Validation of Diagnostic Elements of the Nursing Diagnosis 00132 Acute Pain in Midwifery

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ABSTRACT

Background: Validation studies allow expression of the degree of validity of components NANDA-I for different sets of people and in different areas of care. Pain is one of the most common problems that midwives in practice assess, evaluate and solve. Validated defining characteristics of the nursing diagnoses are crucial for correct diagnosis of the type and intensity of pain, and for proposal of effective treatment.
Aim: The aim of the study was to validate defining characteristics of the nursing diagnosis Acute pain 00132 by a selected file of experts-midwives, and see which characteristics they consider major and minor.
Methods: The study followed Fehring Diagnostic Content Validity Model. Experts-midwives met the criterion of bachelor degree in midwifery and clinical practice in the delivery room. The research was conducted simultaneously in Olomouc region. Measuring tool for assessing the significance of diagnostic elements was constructed using individual defining characteristics of the nursing diagnoses of NANDA-I Taxonomy II.
Results: Out of the 22 defining characteristics considered by experts-midwives nine characteristics were described as major with weighted score (WS) greater than 0.75: antalgic position due to the avoidance of pain (WS 0.82); expressive behavior (WS 0.77); observed signs of pain (WS 0.80); verbal expression of pain (0.84); changes in breathing (0.80); changes in blood pressure (WS 0.82); changes in heart rhythm (WS 0.86). Among the major related factors were selected the following characteristics: biological factors – birth mechanism (WS 0.94) and psychogenic factors (WS 0.80).
Conclusion: The results of this study indicate that midwives consider nine defining characteristics and two related factors as major for assesing acute pain of mothers coming to the delivery room for delivery.

KEY WORDS

nursing diagnosis, validation, DCV model, midwifery, acute pain, NANDA-International, NIC, NOC

INTRODUCTION

Nursing Diagnosis of the NANDA–International classification system (1), its validation and evaluation of effective care are significant prospective phenomena of nursing science. They are components of the subject of interest in a field, whose particularity is to focus on human needs and deficient care. Nursing Intervention Classification (NIC) – international classification systems of nursing interventions (2) and Nursing Outcomes Classification (NOC) – the area of evaluation nursing care (3) are other components of standardized nursing terminology.

Combining NANDA–International, NOC and NIC, the Alliance NN is formed, whose goal is to create a common standardized nursing terminology – Standardised Nursing Language (SNL). Such universal information system should document the contribution of the work of midwives in the care of clients through collection and analysis of information, as well as allow the assessment of the effectiveness of nursing care and its further improvement. It should also promote electronic communication not only between the very midwives, but also among other health professionals, care providers and the public (5).

Diagnostic domain no. 12 „Comfort" provides information on nursing diagnosis of the needs related to mental, physical and social well-being and tranquillity. It offers nursing diagnosis or standardized nursing terminology of problems that fall under human needs, physical comfort, healthy environment and social well-being (1, p. 478).

Standardized names of nursing diagnoses are classified into three classes in this domain. In the current version of NANDA International (hereinafter NANDA-I), Taxonomy II, nursing diagnosis „00132

Acute pain" is classified in Class 1 „Physical comfort". Nursing diagnosis „Acute pain" is defined according to NANDA-I as „Unpleasant, sensory and emotional experience arising from actual or potential tissue injury: a sudden or slow onset of any intensity from mild to severe with expectable or predictable end and duration of less than sixth months." (1, p. 478).

Labour pain is a physiological phenomenon that occurs at every birth, and represents a specific category of pain. The World Health Organization (WHO) defines pain as the presence of unpleasant sensory and emotional experience associated with acute or potential tissue damage, or described in terms of such damage. Pain as a nursing diagnosis in the care of labouring woman is one of the most common problems that midwives evaluate, assess and solve in clinical practice.

The issue of validation of nursing diagnoses has not been examined a lot in the field of midwifery. Midwives cannot verify the accuracy of the diagnosis without documenting diagnostic characteristics. Diagnostic accuracy of its determination depends on an adequate use of defining characteristics.

OBJECTIVE OF WORK

Our aim was to validate the defining characteristics of the nursing diagnosis „Acute pain" by selected set of midwives, and to determine which defining characteristics were considered major and minor by the very midwifes.

METHODOLOGY

We used the Fehring's validity model of the diagnostic content (Diagnostic Content Validity Model) for the content validation of nursing diagnosis „Acute pain" (4). It is a retrospective model, where a sufficient number of experts evaluate the defining characteristics of nursing diagnoses, assign importance of each characteristic and use the expression criteria for determining major and minor defining characteristics (6, p. 414).

The research was conducted simultaneously at the University Hospital of Olomouc, Šternberk Hospital and the Hospital in Uherské Hradiště in period between July and November 2014. Questionnaires were distributed by the author of the research in the institutions above. Each respondent was personally instructed by the author of the questionnaire about how to fill it in. The survey was anonymous and respondents passed their completed questionnaires down to a pre-designated and marked box. All addressed midwives – experts could voluntarily decide whether they will participate in the research or not. We contacted 40 midwives, and 32 of them have submitted a completed answer sheet. Return of questionnaire sheets was therefore 80%.

Measuring tool for assessing the significance of diagnostic elements was constructed using individual defining characteristics of the nursing diagnoses of NANDA-I, Taxonomy II. It contained 22 items in total (18 defining characteristics and 4 related factors). Midwives recorded the significance of defining characteristics on the Likert scale from 1 to 5 (1 – Not Important; 2 – Slightly Important; 3 – Moderately Important; 4 – Important; 5 – Very Important.). We calculated the arithmetic mean and standard deviation for each characteristic as well as the weighted score, calculated by the sum of the values assigned to each response (5 = 1; 4 = 0.75; 3 = 0.5; 2 = 0.25; 1 = 0) and its dividing by the total number of responses. Characteristics with value of the weighted score over 0.75 were considered major defining characteristics. Characteristics with the value of the weighted score ranging from 0.74 to 0.5 were considered minor. Characteristics with values of the weighted score of less than 0.5 were excluded. Modus and median of individual items were calculated for more detailed description of defining characteristics. Data were processed using Microsoft Excel, 2010.

We used a simple intentional choice based on established criteria to select the specialists. The defining criteria was a bachelor education degree or a minimum of 5 years' experience in midwifery. The set of subjects consisted of midwives with a bachelor's or master's degree. The average age was 38.34 years (age range 28–57 years); the average length of experience was 18.28 years (length of practice range 5–36 years).

RESULTS

Defining characteristics of the nursing diagnosis „Acute pain" were sorted by relevance based on analysis of a questionnaire. The overall weighted score of diagnosis reached 0.69. From a total of 22, them midwives assigned 9 characters of defining characteristics of „Acute pain", containing 7 determining features a 2 related factors (RF), as principal (weighted score ≥ 0.75). The principal defining characteristics are summarized in Table 1.

The answer „Very Important" was chosen most frequently for all the major defining characteristics with the exception of Expressive behaviour and Observed signs of pain defining characteristics (modus 5). The defining characteristics of Expressive behaviour and Observed signs of pain were most frequently described as „Important" (modus 4). Two defining characteristics and one related factor reached a median of 5.

Characteristics with a value of the weighted scores ranging from 0.74 to 0.5 were considered secondary. There were 10 characteristics (8 defining characteris-

tics and 2 related factors) evaluated as secondary defining characteristics. A summary of secondary defining characteristics is given in Table 2.

Defining characteristic of Sleep disorder was most frequently rated as „Important" (modus 4). The remaining secondary defining characteristics were most frequently rated as „Moderately Important" (modus 3).

Table 3 summarizes a set of major and minor factors related to the nursing diagnosis of Acute Pain.

Other features mentioned in NANDA-I with values of weighted score lower than 0.5 can be considered non-specific for the diagnosis.

Table 1 The principal defining characteristics

The principal defining characteristics (only IM)	M (SD)	Score
Reliever position due to the avoidance of pain	4.25 (0.80)	0.81
Expressive behaviour	4.09 (0.69)	0.77
Observed signs of pain	4.19 (0.70)	0.80
Verbal expression of pain	4.35 (0.75)	0.84
Changes in breathing	4.22 (0.83)	0.80
Changes in blood pressure	4.28 (0.89)	0.82
Changes in heart rhytm	4.44 (0.80)	0.86

Legend: IM – identifying marks, M – arithmetic mean, SD – standard deviation, Score – weighted score

Table 2 Secondary defining characteristics

Secondary defining characteristics (only IM)	M (SD)	Score
Diaphoresis (sweathing)	3.34 (1.07)	0.59
Face expression	3.78 (0.83)	0.70
Defensive behaviour	3.78 (0.83)	0.70
Protective gesture	3.72 (0.92)	0.68
Sleep disorder	3.91 (0.82)	0.73
Scattered behaviour	3.00 (1.10)	0.50
Altered time perception, impaired thought processes, reduced interaction with people and environmnent	3.65 (0.95)	0.66
Changes in appetite	3.72 (1.02)	0.68

Legend: IM – identifying marks, M – arithmetic mean, SD – standard deviation, Score – weighted score

Table 3 Related factors

Related factors	M (SD)	Score
Biological factors – birthing mechanism	4,74 (0,51)	0,94
Psychogenic factors	4,19 (1,06)	0,80
Physical factors	3,38 (1,04)	0,66
Chemical factors	3,66 (1,12)	0,59

Legend: M – arithmetic mean, SD – standard deviation, score – weighted score

DISCUSSION

Pain is one of the most common problems that midwives assess, evaluate and solve in practice. Correct diagnosis of the type and intensity of pain is critical for proposing an effective treatment. The midwife has an irreplaceable role in the evaluation of pain in the interdisciplinary team that is involved in management of pain (14, p. 19).

The midwives marked 9 of 22 defining characteristics as major: Reliever position due to the avoidance of pain, Expressive behaviour, Observed signs of pain, Verbal expression of pain, Changes in breathing, Changes in blood pressure, Changes in heart rhythm, Biological factors – birthing mechanism (related factor), Psychogenic factors (related factor).

The defining characteristic "Biological factors – birthing mechanism" achieved the highest score. It is a defining characteristic specific just for midwifery. As such, it has not been evaluated in validation studies dealing with the validation of nursing diagnoses Acute Pain.

The defining characteristic Changes in heart rhythm, which is not specific to midwifery, was classified as principal by midwives (VS 0.86). This conclusion was also reached by a group of experts from the study comparing results of the validation of nursing diagnoses Acute pain in the Czech Republic and the Slovak Republic (8). The Czech group of experts consisted of 77 people and there were 82 person in the Slovak group. The Czech group of experts considered eight defining characteristics principal, namely Reliever position due to the avoidance of pain, Observed signs of pain, Verbal expression of pain, Protective gesture, Defensive behaviour, Changes in heart rhythm, Expressive behaviour and Sleep disorder. Consistently with the Czech experts, the midwives also marked defining characteristics Expressive behaviour, Verbal expression of pain, Observed signs of pain and Reliever position due to the avoidance of pain as principal.

The Slovak group of experts considered only four defining characteristics principal, namely Reliever position due to the avoidance of pain, Observed signs of pain, Verbal expression of pain and Protective gesture. Midwives thus coincide with the following principal defining characteristics: Reliever position due to the avoidance of pain, Observed signs of pain and Verbal expression.

Study of Metzger and Hiltunen (9) describes 76 midwives marking five defining characteristics as principal: Verbal expression of pain, Defensive behaviour, Face expression, Scattered behaviour and Autonomic response. Study of Levin et al. (10) describes 148 midwives marking two defining characteristics as principal: Verbal expression of pain and Face expressi-

on. Addressed midwives marked the defining characteristic Face expression as secondary feature.

A set of 125 registered nurses in study by Simon et al. (11) identified only one principal characteristic: Verbal expression of pain. The characteristics, which have reached a weighted score above 0.80, were considered as principal in this study. If we consider principal also the characteristics, which reached a weighted score of 0.75 for comparison purposes, we can include also Verbal expression of pain, Face expression, Defensive behaviour and Protective gesture. The results of our survey included Defensive behaviour and Protective gesture among secondary characteristics.

In all of these studies, the defining characteristic Verbal expression of pain is described as principal, paralleling the results of the performed research, in which this characteristic achieved a weighted score of 0.84.

Different number of defining characteristics designated as principal is a common feature of research studies dealing with the validation of nursing diagnoses Acute pain. This fact may be caused by different influences associated with the choice of experts, their qualifications and their experience in clinical practice.

CONCLUSIONS

The results of the study show that for the selected group of midwives, main defining characteristics in identifying the nursing diagnosis „Acute pain" are Reliever position due to the avoidance of pain, Expressive behaviour, Observed signs of pain, Verbal expression of pain, Changes in breathing, Changes in blood pressure and Changes in heart rhythm. The midwives also included the following characteristics among the main related factors: Biological factors (birthing mechanism) and Psychogenic factors.

The ability of midwives to be able to diagnose the problems of specific groups of women correctly and to proceed to design an effective intervention leading to the elimination of present nursing diagnoses based on the correct diagnosis it is important to provide good quality nursing care in midwifery practice.

The results of the research could contribute to spread awareness about the validation of nursing diagnoses in midwifery and to streamline the care provided by midwives. Conclusions of the study cannot be generalized due to the limited number of respondents and the limited number of studies related to the care provided in midwifery. For more accurate results of the research, it would be appropriate that nursing diagnosis Acute pain remained validated on a wider sample of respondents, involving greater part of the Czech Republic.

Further studies may contribute to a more detailed specification of the circuit of diagnostic characteristics.

REFERENCES

1. Herdman TH. Nursing Diagnosis 2012–2014: Definitions and Classifications. 9th ed. Wiley-Blackwell; 2012.
2. Bulechek M, Butcher K, Dochterman M. 2008. Nursing Interventions Classification (NIC). 5th ed. St. Louis: Mosby; 2008.
3. Moorhead S, Johnson M, Maas ML, Swanson E. Nursing Outcomes Classification (NOC). 5th ed. St. Louis: Mosby; 2013.
4. Fehring RJ. Validating diagnostic labels: Standardized methodology. In: Hurley ME, editor. Classification of nursing diagnoses: Proceedings of the sixth conference. St. Louis: Mosby, 1986. p. 183–90.
5. Johnson M. et al. NANDA, NOC, and NIC Linkages. 2nd ed. St. Louis: Mosby; 2006.
6. Zeleníková R, Žiaková K. Prehľad modelov validizácie ošetrovateľských diagnóz. In: Čáp J, Žiaková K, editors. Teória, výskum a vzdelávanie v ošetrovateľstve a v pôrodnej asistencii. Martin: JLF UK; 2009. p. 411–22.
7. Zeleníková R, Žiaková K, Vrublová Y, Jarošová D. Porovnanie výsledkov validizácie ošetrovateľskej diagnózy akútna bolesť v ČR a SR. Ošetřovateľstvo: teória, výskum, vzdelávanie. 2011;1(1):12–19.
8. Clarke EB, French B, Bilodeau ML, Capasso VC, Edwards A, Empoliti J. Pain management knowledge, attitudes and clinical practice: the impact of nurses' characteristics and education. Journal of Pain and Symptom Management. 1996; 11(1):18–31.
9. Metzger KL, Hiltunen EF. Diagnostic content validation of ten frequently reported nursing diagnoses. In: McLane, editor. Classification of Nursing Diagnoses: Proceedings of the Seventh Conference. 1st ed. St. Louis: Mosby; 1987. p. 144–53
10. Levin RF, Krainovich BC, Bahrenburg E, Mitchell CA. Diagnostic Content Validity of Nursing Diagnoses. Journal of Nursing Scholarship. 1989;21(1):40–4.
11. Simon JM., Nolan L, Baumann MA Differential Diagnostic Validation: Acute and Chronic Pain. Nursing Diagnosis.1995;6(2):73–9.

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