PROFESE ONLINE
peer-reviewed journal for non-medical health professions
ISSN 1803-4330
volume 9 / 1 • April 2016

Validation of Diagnostic Elements of Nursing Diagnosis 00104 Ineffective Breastfeeding

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ABSTRACT

Background: The aim of the validation studies is to verify the validity of nursing diagnoses of NANDA-I classification in different conditions than in which they were created. Nursing diagnosis 00104 Ineffective breastfeeding was selected by a research team due to the importance of breastfeeding for both mother and child. Elimination of the initial problems in first days can contribute to successful lactation.

Aim: The main objective of the research was validation of diagnostic elements of nursing diagnosis 00104 Ineffective breastfeeding.

Methods: The model of clinical diagnostic validity was used, in which two experts tested the presence or absence of diagnostic elements in group of women in the postpartum period. The record sheet for recording of presence or absence of 30 diagnostic elements was created. The experts evaluated 60 women with nursing diagnosis Ineffective breastfeeding 00104. The weighted score and total score was calculated after data collection.

Results: It wasn't calculated a weighted score greater than or equal to 0.80 in all of the 17 defining and 13 related characteristics. In two defining characteristics was calculated a weighted score greater than 0.5. The total score of the nursing diagnosis Ineffective breastfeeding is 0.168.

Conclusions: No diagnostic element was identified as main character by the experts. Two characteristics can be described as minor characters. We will keep working with this diagnosis, it is necessary to determine whether, under other circumstances of research, nursing diagnosis Ineffective breastfeeding contains main characters and is fully usable for midwifery in Czech Republic.

KEY WORDS

International Classification NANDA, nursing diagnosis, 00104 Ineffective breastfeeding, validation, CDV model, midwifery

INTRODUCTION

Breast milk is the natural and ideal nutrition for a baby in the first year of its life. Breastfeeding has many advantages for the child, such as providing a sense of security for the mother and child and deepening their emotional connection (3). Midwives can, through care, considerably contribute to the mother's breastfeeding experience from the very beginning. In practice, midwives can often notice problems which may affect breastfeeding. These problems may appear on the mother's or the child's side and they can be of both physical and psychological nature.

A midwife using NANDA-I classification encounters the nursing diagnosis 00104 Ineffective Breastfeeding. In 2008, a Portuguese study identifying the most frequently occurring nursing diagnoses in 35 newborns was carried out. One of these diagnoses was Ineffective Breastfeeding. This diagnosis was identified as frequently occurring also in the study „Nursing Diagnoses Identified During Parent Group Meetings in a Neonatal Intensive Care Unit" by do Vale, de Souza and Carmona (2005)(10). Although there has not been similar conducted research in the Czech Republic, we can assume that midwives and neonatal nurses also encounter the nursing diagnosis Ineffective Breastfeeding at work quite often. Using the diagnostic algorithm, these nurses are able to distinguish whether or not the client has the nursing diagnosis Ineffective Breastfeeding (1) and further deal with the diagnosis in the nursing process.

The validated nursing diagnosis is according to NANDA-I defined as „*dissatisfaction or difficulty of*

a mother, infant or child experiences with the breastfeeding process" (4). In pursuance of the development, there were changes in classification NANDA-I. New diagnostic elements were formulated and other elements were excluded. Most recently, there has been a change in the location of diagnoses within domains and classes. In the previous edition of NANDA-I 2012–2014, this nursing diagnosis was included in the domain Relations between Roles, class Role of Carers (4). In the latest edition of NANDA-I 2015–2017, this diagnosis belongs to the domain 2 – Nutrition, class 1 – Ingestion (5).

The birth of classification NANDA-I took place in North America, and therefore it is desirable to verify whether the diagnostic elements express the diagnosis aptly in different social and cultural environments. Another objective of validation studies is to integrate linguistic and cultural diversity of each nation into a common language of the nursing diagnostics. Greater accuracy of the nursing diagnoses, nursing terminology standardization and an increase in the effectiveness of nursing interventions are other positives of the validation of nursing diagnostics (2).

OBJECTIVE OF THE STUDY

The main objective was to validate the diagnostic elements of the nursing diagnosis Ineffective Breastfeeding determined in women during the early postpartum period, after spontaneous birth or caesarean section.

METHODS

Prior to the commencement of the research, the search operations were executed. In the period from March to July 2014, the search was carried out in the scientific databases which are accessible to students and employees of the Palacky University in Olomouc. The scientific databases used were: EBSCO, PubMed, Medline, ProQuest Nursing & Allied Health Source, Bibliographia medica Čechoslovaca and the search engine Google and Google Scholar. The researchers were working with these keywords: validation, nursing diagnosis, midwifery, Fehring models. Time range was not determined. After processing the searched articles, individual approaches to the validation of nursing diagnoses were clarified. Subsequently, a suitable approach to the validation of a given diagnosis in a ospital environment was selected.

For the content validation of the nursing diagnosis Ineffective Breastfeeding, Fehring's Clinical Diagnostic Validity Model (CDV model) was used. It is a prospective model which validates the diagnostic characteristics from the clinical viewpoint of two experts (2). When choosing the experts, the modified criteria for the Czech and Slovak Republic (Table 1), as mentioned in the article by Zeleníková, Žiaková (2), were taken into consideration. The requirement for an expert was the accomplishment of at least 4 points (6). An additional criterion for the research study was that the clinical practice is considered to be the midwifery practice or the neonatal practice in a care facility or in the field of community care.

Table 1 Criteria for the selection of experts (taken from Zeleníková, Žiaková, 2010, p. 409)

Criteria	Points
Basic	
Master/PhDr. Education in Nursing Bachelor's degree in Nursing Secondary Medical School/Higher School of medical specialization	3 points 2 points 1 point
Current clinical practice (at least one year) in the diagnosis area Clinical practice more than 5 years Clinical practice more than 10 years	1 point 2 points 3 points
Additional	
Specialization/certification (eg. Certified completion of the course – a course mentor, etc.) in clinical practice in the relevant field of diagnosis	2 points
Master/doctoral thesis focused on an area relevant to the nursing diagnosis	1 point
Published article (research or theoretical character) about the problems nursing diagnosis	2 points
Doctoral dissertation in the area of nursing diagnosis	3 points

Experts who satisfied the requirements were chosen. They were two neonatal nurses working for at least 5 years in the field of the given diagnosis with sufficient medical education and specialization in the field of clinical practice dealing with the relevant part of the diagnosis (course of lactation consultancy). The experts thus reached 5 points and, after being approached by the research team, agreed to participate in the research study. The reason for approaching neonatal nurses was their more frequent contact with the

mother and child during breastfeeding. The task of the experts was to monitor the occurrence or absence of any defining characteristics of the nursing diagnosis which was being verified and to evaluate the frequency of characteristics which were found among women with this nursing diagnosis.

A record sheet which included individual diagnostic elements listed in the nursing diagnosis Ineffective Breastfeeding in the classification of NANDA-I 2012–2014 was prepared. The total number of diagnostic elements was 30, of which 17 elements were defining characteristics and 13 elements were related factors. When working with a record sheet, the anonymity of the clients was always maintained and the clients were adequately acquainted with everything before the research was conducted. Processed recording sheets were regularly collected by the project researcher.

The research was conducted in November and December 2014, at University Hospital Olomouc in the postnatal ward. The survey was carried out among women who were over 18 years of age and who gave written consent to being part of the research. Other limitations of researchees were not established. The research was conducted with the consent of the management of University Hospital Olomouc.

The research involved 60 women, of whom 10 women participated in the pilot research and 50 women participated in the main research. The ages of the women ranged from 20 to 39 years. 32 of the researched women were having their first childbirth, 23 women were having their second childbirth, 3 women were tercipara and 1 woman was giving birth for the fourth time. Out of the total number of 60 mothers, 43 women gave birth spontaneously and 27 women gave birth by caesarean section. The research was usually conducted 72 hours after the childbirth when a greater degree of lactation could be expected and thus it was possible to detect dissatisfaction or possibly difficulties on either the mother's or the child's side. The nursing diagnosis 00104 Ineffective Breastfeeding was determined by the experts in all of the women. The experts spent an average of 15–20 minutes with each woman acquainting her with the documentation and then about 20–25 minutes with the woman and the child helping to attach the baby to the breast, conducting initial training, measuring weight of the child and monitoring the overall mental and physical condition of the mother and the child. The experts spent at least 15 minutes entering the information into documentation and the record sheet.

In the pilot research, no facts were revealed which would have determined that the studied group of women would need to be modified. Formal errors and typos in the record sheet were corrected. The pilot research was, due to time constraints, limited to 10 women with the nursing diagnosis Ineffective breastfeeding, where each expert filled in 5 record sheets. It took place at the same ward as the main research. During the pilot research the author was present at the ward to provide possible consultations for the experts and to watch over and ensure the correct course of data collection. During the research itself, the experts were offered the opportunity of having consultations.

After completion of the entire data collection, the results were evaluated by the principal researcher. There were 120 complete record sheets about 60 women with the nursing diagnosis Ineffective Breastfeeding which were independently evaluated by two experts (n = 120). For each characteristic, the so called inter-rater reliability (R) was calculated using the formula which Fehring mentions in his description of a CDV model (7). Characteristics which have the value of 0.5 or less should be excluded. Characteristics reaching the value 0.80 or more are considered the major characteristics. Characteristics with the value from 0.5 to 0.8 are considered the minor characteristics. By summing the score of each characteristic and calculating the average of this sum, the score of CDV (2) was reached. The data were processed in Microsoft Excel.

RESULTS

The weighted score greater than or equal to 0.80 was calculated for none of the diagnostic elements of the 17 defining characteristics and 13 related factors. Therefore, no characteristic in this validation study can be classified as major. Two defining features had the weighted score bigger than 0.5 so they can be described as minor features. This is the defining feature „Inadequate milk supply" and the defining feature „The feeling of inadequate milk supply".

The total CDV score of nursing diagnosis Ineffective Breastfeeding is 0.168.

Table 2 Summary of defining characteristics diagnosis Ineffective breastfeeding in NANDA-I 2012–2014

Defining characteristics	Occurence diagnostic elements (n)	Absence diagnostic elements (n)	Inter-rater reliability (R)
Insufficient milk supply	102	18	0.72
Saggy infant at the breast	20	100	0.02
Infant is crying at the breast	38	82	0.09
Infant crying during the first hour after breastfeeding	74	46	0.37
Infant is restless during the first hour after breastfeeding	78	42	0.42
The infant is unable to properly grasp the breast	38	82	0.09
Infant refuses to grasp the breast	60	60	0.25
Infant does not respond to further efforts to appease him	20	100	0.02
Inadequate emptying of each breast during breastfeeding	12	108	0.01
Lack of opportunities to suck the breast	14	106	0.01
Infant is not gaining weight	80	40	0.43
No signs of the release of oxytocin	0	120	0
Feeling of inadequate milk supply	100	20	0.68
Nipple pain persitsts after the first week of breastfeeding	0	120	0
Infant loses height	76	44	0.39
Unstatisfied process of breastfeeding	76	44	0.39
Intermitent sucking of breast	40	80	0.1

Table 3 Summary of related factors of validated diagnosis Ineffective breastfeeding in NANDA-I 2012–2014

Related factors	Occurence diagnostic elements (n)	Absence diagnostic elements (n)	Inter-rater reliability (R)
Lack of knowledge	58	62	0.23
Anomalies of the infant	2	118	0.0001
Artificial feeding of the infant with a teat	72	48	0.36
Interrupted breastfeeding	16	104	0.016
Ambivalent relationship of mother to breastfeeding	26	94	0.04
Anxiety of mother	62	58	0.26
Mother´s breast abnormalities	2	118	0.0001
Not supporting family	2	118	0.0001
Not supporting partner	2	118	0.0001
Weak sucking reflex of the infant	36	84	0.09
Premature baby	12	108	0.01
Previous breast surgery	2	118	0.0001
Previous unsuccessful attemps at breastfeeding	30	90	0.06

DISCUSSION

When selecting an appropriate nursing diagnosis in the field of postnatal care for validation, the nursing diagnosis Ineffective Breastfeeding was decidedly chosen. After the birth, most women focus mainly on the child and his/her needs. It is important for them that the proper nutrition is secured and that midwives provide necessary care and advice.

Using the CDV model it was found that in 60 women with diagnosed nursing diagnosis Ineffective Breastfeeding, there was no diagnostic element which could be described as the main characteristic of the diagnosis. Two defining elements (Inadequate milk supply, Feeling of inadequate milk supply) were classified as minor.

During the research, studies and articles concerning the validated nursing diagnoses and also using the same type of validation model were searched for in order to compare them with the results of the research.

The search began in March 2014 and was continuously carried out until January 2016. The researchers used scientific databases EBSCO, PubMed, Medline, ProQuest Nursing & Allied Health Source, Bibliographia medica Čechoslovaca and search engines Google and Google Scholar. The following keywords were used for the search: validation, nursing diagnosis, midwifery, 00104 Ineffective breastfeeding, CDV model. The time range was not limited. By combining these keywords, three studies dealing with the validation of the nursing diagnosis Ineffective Breastfeeding were found, from which two studies were older than ten years, one study was from 2015, and none of them used the CDV model for validation. Two of the found studies were „Validation of the Nursing Diagnosis of Ineffective Breastfeeding" by Letbridge et al. and Brazilian study „Diagnóstico de Enfermagem amamentação ineficaz: Estudo de identificação e validação clínica" by Abrao et al. Text of the Brazilian study was given to translators and translated into the Czech language. The latest study is „Obsahová validace diagnóz neefektivní kojení a snaha zlepšit kojení" by Chrásková and Boledovičová.

In a study by Letbridge et al., the two-phase Delphi method was used. First, 400 experts from the USA and Canada were addressed in this study and they were asked to express agreement or disagreement with mentioned diagnostic elements. Their opinions were expressed by using Likert's scale. The experts could express their opinion on changes in the diagnosis or give any other comments. In the second part of the Delphi method, 66 expert nurses were addressed, of whom 60 agreed on participation in the second round. 34 of them handed in filled-in forms. This study of the utility of diagnostic elements of the nursing diagnosis Ineffective Breastfeeding in the NANDA classification took place in 1992; together with this nursing diagnosis, the applicability of nursing diagnosis Interruption of Breastfeeding was assessed.

In this study, the weighted score 0.80 was calculated for seven characteristics and these characteristics were identified as major („Infant inability to latch on to maternal breast correctly", „The reluctance of the mother to attach the child if necessary", „Insufficient weight gain of the infant", „Infant arching and crying at the breast", „Mother's dissatisfaction with the process of breastfeeding", „Insufficient emptying of each breast per feeding", „Interrupted breast suckling") (8). It is obvious that none of the major characteristics of the study by Letbridge et al. agrees with the results of the presented research because after calculating the weighted score not a single characteristic was identified as major. Six other characteristics were identified as minor in the past research and their weighted score ranged from 0.65 to 0.77. They were the following characteristics: „Persistence of sore nipples", „The infant does not accept the milk of the breast sometimes or every time", „Separation of the mother and the child", „No observable signs of oxytocin release", „Breastfeeding less than 7 times per 24 hours during one month of life", „The infant exhibiting fussiness and crying within the first hour after breastfeeding". Over the years, the edition of NANDA-I has been updated and some elements in the study from 1992 are not the same as the diagnostic elements of NANDA-I 2012–2014. However, there has been no agreement on determining the minor features. The characteristics, which were identified as minor by the authors of the article, were not used for the comparison study.

In the descriptive analytic study from 2005 by Brazilian author Abrao et al., 124 breastfeeding women were evaluated at different time intervals after their giving birth. It was found that the most frequently occurring diagnostic feature, regardless of the interval from the birth, was „Unsatisfactory breastfeeding process". In this study, the authors decided to verify whether there is a certain tendency of the occurrence of specific determining features according to the day of the postpartum period. Diagnostic elements, which occurred on the first day most frequently were: „The infant is unable to properly grasp the breast", „Insufficient opportunity for suckling at the breast" and „Infant refuses to start suckling". On the second day and from the fifth day onwards, it was the feature „Lack of opportunity to suck the breast". The third and the fourth day it was „Insufficient emptying the of the breast", „Nipple injury within the first week" and „Pain associated with breastfeeding" (9). It is not possible to compare the results of the validation of the nursing diagnosis Ineffective Breastfeeding with the study by Abrao et al. who did the validation by CDV model and had a different approach to the issue in general. In the presented validation study, all women were assessed approximately 72 hours after birth, ie. the third day, which means that the diagnostic elements occurring before or after this time period cannot be compared.

The only validation study conducted in the Czech Republic is the „Validation of the Nursing Diagnosis Ineffective Breastfeeding and the Effort to Improve Breastfeeding". In this study, Fehring's Diagnostic Content Validation – DCV model was used. The experts identified one major (described by the authors as 'diagnostically significant') defining feature – „The infant is unable to properly grasp the breast". All other defining features reached the value higher than 0.5 and they are classified as diagnostically moderately

significant features (minor features). A weighted score higher than 0.8 was calculated for three related factors, so they can be described as the major (diagnostically significant) features of the validated nursing diagnosis. They are „Anxiety of the mother", „Untimely born baby" and „Anomalies of mother's breast". Other related features that reached a weighted score greater than 0.5 were described as diagnostically moderately significant features. For nursing diagnoses „Effort to improve breastfeeding", the experts did not identified any feature as diagnostically significant. Eleven determining features were categorized as moderately important (11). Although the validation of nursing diagnoses was done in similar sociodemographic conditions, the verifying model was not the same as the one used for the validation presented by us. Therefore the results of the validation cannot be precisely compared. However, it is necessary to give a weighted score of the diagnostic elements which were described in our validation study as only minor characteristics in comparison to the value of the weighted score which these characteristics reached in the study by Chrásková and Boledovičová. In our study, the diagnostic feature „Inadequate milk supply" reached a weighted score 0.72, whilst the diagnostic feature „Feeling of inadequate milk supply" reached 0.68. In the study by Chrásková and Boledovičová the diagnostic feature „Inadequate milk supply" reached a weighted score 0.78, and the diagnostic feature „Feeling of inadequate milk supply" reached the value 0.71.

After calculating the weighted score, the validation we carried out showed that the experts did not determine the presence of any diagnostic feature so often that it could be considered a major one. The CDV score of this nursing diagnosis is in total 0.168. It is said that diagnoses with the total CDV score lower than 0.6 should be reworked or deleted from the list of NANDA-I diagnoses (2). Generally, it is possible to say that the features of the nursing diagnoses 00104 Ineffective Breastfeeding in Czech conditions are not valid and the diagnosis should be reworked for local conditions. However, it is necessary to emphasize that during the research, certain limits which may affect the result of the validation were set. One of these limits was the size of the investigation file which is by Fehring assessed on the minimum of 50 patients (7). The number of women was influenced by the schedule of the research and by the occupancy of the postnatal ward during the research. Another limit of the research was the hospitalization of women at the postnatal ward and the period when the research was conducted. It is a question what results the validation of the given diagnosis could bring if it were conducted in different conditions. The authors of the research can see in this the opportunity to do further research related to this topic, such as using a different model for validation of nursing diagnosis (eg. the above mentioned DCV model), examining a larger sample of women in the postpartum period, the application of the research not only in hospitals but also in the community care sector, or observing women in different periods after the childbirth. Another option is addressing experts from the field of midwifery and neonatology who could suggest new diagnostic elements, validate them and supplement the nursing diagnosis 00104 Ineffective Breastfeeding with defining features and related factors applicable in conditions of the Czech Republic.

CONCLUSION

In recent times, the emphasis in the field of midwifery has been put on increasing the qualification of midwives. To fully satisfy the requirements that are placed on them, the midwives have to also be prepared to do research. The above mentioned validation of the nursing diagnosis Ineffective Breastfeeding of the international classification NANDA-I, brought to the authors a lot of conclusions about the validation of nursing diagnoses. The given nursing diagnosis will be still used in practice from now on, because it is more than desirable to determine the circumstances in which the nursing diagnosis Ineffective Breastfeeding has the major features and is thus fully usable in Czech midwifery conditions.

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