PROFESE ON-LINE
peer-reviewed journal for health professions

ISSN 1803-4330

volume V/1 • April 2012

Validation of the Defining Characteristics of the Nursing Diagnosis Deficient Knowledge

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ABSTRACT

Objective: The aim of the study was to validate the nursing diagnosis Deficient Knowledge using a selected sample of Slovak nurses – experts, i. e. to identify which defining characteristics the nurses consider primary and which secondary.

Methods: Fehring's Diagnostic Content Validity Model was used to evaluate the defining characteristics of the nursing diagnosis Deficient Knowledge.

Results: The following defining characteristics were marked as primary: "verbalization of the problem" and "inaccurate follow-through of instruction." The following defining characteristics were marked as secondary: "inaccurate performance of test" and "inappropriate behavior". The defining characteristic "exaggerated behaviour" scored the weighted score of less than 0.5.

Conclusion: Not all defining characteristics of the nursing diagnosis Deficient Knowledge found in the NANDA-International classification system are equally significant for the selected sample of Slovak nurses to identify this nursing diagnosis.

KEY WORDS

nursing diagnosis, Deficient Knowledge, Diagnostic Content Validity Model, validation

INTRODUCTION

The nursing diagnosis Deficient Knowledge (specify) (code 00126) ranks among the most common diagnoses (Levin et al., 1989, p 356; McKeighen et al., 1989, p 361). Given that "the common intervention for this diagnosis is the education of the patient" (Pokorny, 1986, p 485), it is often referred to as an educational diagnosis (Žiaková, Dingová 2009, p 48). NANDA-International (NANDA-I) defines Deficient Knowledge as the absence or deficiency of cognitive information related to a specific topic (NANDA-I, 2009, pp. 171). It is a diagnosis that has relatively quickly established itself in the local social-cultural environment. Based on the findings of a retrospective analysis of documentation, Pokorny (1986) states that in practice this diagnosis is often established automatically, without any prior assessment of diagnostic characters (Pokorny, 1985, p 650). Likewise, Dennison and Keeling (1989, p 144) noted that with some patients the diagnosis is established in a routine manner, without adequate documentation. Without documenting the diagnostic characters, the nurse is unable to verify the accuracy of the established diagnosis. Diagnostic accuracy depends on an adequate use of defining characteristics. While the validity of the nursing diagnosis Deficient Knowledge has been studied by a number of foreign authors (Galdeano et al., 2008; Galdeano et al., 2010; Martin, Fitzimons, 1989; McKeighen et al., 1989; Pokorny, 1985, 1986), no study researching DK has been published in the Slovak Republic to date.

OBJECTIVE

The aim of the study was to validate the nursing diagnosis Deficient Knowledge using a selected sample of Slovak nurses – experts, i. e. to identify which defining characteristics the nurses consider primary and which secondary.

PARTICIPANTS AND METHODS

Fehring's Diagnostic Content Validity Model (DCV model) was used to evaluate the defining characteristics of the nursing diagnosis Deficient Knowledge (Fehring, 1986).

Data were collected with the help of an evaluation instrument, which consisted of a list of 5 defining characteristics of NANDA-I nursing diagnosis Deficient Knowledge (NANDA-I, 2009, pp. 171) and identifiers. Nurses assessed the defining characteristics on a Likert scale with 1 to 5 points (1 – zero value 5 – maximum value). For each characteristic the weighted score was calculated as a sum of values assigned to each answer (5 = 1, 4 = 0.75, 3 = 0.5, 2 = 0.25, 1 = 0), divided by the total number of responses. In our research, the primary defining characteristics included characteristics with the weighted score over 0.75, while secondary were values with a weighted score from 0.5 to 0.75. The overall DCV score was the average of the sum of the scores of individual characteristics; the total score did not include characteristics of 0.5 and lower (Fehring, 1987, p 626). The rate of dependence between the defining characteristics was established by calculating a simple linear correlation (Pearson correlation coefficient), followed by identifying the level of the critical statistical significance of this correlation. The research was held from May to October 2010.

Participants were selected using a simple non-random method based on predetermined criteria. Experts were nurses who scored at least 4 points according to modified Fehring's criteria (Zeleníková a kol., 2010, p 410). Participants in the research recruited from nurses educators, graduates of combined bachelor or master programmes of nursing with a minimum clinical practice of 1 year (at the Department of Nursing at JLF UK Martin and the Department of Nursing, Faculty of Health Care, Catholic University in Ruzomberok), and mentor nurses with clinical practice and experience with nursing diagnosis. All the nurses could decide whether to participate in the research or not. Submission of a completed form was considered as the nurse's agreement to participate. Of 150 nurses addressed, 117 nurses completed the form, which is a 78% return, of which 28 records were eliminated due to missing data or because they had not scored the required number of points. Data acquired from the nurses were analysed and processed with the statistical programme SPSS 16.0 for Windows.

RESULTS

The research participants consisted of 89 Slovak nurses, of whom 88 (98.9%) were female and 1 (1.1%) male. On average, the nurses were 38.3 years old (SD 9.89, min 21, max 59), the average length of clinical practice was 16 years (SD 11; min 1, max 41), and the average score based on modified criteria for expert selection was 6.42 (SD 1.44; min. 4, max 11). Sixteen (18%) nurses had a doctoral degree (Ph.D.), 27 (30.3%) had a master's degree, 40 (44.9%) a bachelor's degree, 3 (3.4%) had completed higher professional training, and 3 (3.4%) nurses secondary professional training. Forty-three (48.3%) nurses had completed specialist training, 6 (6.7%) nurses a mentoring course, 18 (20.2%) nurses worked with nursing diagnosis, and 13 (14.6%) nurses had published an article on nursing diagnosis. Fifty-eight (65.2%) experts entered 'nurse' as their job position, while 31 (34.8%) entered 'educator'.

For the participating Slovak experts, primary defining characteristics included: verbalization of the problem and inaccurate follow-through of instruction. The following defining characteristics were marked as secondary: inaccurate performance of test and inappropriate behaviour. The defining characteristic "exaggerated behaviour" scored the weighted score of less than 0.5 (Table 1). The total DCV score of the validated nursing diagnosis was 0.73.

The defining characteristics include all statistically significant correlations that are positive and range from 0.26 to 0.7, which corresponds to low (0.1–0.3) and medium (0.3–0.7) strength of association. The identified correlations may indicate a link between individual characteristics (Table 2).

DISCUSSION

The research sample of Slovak nurses considered as primary, i. e. those that must be present at the establishment of the diagnosis, the two following defining characteristics: verbalization of the problem (0.82) and inaccurate follow-through of instruction (0.81). The same characteristics were also identified as primary by the participating Czech nurses: inaccurate follow-through of instruction (0.82) and verbalization of the problem (0.78) (Zeleníková et al., 2011, p 450).

The highest weighted score in our sample (0.82) was assigned to verbalization of the problem (Table 1). It was also identified as primary in, for example, studies by Galdeano et al. (2008, pp. 553), McKeighen (1989, p 361) or Pokorny (1985, p 650). In his study of documentation analysis, Pokorny (1985, p 650) argues that the most common characteristic was "verbalisation of deficient knowledge." In this study, a computer randomly selected a set of 120 patients diagnosed with Deficient Knowledge (Pokorny, 1985, p 646). In 51 patients at least one defining characteristic was identified. The defining characteristics of this nursing diagnosis recorded by nurses were identified on a retrospective basis (Pokorny, 1985, p 646). The second most significant characteristic for our research sample of nurses was "inaccurate follow-through of instruction" (0.81). This behavioural characteristic, as Pokorny (1985, p 648) termed it, was also the second most frequently

Tab. 1 Evaluation of defining characteristics

Defining characteristic	Average	SD	WS
Verbalization of problem	4,27	1	0,82
Inaccurate follow-through of instruction	4,25	0,94	0,81
Inaccurate performance of test	3,92	0,98	0,73
Inappropriate behaviour	3,26	1,13	0,56
Exaggerated behaviour	2,46	1,16	0,37

Tab. 2 Correlation between defining characteristics

	Exaggerated behaviour	Inaccurate follow-through of instruction	Inaccurate performance of test	Inappropriate behaviour	Verbalization of problem
Exaggerated behaviour	1,000				
Inaccurate follow-through of instruction	r 0,051 p 0,638	1,000			
Inaccurate performance of test	r 0,182 p 0,087	**r 0,426*** p 0,000	1,000		
Inappropriate behaviour	**r 0,704*** p 0,000	r 0,025 p 0,819	r 0,192 p 0,071	1,000	
Verbalization of problem	r 0,117 p 0,273	**r 0,387*** p 0,000	**r 0,266**** p 0,012	r 0,078 p 0,465	1,000

* Correlation is significant at the 0.01 level of significance; ** Correlation is significant at the 0.05 level of significance

documented characteristic (23.5% of cases) in this study. In the study by Galdeano et al. (2008, p 553), however, experts had found this characteristic secondary.

Both the Slovak (Table 1) and Czech (Zeleníková et al., 2011, p 450) research participants marked the characteristic "inappropriate behaviour" (e. g. hysterical, hostile, nervous, apathetic) as secondary. Its non-specificity for the given diagnosis is also verified by the finding that this characteristic did not appear once in the analysis of the documentation of patients with the diagnosis Deficient Knowledge (Pokorny, 1985, p 650).

Another secondary, non-specific characteristic was "poor test results", according to the Slovak experts. In the study by Pokorny (1985, p 650), only one case of the characteristic was found while reviewing records of 120 patients. Unlike in research studies, in practice it is not common that written tests are used to identify the patient's knowledge (Pokorny, 1985, p 650). Written tests had been used by Brazilian authors Galdeano et al. (2008, 2010), who studied the validation of the diagnosis Deficient Knowledge, specifying this diagnosis to deficient knowledge of the coronary disease and myocardial revascularization. The authors developed a knowledge test to determine the patients' knowledge about the disease. Of the total 59 patients, over 50% had insufficient knowledge of the disease, surgery, and the anaesthesia method (Galdeano et al., 2010, p 103).

Based on documentation analysis, Martin, Fitzimons (1989, p 366) found that nurses identified the diagnosis Deficient Knowledge more frequently as a problem than as aetiology, at the ratio of 9 : 1.

All the assessed records contained an education intervention, which suggested that Deficient Knowledge was, in fact, aetiology of another problem and not a problem itself (Martin, Fitzimons, 1989, p 366).

Some researchers argue that Deficient Knowledge is not a nursing diagnosis. For instance, Jenny (1987, p 184) indicates that Deficient Knowledge is an identification of patient needs and not a nursing diagnosis, and has limited use (Jenny, 1987, p 185). The author maintains (Jenny, 1987, p 185) that it is a risk factor or a defining characteristic. Furthermore, Galdeano et al. (2008, p 550) summarize the views of several authors, arguing that for some, Deficient Knowledge does not constitute a nursing diagnosis as it does not represent a response/reaction of an individual, a change or a disorder, but is rather a related factor that causes other problems, such as deficient self-sufficiency, anxiety, fear, ineffective treatment, etc.

These findings are certainly an incentive for further investigation of this diagnosis. Our research focused

on the validity of defining characteristics, and the total DCV score of the validated nursing diagnosis was 0.73. Further investigations could concentrate on the validation of related factors and the clinical validation in patients with a selected disease.

CONCLUSION

The selected sample of Slovak nurses opines that two characteristics are important for the identification of the nursing diagnosis Deficient Knowledge: "inaccurate follow-through of instruction" and "verbalization of the problem". The other characteristics listed by NANDA-I are considered non-specific for the diagnosis. According to our participants, the diagnosis could not be established accurately based on these characteristics.

The paper was compiled as part of the project Nursing Diagnosis – Theory and Application in Nursing Practice APVV SK-CZ-0151-09, Ministry of Education MEB 0810029.

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