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Content validation of the nursing intervention called Environmental Control: worker safety

Validação de conteúdo da intervenção de enfermagem
Controle Ambiental: segurança do trabalhador

Francisca Sánchez-Ayllón¹
Adriana Catarina de Souza Oliveira¹
Isabel Morales¹
Jéssica Dantas de Sá²
Paloma Echevarría Pérez¹

Keywords

Classification nursing; Validation studies; Occupational health; Environmental health; Occupational health nursing

Descritores

Classificação de enfermagem; Estudos de validação; Saúde do trabalhador; Saúde ambiental; Enfermagem do trabalho

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Abstract

Objective: Validating the content of the nursing intervention called Environmental Control: worker safety in Spain.

Methods: An exploratory and descriptive study using the Fehring method associated with the Delphi method and a sample of 11 experts in occupational nursing. For the clarity of definition and the activities was used a scale ranging from confusing (1) and clear (7) or vaguely (1) and exactly (7). A Likert scale (1 - totally disagree / 5 - totally agree) was used for the nursing action and the need of the activity for its intervention.

Results: The nursing action was considered as critical with the mean score of 0.86% (SD=0.23) and 73 % of the experts considered that the title of the intervention exactly identifies the contents of the definition.

Conclusion: The intervention was considered valid for occupational health with the need for practical applicability using a system of classification specific for occupational health nursing, with the Nursing Process implementation.

Resumo

Objetivo: Validar o conteúdo da intervenção de enfermagem Controle Ambiental: segurança do trabalhador na Espanha.

Métodos: Estudo exploratório e descritivo, utilizando o método Fehring associado ao método Delphi. Amostra de 11 especialistas em enfermagem do trabalho. Para a clareza da definição e das atividades, foi utilizada Escala variando entre confusa (1) e clara (7) ou vagamente (1) e exatamente (7). Para ação de enfermagem e a necessidade da atividade para sua intervenção, atribuímos Escala *Likert* (1- totalmente em desacordo / 5- totalmente de acordo).

Resultados: A ação de enfermagem foi considerada crítica com pontuação média de 0,86% (DV=0,23), 73% dos expertos consideraram que o título da intervenção identifica exatamente o conteúdo da definição.

Conclusão: A intervenção foi considerada válida para a saúde laboral, com a necessidade da aplicabilidade prática utilizando um sistema de classificação próprio da enfermagem na saúde laboral, com a implementação do Processo de Enfermagem.

Corresponding author

Francisca Sánchez-Ayllón
Campus de Los Jerónimos,
unnumbered, 30107, Murcia, Spain.
fsayllon@ucam.edu

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¹Facultad de Enfermería, Universidad Católica de Murcia, Murcia, Spain.

²Faculdade de Enfermagem, Universidade Federal do Rio Grande do Norte, Natal, Brazil.

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Introduction

The effective implementation of the nursing process points to the need for a standardized language of the profession, present in all stages of this methodology. The use of taxonomies in nursing allows a common language, providing communication between nursing professionals and professionals from other areas, and culminating in quality care with scientific support, from the use of concrete, meaningful and reliable data for clinical practice. In this sense, the Nursing Intervention Classification - NIC stands out as a useful taxonomy in clinical documentation, communication of care, integration of data in information systems, being used in various clinics and institutions as a source of research data, as well as allowing the measurement of productivity and assessment of the competence of nurses.

In order to act in occupational health, the nursing process is an important tool that allows critical thinking about the risks or potential problems that a particular worker can present in a certain working condition. A safe and evidence-based nursing intervention favors this care.

The impact of problems due to inadequate working conditions and/or inadequate occupational health is considered important because these factors result in high rates of absenteeism, as well as disorders in the quality of life of these professionals. An average 120 million injuries per year occur as result of accidents at work; 200,000 work dysfunctions, and between 68 and 157 million cases of occupational diseases worldwide. A precarious occupational health reduces the ability of professionals, with presented losses that can reach between 10 and 20% of the Gross Domestic Product of a country. Around the world, such losses can reach 4% of gross domestic product related to deaths, illnesses and labor dysfunctions.⁽¹⁾

In Spain, the role of nurses in occupational health is defined as a specialty from the perspective of approach of workers' state in all its dimensions. Within a multidimensional care to the employee, stands out the nursing intervention proposed by the NIC taxonomy called Environmental Control: worker safety, because nurses have a great role in re-

lation to observing the risks and promoting changes in the work environment. The interaction of the environment on the health of individuals brings them great risks, and it stands out the need to organize and perform actions aiming to prevent or reduce such effects. This need is visible due to the occurrence of 569 fatal accidents in the work journey, which represents 0.1% of work accidents with sickness leave this year, and with non-traumatic diseases - such as heart attack and cerebrovascular accident - as the most frequent cause.

In Spain, specific health surveillance protocols are used, however, the nursing process with regard to nursing classification systems, is not contemplated in any stage of health surveillance, thus emerging the need for incorporating and adapting such methodology to these action guides.⁽²⁾

The aim of this study was to validate the contents of the nursing intervention called Environmental Control: worker safety in Spain.

Methods

This is an exploratory and descriptive study, using the Fehring method associated with the Delphi method.^(3,4) Furthermore, we followed the directions of the *Normalización de las Intervenciones para la Práctica de Enfermería* - NIPE project for the validation of a nursing intervention.⁽⁴⁾

The study was developed in the context of occupational health nursing in Spain, together with the services of occupational risks prevention. It was carried out between June 2012 and April 2013. Initially the Delphi method was used, from inquiries with a number of experts on this intervention.

The population consisted of nurses from the services of occupational risks prevention in Spain. The sample consisted of 11 nurses, selected through an intentional procedure, which fulfilled the inclusion criteria based on the method of Fehring, which proposes carrying out a standardized scheme, based on the opinion of experts.

For the selection of experts, at first, a literature review was carried out from June 2012 to December 2012, in an attempt to identify experts through

publications involving the nursing process and occupational health in Spain. The following database were used as the search strategy: MEDLINE, CUIDEN PLUS, CUIDATGE, and ELSEVIER, as well as publications in the poster format from the congresses of AENTDE (*Asociación Española de Nomenclatura, Taxonomía y Diagnósticos de Enfermería*) and Occupational Risk Prevention in 2012. The used descriptors were: Nursing diagnosis in occupational health; North American Nursing Diagnosis Association (NANDA-International), NIC and Nursing Outcomes Classification (NOC) in occupational health; and Nursing Process in occupational health.

Papers that related the Nursing Process within the context of occupational health were selected. The authors of such articles and/or posters were contacted with the invitation to participate in the validation process. Initially, a cover letter and a questionnaire adapted to the Spanish context were sent to evaluate whether the professional should be considered an expert in this area, which has a fourth additional point, that is to meet at least one of the following requirements: be working or have worked in the area of occupational health for at least 6 months; Having specific training in occupational health (MSc in occupational health, nursing in occupational health specialty); Having scientific production in the field of occupational health.

The sample consisted of 11 experts who positively attested the questionnaire sent. After the selection of experts, as well as their acceptance in participating of the study, a questionnaire was sent electronically. It consisted of open and closed question addressing the nursing intervention of NIC Environmental Control: Worker Safety.

The questionnaire was divided into three parts. The first set of questions showed the assessment of the intervention definition indicated by the NIC, evaluating from a numerical scale, if the definition describes a nursing action, if it is clear and if the title of the intervention allows identifying the content of the definition. The second part included the evaluation of each of the activities of the intervention presented in the taxonomy, assessing the need to carry out such activity in order to make the proposed in-

tervention, and regarding the clarity of the activity description. The third part allowed the experts to add some activity they considered relevant to the scope of intervention that was not in the NIC.

Regarding the clarity of the definitions and the activities, as well as the identification of the definition by title, it was used a global scale with scores 1-7, ranging from confusing (1) and clear (7) or vaguely (1) and exactly (7). For the questions as to whether the definition describes a nursing action and the need for the activity to implement the intervention, a Likert scale was used: 1- completely disagree → 5- totally agree.

The data obtained after evaluation of the experts were statistically analyzed with the use of Statistical Package for the Social Sciences (SPSS) version 16.0.

Data interpretation was based on the method proposed by Fehring, where the value given by each expert for each activity and definition had a weight, from the proposed Likert scale, as follows: 1=0; 2=0.25; 3=0.50; 4=0.75 and 5=1, so that the maximum value reached is one (1), from the mean of each expert. Values greater than or equal to 0.80 were considered as critical due to its great representation for the experts, the activities with values between 0.79 and 0.50 were denominated as minor for having lower scores, and values lower than 0.50 were disregarded because of its diminished representativeness.

For the global scale ranging from 1 to 7, the values 1 and 2 were grouped for the variables confusing or vaguely; 3, 4 and 5 were named as indifferent; and the values 6 and 7 were considered as clear or exactly, and presented as percentage.

The development of the study met the national and international standards of ethics in research involving human beings.

Results

Regarding the question if the definition describes a nursing action, the experts have identified a mean score of 0.86, considered as critical. The standard deviation was 0.23. The definition was considered clear for 73% of experts, 18%

were indifferent about its clarity, and 9% considered it confusing. Also, 73% of experts considered that the title of the intervention identifies the exact content of the definition, with 18% indifferent, and 9% who judged that it vaguely expresses the content of the definition.

Experts gave their opinion regarding the activities suggested by the intervention in order to reach it, as shown in table 1.

Table 1. Validation of intervention activities - Environmental Control: Worker safety - as to its necessity and clarity

NIC activities	Necessity		Clarity
	Score	SD	%
Keeping confidential records of the employees' health.	0.91	0.17	82
Determining the physical status of employees for working.	0.98	0.8	82
Identifying the risks and stressors in the work environment (physical, biological, chemical and ergonomic).	0.98	0.8	91
Determining the applicable standards of health and safety at work, as well as its compliance in the workplace.	0.93	0.12	82
Informing workers of their rights and obligations according to the department of health and safety at work.	0.93	0.16	91
Informing workers about the substances to which they may be exposed.	0.98	0.08	64
Using labels and posters to warn workers about the potential hazards of their workplace.	0.91	0.13	73
Keeping records of injuries and illnesses at work in acceptable forms to the department of health and safety, and participating in the inspection of this department.	0.93	0.12	91
Making records of injuries and illnesses of workers.	0.95	0.1	82
Identifying the risk factors of injuries and diseases at work by reviewing its standards in the records.	0.93	0.23	82
Starting the environmental modification to eliminate or minimize risks.	0.98	0.08	64
Setting investigation programs in motion in the workplace for the early detection of injuries and non-professional illnesses, but related to work.	0.98	0.08	100
Setting programs in motion to promote health in the workplace in relation to the assessment of health risks.	0.98	0.08	64
Developing emergency protocols and preparing selected employees for emergency care.	0.95	0.1	55
Coordinating the follow-up of care and injuries and illnesses related to work.	0.93	0.16	73

SD = Standard Deviation

The activities were judged as critical by the experts in relation to the need for implementing the intervention, and all had a score higher than 0.9. Regarding the clarity of the activities, it was judged as clear, i.e., achieved a score between 6 and 7 by at least 55% of the experts.

Regarding the inclusion of activities that are not present in the activities standardized by the NIC, 91% of experts have proposed activities.

These were categorized by the authors and are presented as follows: Identifying and protecting the especially sensitive workers (45.5%); Informing about preventive measures (individual and collective protection equipment, organizational measures) and occupational risk prevention (36.5%); Applying specific nursing techniques for the correct evaluation of workers' health (27.5%); Carrying out health surveillance in accordance with the protocols of health monitoring of the ministry for each job position (27.5%); Verifying the initial risk assessment and actively participating in it (27.5%); Developing and verifying the evacuation and emergency plans and transmitting information to the teams of intervention and first aid (27.5%); Reporting to the work authorities both the serious accidents as the professional diseases (18%); Advising the executive offices on the correct management of workers' health (18%); Developing protocols of action on violence in the workplace (9%); Developing working tools for collaboration with the technical department concerning the identification of risks (9%); Using and adapting the specific protocols of health surveillance to nursing taxonomies (9%).

Discussion

Interventions made by occupational health nurses play an important role in the process of care to workers however, in the current context that recommends a comprehensive and holistic care, these interventions should be planned, implemented and evaluated.

The indications of the NIPE project for the validation of a nursing intervention using the Fehring method associated with the Delphi method have been widely applied in validation studies.⁽³⁾ However, following the criteria proposed by these methods to define the sample of experts in the field of occupational health with knowledge and mastery of the language of nurses/nursing process⁽³⁾ is a limiting factor, considering there is still a gap in the practical applicability of this international nursing language in the context of occupational health. The

standardization of these actions through a rating systems facilitates the communication of care.⁽⁵⁾ We understand that the content validation by experts in an NIC intervention provides its improvement, as well as the indication of new needs in the area.

The judgment of experts regarding the NIC as 'control and manipulation of the environment in the workplace to promote safety and health of workers'⁽¹⁾ makes us believe and understand the relevance of environmental health, emerging as a relatively new terminology, covering factors between the health/disease process determined by environmental aspects,⁽⁶⁾ besides referring to the theory and practice of assessment and control of environmental factors that may affect the health of individuals.⁽⁷⁾ It is a dialectical relationship between theory and practice, involving life and work, where there is still a gap for this integration.^(8,9) Experts have pointed out almost hegemonically, that there is a need for use and practical applicability of valid interventions, and with level of reliability in a classification system that is specific of the occupational health nursing.

The understanding of the need for an environmental control by nursing may be related to the representativeness of this term from the perspective of occupational health. A study indicated the importance of occupational health for the maintenance of environmental health, presenting a retrospective of the main focuses of actions regarding environmental management for health promotion and it was found that in the majority, occupational health was seen as improvement in the quality of work environment, which indicates the need for environmental management to promote worker safety.

By observing the activities that stood out, it was found, for example, setting in motion investigation programs and programs to promote health in the workplace in relation to assessment of health risks, reinforcing the important role of health education in occupational health,⁽⁶⁾ where there is a need to educate workers in a language with representativeness of standardized nursing activities, indicating its actual application in clinical practice for occupational nursing. A study demonstrated that the application of the nursing process in occupational

health provides a systematic care to workers, which allows, through standardization of language, useful interventions towards a positive result, especially in the prevention of risks to this population.^(5,7)

In face of the work diversity of nurses in occupational health, the additions of activities not contained in the NIC made by the experts as intervention activities are relevant. This emphasizes the real need of these activities to obtain the desired care, since the experts were asked to freely describe actions they deemed relevant, such as identifying and protecting especially sensitive workers and carrying out health surveillance in accordance with the protocols of health monitoring of the ministry for each job position. Occupational health nurses have on their hands the possibility not only of identifying risks, but also of complying with legislation that promotes environmental control and safety.⁽¹⁰⁾

The investigated and reported activities characterize the work of nurses in the context of occupational health, with individual interventions, but mostly collective, which are very important to achieve positive results with regard to the control of the work environment in face of occupational risks, where nurses can promote a secure environment.⁽¹¹⁾

Although all activities were considered clear by at least 50% of the experts, there is still no consensus as to the clarity of the description of activities. In order to obtain an effective nursing intervention to the population in question, from a standard and evidence-based language, it is necessary a reliable interpretation of the data obtained in the evaluation of the client, from the use of nursing diagnoses. However, the relevant need for further studies of this intervention stands out, including other populations with indications for a clearer writing of the definition and activities, in addition to a better match between the title of the intervention and its definition, in order that these criteria obtain a higher score by experts in the field. And especially studies that prove the real need for adding new activities to the taxonomy, reaching an intervention of quality that faithfully represents nurses' actions regarding the environmental control to promote safety for the worker.

Conclusion

The experts considered the nursing intervention of NIC called Environmental Control: patient safety as a valid intervention for occupational health. The main activities listed as interventions to obtain environmental control for the safety of workers were the following: Determining the physical status of employees for working; Identifying the risks and stressors in the work environment (physical, biological, chemical and ergonomic); Starting the environmental modification to eliminate or minimize risks; Informing workers about the substances to which they may be exposed; Setting investigation programs in motion in the workplace for the early detection of injuries and non-professional illnesses, and setting programs in motion to promote health in the workplace in relation to the assessment of health risks.

Collaborations

Sánchez-Ayllón F contributed in idealization and project design, study execution, analysis and interpretation of data, drafting the article and final approval of the version to be published. Oliveira ACS; Morales I and Sá JD collaborated with the execution of the research, writing the article and final approval of the version to be published. Pérez PE contributed critical review of the relevant intellectual content and approved the final version to be published.

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