rejected.

If validation is performed in a clinical setting, two groups of patients should be selected who have the diagnoses under study. Using a 5-point Likert scale, containing the defining characteristics of both diagnoses, patients are asked to score the relevance of each defining characteristic on the diagnosis that is present. The following steps are similar to content validation.

Fehring considers that the results of an instrument of equivalent measurement to the phenomenon under study, or expert opinion of nurses regarding the diagnoses investigated, are strategies that can ensure validation, similar to that proposed in the *clinical diagnostic validity* model for diagnoses with the direct approach to the patient.⁷⁻⁹

CRITICAL CONSIDERATIONS

At the time of implementation of the *differential diagnostic validation* model, 1987, NANDA was based on taxonomy I, entitled "Patterns of human responses," a monoaxial classification model, structured into nine categories: exchanging, communicating, relating, valuing, choosing,

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moving, perceiving, knowing, feeling.^{1,11} In the year 2000, a multiaxial taxonomy II was defined, compliant with ISO standards. Currently, there is discussion about a new proposal for a revised taxonomy, based on the utilization of an ontological view of knowledge, maintaining the three classification levels: domains, classes and diagnostic concepts.¹³ The emergence of a new taxonomy brings the need to validate the diagnoses that have been developed, which will permit the analysis of the completeness and adequacy of the introduction of the diagnoses in this classification.¹³ The different models of validation, like the *differential diagnostic validation* model, can help in this regard.¹³

The *differential diagnostic validation* model presents similarities to the *diagnostic content validation* model and the *clinical diagnostic validity* model, but differs in the moment of evaluation of the defining characteristics. In differential validation the experts and the patients have the defining characteristics of both diagnoses on the same list, providing a choice by those evaluating (nurses or patients) that is more consistent with what is intended, that is, to validate similar diagnoses. The application of the *diagnostic content validation* or *clinical diagnostic validity* model of two or more diagnoses, distinctly, will not have the same effect, as it is done separately and each diagnosis is accompanied by your list; in this case the evaluators only assess the relevance of what is presented by the researcher and the separation of characteristics makes it impossible to identify the differences and similarities between each one, which may have repercussions on the sensitivity and specificity of each characteristic for a particular diagnosis. The association of defining characteristics of the distinct concepts in the analysis may be more adequate; likewise, the validation in the clinical setting, as a result of the evaluation of a response from the person, who can better define a diagnosis, constitutes by itself an advantage for this model, or combined with other strategies presented. Such issues still need further studies.

Studies exist that indicate differences between the defining characteristics validated by experts and those encountered in the clinical validation process.^{4,14-5} Also in the *differential diagnostic validation* model, the validation by the patient may have an advantage for the reliability of outcomes.

Since they were announced, the models of Fehring have predominated the validation of

diagnoses and contributed to the evolution of the taxonomy, with some adaptations by the investigators according to population, diagnosis or even the objective of the study. However, some limitations to their use have been identified, such as the criteria for selection of experts and the number of experts required for the validation studies, including differential validation.¹⁵

Complementarily, the literature indicates other ways to perform validation of differential diagnoses, the conceptual analysis among similar phenomena.³ This study, while recognizing the existence of literature on conceptual analysis, presents the exploration and discussion of the concepts of interest (feeling of *powerlessness* and other related concepts), as phenomena relevant to the clinical reasoning of nurses.

Also appearing are studies that use the model or technique of Georg Rasch for diagnostic validation¹⁶ as an alternative to the Fehring model. In the cited study, the validation was performed with only one nursing diagnosis (*caregiver role strain*) and was not expressed using the technique for validating differences between two or more diagnoses.

In a search conducted in Pubmed and Ebscohost, using the terms *differential diagnostic validation* and *nursing diagnosis*, only two papers were found using the model: a validation of *chronic pain* and *acute pain* and the other article validated three diagnoses related to respiration.¹⁷⁻¹⁸ Both suggested a replication of the model in other studies.

The low frequency of use of the *differential diagnostic validation* model of Fehring may have, among others, two possible interpretations: it is not identified as having possible contributions for one's current role, or the intended application is complex. If this proposal contains steps similar to two other widely used models that have contributed to the development of the taxonomy, then this too could contribute to this end. We believe that when you return to this model in nursing research, adjusting the points that generate disagreement, such as the number of experts, criteria or requirements for characterization of an expert, or how to calculate the scores and the values of the scores adopted to accept a diagnosis as validated, nurses can contribute to the improvement of the original proposal.

CONCLUSION

Clinical reasoning is one of the most complex phases within the nursing process and involves making decisions with recognition of the patient's clinical condition; so the higher the power of accuracy of a diagnosis, the more precise can be the clinical decision-making process. Therefore, validation of nursing diagnoses would improve their accuracy and that of the classifications in which they are contained. If the definition, defining characteristics and classification of a diagnosis are clear, it will be much easier for nurses to diagnose and plan interventions in the presence of this diagnosis.

Although rarely used, the *differential diagnostic validation* model of diagnoses seeks to analyze whether the defining characteristics are specific for the diagnoses and may contribute to the development and revision of classifications of nursing diagnoses.

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