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Selection of experts for the development of terminological subsets of ICNP: a methodological research

Seleção de especialistas para o desenvolvimento de subconjuntos terminológicos da CIPE: pesquisa metodológica

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ABSTRACT

Objective: To develop tools for selecting experts for stages in developing terminological subsets of the International Classification for Nursing Practice (ICNP). **Method:** This is a methodological research study. The criteria identified in the integrative literature review formed the basis for two questionnaires, analyzed by 21 evaluators in two rounds. The first questionnaire was organized with six domains and 38 criteria, and the second with five domains and 23 criteria, focusing on stages of terminological subset development. A Content Validation Index ≥ 0.80 was adopted. **Results:** The criteria were allocated into five organizing domains. Four instruments were developed: i) cross-mapping – 18 criteria; ii) operational definition – 15 criteria; iii) content validation – 17 criteria; and iv) clinical applicability – 13 criteria. **Conclusion:** Instruments with criteria for selecting experts in the development of terminological subsets were developed, which, if used, can contribute to the rigor of expert selection and the safety of the validation process.

Descriptors: Validation Study; Standardized Nursing Terminology; Nursing Process.

RESUMO

Objetivo: Elaborar instrumentos para seleção de especialistas para etapas do desenvolvimento de subconjuntos terminológicos da Classificação Internacional para a Prática de Enfermagem (CIPE). **Método:** Trata-se de uma pesquisa metodológica. Os critérios identificados, na revisão integrativa da literatura, constituíram base para dois questionários, analisados por 21 avaliadores, em duas rodadas. O primeiro, organizado com seis domínios e 38 critérios, e o segundo, com cinco domínios e 23 critérios, direcionados para etapas do desenvolvimento do subconjunto terminológico. Adotou- se Índice de Validação de Conteúdo ≥ 0,80. **Resultados:** Os critérios foram alocados em cinco domínios organizadores. Elaborados quatro instrumentos: i) mapeamento cruzado – 18 critérios; ii) definição operacional – 15 critérios; iii) validação de conteúdo – 17 critérios; e iv) aplicabilidade clínica – 13 critérios. **Conclusão:** Foram elaborados instrumentos com critérios para seleção de especialistas para o desenvolvimento de subconjuntos terminológicos, que se utilizados podem contribuir para o rigor da seleção de especialistas e com a segurança do processo de validação. **Descritores:** Estudo de Validação; Terminologia Padronizada em Enfermagem; Pro- cesso de Enfermagem.

INTRODUCTION

The validation process is essential for developing clinical practice[1] due to the significance of supporting the care process with secure and accurate information. Among the different ways to validate a nursing practice element are concept analysis[2], which involves a comprehensive examination of the basic elements that make up a thought, idea, or notion; content validation[3], which focuses on the content or domain of a construct and provides inputs for formulating questions that depict the content[4]; and the analysis of clinical applicability of concepts, through which clinical indicators are identified in patients experiencing the phenomenon to be validated[5].

The concepts of nursing diagnoses, outcomes, and interventions are represented by various terminologies, such as the International Classification for Nursing Practice (ICNP). The ICNP is an enumerative and combinatory

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terminology that, until the 2019/2020 version, had its terms organized into primitive concepts structured within a model of 7 axes (focus, judgment, means, action, time, location, and client) and pre-coordinated terms representing nursing diagnoses, outcomes, and interventions[6]. These concepts are continuously reviewed and validated to eliminate redundancies and ambiguities, contributing to the relevance and currency of the terminology. Starting in 2022, the ICNP has been integrated into the hierarchical ontology model of the Systematized Nomenclature of Medicine - Clinical Terms (SNOMED-CT).

Since 2008, the International Council of Nurses (ICN) has encouraged the development of terminological subsets of the ICNP, including groupings of nursing diagnoses, outcomes, and interventions targeted at specific health situations or particular populations. These subsets can meet the need for constructing health information systems with all the benefits of using a unified nursing language[7].

Throughout the proposed methods for subset development[7-9], validation of nursing diagnosis, outcome, and intervention statements has been established as part of stages or as a specific step[9-10]. Experts play pivotal roles in ensuring the consistency of validations, involving tasks such as assessing the degree of equivalence[11] in cross-mapping the term, confirming developed content[12], defining concepts, and evaluating clinical practice data collection[13].

There is a variety of terms used to designate a professional with specific skills and knowledge in a particular thematic area, such as specialist[14], judge[3], expert[3], and evaluator[15]. In this study, the term "specialist" was chosen to refer to professionals with specific knowledge and skills in a subject area acquired through practical and academic experiences over time.

The specialist plays a crucial role in the validity research of nursing practice elements like diagnoses, outcomes, and nursing interventions. Despite its importance, inequalities related to the selection and participation of specialists can weaken the validation process, as there is a direct relationship between appropriate selection and specialist availability. Due to the time-consuming process, which demands qualitative time investment, many specialists who meet the selection criteria decline participation, leading researchers to take alternative measures such as reducing selection rigor, modifying cutoff criteria scores, or decreasing the number of specialists involved[12].

Establishing criteria for specialist selection or categorization is identified in the literature by aspects like the level of expertise, encompassing novice, advanced beginner, competent, proficient, and specialist[16]; or specialists categorized as junior, master, and senior[17]; and a scoring system based on academic qualifications[18].

However, even though these selection or categorization criteria are identified in the literature[16,17,18], none were originally developed for the validation process of nursing practice elements represented by the ICNP[19]. Consequently, adaptations sometimes occur without proper justification or alignment with the original intent. Thus, this study aimed to develop specialist selection instruments for the stages of terminological subset development within the ICNP.

METHOD

The present methodological development research[4] was conducted in three stages: (i) identification of criteria for selecting experts in validation studies of nursing diagnoses, outcomes, and interventions; (ii) validation with raters in two rounds; and (iii) structuring of instruments with criteria for selecting experts.

An integrative literature review was conducted in six steps to identify selection criteria for experts in validation studies of nursing diagnoses, outcomes, and interventions[20]. The research question was: "What criteria are used to select experts to validate elements of nursing practice (diagnoses, outcomes, and/or nursing interventions)?"

For the search and selection of studies, databases were accessed through the *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* (CAPES) portal: National Library of Medicine (PubMed), *Biblioteca Virtual em Saúde* (BVS), Cumulative Index to Nursing and Allied Health Literature (CINAHL), SCOPUS, Web of Science, and Scientific Electronic Library Online (SciELO). *Descritores em Ciências da Saúde* (DeCS) and Medical Subject Headings (MeSH) search terms were combined using Boolean operators: ("Estudos de Validação" OR "Validation Studies" OR "Estudios de Validación" OR "Estudos de Validação como Assunto" OR "Validation Studies as Topic" OR "Estudios de Validación como Asunto") AND ("Diagnóstico de Enfermagem" OR "Nursing Diagnosis" OR "Diagnóstico de Enfermería" OR "Processo de Enfermagem" OR "Nursing Process" OR "Proceso de Enfermería" OR "Terminologia Padronizada em Enfermagem" OR "Standar-

dized Nursing Terminology" OR "Terminología Normalizada de Enfermería").

A librarian assisted in the selection of keywords. Articles that validated ICNP nursing diagnoses, outcomes, and/or interventions published in Portuguese, English, or Spanish were included. Literature reviews, editorials, and preliminary notes were excluded. The year 1996, when the alpha version of the ICNP was published, was set as the time limit for the research. A total of 1,724 articles were identified. Of these, 720 were duplicates, 778 were irrelevant, and nine were secondary studies. A total of 217 articles were read in full, and 127 were included. A specific supplementary search was performed for ICNP validation studies in the CAPES Catalog of Theses and Dissertations and international articles cited in the included articles, yielding 26 publications: 11 articles, ten PhD dissertations, and five master's theses. Thus, the final sample consisted of 153 documents (Figure 1).

Using the criteria for expert selection extracted from the publications, an instrument was developed based on the domains of the Lattes Curriculum: academic background, additional education, clinical/professional experience in nursing, duration of clinical/professional experience in nursing, research experience, and scientific production, and participation in events.

The validation phase of the identified literature criteria with reviewers was conducted in two rounds, and the selection of the expert sample was purposive. Based on the literature identified in the previous stage, the first and last authors of the articles (considering their highest contribution to the research) and the study supervisors

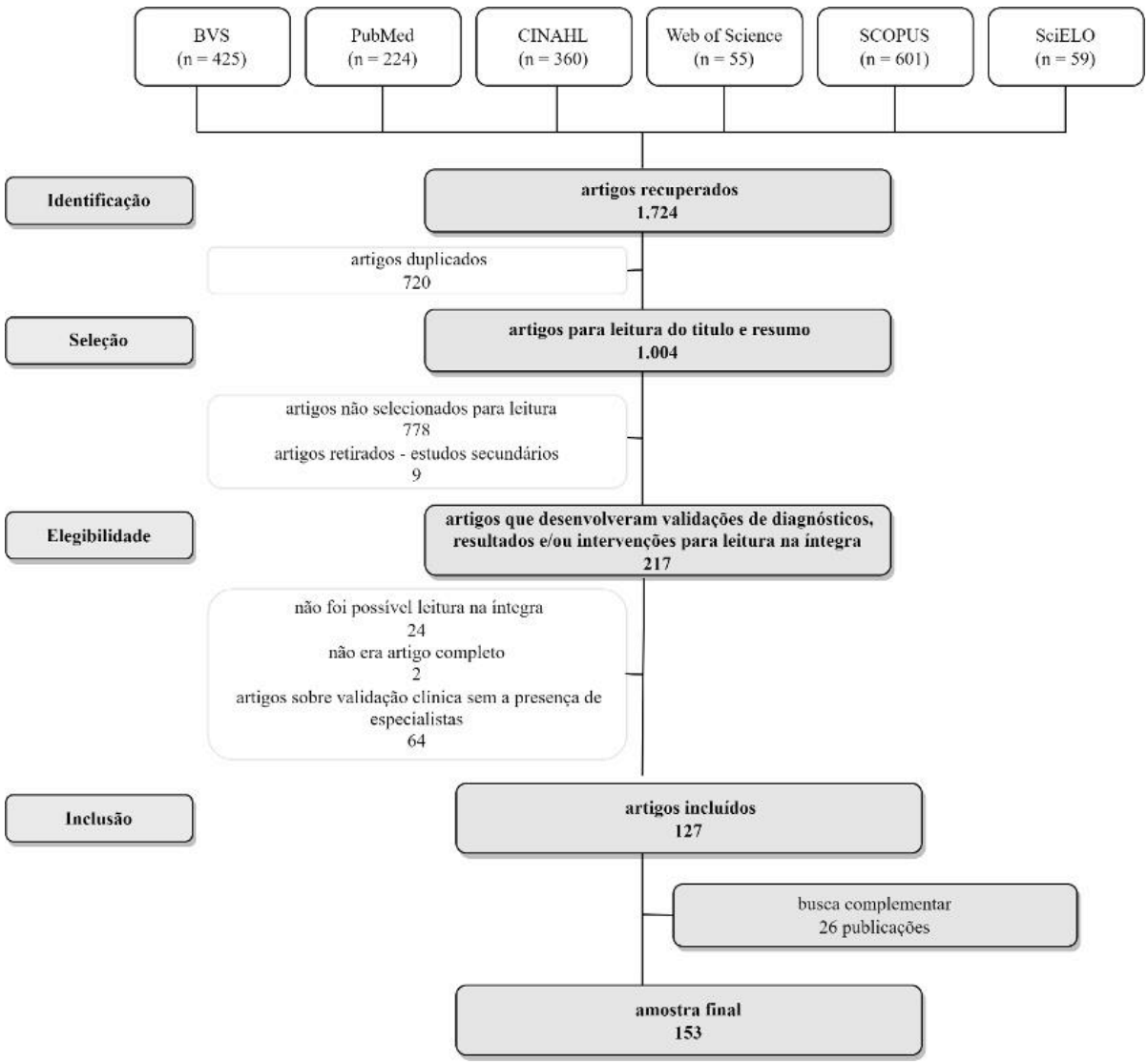

Figure 1 - Flowchart of study selection included in the research. Curitiba, PR, Brazil, 2023

were selected. In addition, coordinators of ICNP centers in Brazil and around the world were sought through the ICN website. As a result, 73 researchers were invited, of which 60 were article authors, and 13 were ICNP center coordinators. The stages I and II instruments were developed and distributed through Google Forms. The 73 reviewers received an electronic message with an invitation letter, and after agreeing to participate, the informed consent form was provided.

In the first round, 11 evaluators accepted and completed the instrument, ten from Brazil and one from Ireland. In the second round, 16 evaluators participated, including 12 from Brazil, one from Ireland, two from Norway, and one from Poland. Six evaluators took part in both rounds.

In the first round, the expert analysis focused on the importance of each criterion for selecting experts in developing ICNP terminology subsets aligning the criteria with their respective domains. In the second round, the experts assigned weights to the importance of each criterion for the stages of ICNP terminology subset development: cross-mapping, operational definition of concepts, content validation of concepts, and analysis of clinical applicability of concepts.

In the first round, criterion importance was analyzed using a four-point Likert scale (1 = not important; 2 = somewhat important; 3 = important; 4 = very important). To assess the agreement on the allocation of criteria to their respective domains, the Concordance Index (CI) was employed. This index was calculated by dividing the number of participants who considered the criterion important by the total number of participants, then multiplied by 1.0. Criteria reaching an index ≥ 0.80 were considered to belong to their respective domains. A section was provided for evaluators to record comments, suggestions, and/or recommendations, which were utilized to identify new criteria and/or domains, and any necessary alterations.

In the second round, a four-point Likert scale (1 = not important; 2 = somewhat important; 3 = important; 4 = very important) was also used to allow the assignment of weighted importance scores to the criteria directed towards each stage of terminological subset development.

The collected data were organized in a Microsoft Office Excel spreadsheet. The alignment of criteria with their allocated domains was restructured based on expert suggestions. To analyze the importance of each criterion in selecting experts for the development of ICNP terminological subsets and for specific stages of terminological subset development, the Content Validity Index (CVI) was utilized. The CVI was calculated by dividing the number of responses rated 3 and 4 by the total number of responses(21). Criteria reaching an index ≥ 0.80 were considered important. This is not a measurement instrument but rather a tool for expert selection, so psychometric criteria were not applied.

The average CVI was calculated to determine the weight each domain would have in the final instrument. This was achieved by summing the individual CVIs of the validated criteria within each domain and then dividing by the total number of validated criteria. To establish weights for the criteria, the individual CVI was considered. Subsequently, four instruments were developed with the criteria for selecting experts to develop ICNP terminological subsets. One for cross-mapping, one for operational definition, one for content validation, and one for clinical applicability analysis.

For reference scoring purposes, weighted values ranging from zero (0) to 100 were assigned to domains and criteria for each instrument. These values were allocated from highest to lowest, resulting in partial and total scores. A higher score indicates greater expertise.

To generate scores characterizing the expertise of selected nurses, response options were established. The scores for each response option were established concerning their corresponding CVI, and the established value was divided by the total number of options. This allowed the criteria to be ranked from highest to lowest value.

Based on years of experience[16], differentiated values were established as follows: ≤ 6 months; > 6 months to 3 years; > 3 years to 5 years; and > 5 years. For presentations, publications, and/or event participation, values ranging from zero to seven occurrences were assigned to each option according to the total value assigned to the evaluated criterion and within the logic of the expertise scaling. The total criterion value was assigned to the "yes" option for binary response options.

A Google Sheets spreadsheet was created for each instrument, and an online copy was downloaded for archival purposes. The domains were omitted, and the criteria were converted to questions to facilitate the use of the instrument.

The ethical principles outlined in Resolution No. 466/2012 were observed and respected. This research was approved by the Research

Table 1 – Domains and criteria from the first round validated and not validated by the evaluators (n = 11), with their respective CVI on the importance for expert selection and CI on the criterion's domain allocation. Curitiba, PR, Brazil, 2023

Domain / Criteria	CVI	CI 2
Academic background		
Doctorate in any field of knowledge	0,60	0,60
Doctorate in Nursing	1	1
Doctorate in fields related to the nursing domain	0,60	0,70
Doctorate related to ICPN	0,90	0,90
Master's in any field of knowledge	0,30	0,40
Master's in Nursing	1	1
Master's in fields related to the nursing domain	0,40	0,60
Master's related to ICPN	0,90	0,90
Specialization in any field of knowledge	0,30	0,50
Specialization in Nursing	0,80	0,90
Specialization in fields related to the nursing domain	0,50	0,90
Specialization related to ICPN	0,60	0,70
Additional education		
Participation in scientific events unrelated to the ICPN theme	0,20	1
Participation in scientific events related to the ICPN theme	0,80	0,90
Clinical/professional experience in the field of nursing		
Experience in providing care using the Nursing Process	1	1
Experience in applying all stages of the Nursing Process	1	1
Experience in providing care using the ICPN	1	1
Participation in commission/committees related to the Nursing Process	0,80	1
Years of clinical/professional experience in the field of nursing		
Time between 6 months and 11 months and 29 days	0,50	0,70
Minimum of 1 year	0,40	0,60
Minimum of 2 years	0,50	0,60
Minimum of 3 years	0,50	0,60
Minimum of 4 years	0,40	0,50
Minimum of 5 years	0,50	0,60
Minimum of 10 years	0,40	0,50
Experience in research and scientific production		
Leader of a research group focused on studying ICPN, affiliated with the Directory of Research Groups in Brazil (Lattes/CNPq), or participation in a research group within the thematic area affiliated with science-supporting organizations in the country (adjusted criterion for foreign evaluator)	1	1
Leader of a research group in the ICPN thematic area	0,90	0,90
Participation in a research group within the ICPN thematic area affiliated with the Directory of Research Groups in Brazil (Lattes/CNPq), or participation in a research group within the thematic area affiliated with science-supporting organizations in the country (adjusted criterion for foreign evaluator)	0,80	0,80
Participation in the research group of the ICPN Center within the PPGENF-UFPB program	1	1
Participation in a research group within the thematic area	0,80	0,90
Member of an association in the field of the study	0,60	0,90
Publication of full-length articles in journals within the thematic area	0,80	0,90
Publication of book chapters related to the thematic area	0,90	1
Publication of works related to the thematic area in conference proceedings	0,70	0,90
Presentations of work related to the thematic area at conferences, congresses, meetings, forums, symposiums, workshops, roundtables, panels, and seminars	0,80	0,90

Participation in events		
Participation in nursing conferences, congresses, meetings, forums, symposiums, workshops, roundtables, panels, and seminars.	0,40	0,70
Participation in nursing conferences, congresses, meetings, forums, symposiums, workshops, roundtables, panels, and seminars related to the thematic area	0,80	0,90
Participation in conferences, congresses, meetings, forums, symposiums, workshops, roundtables, panels, and seminars in related fields	0,30	0,70

Legend: CI = Concordance Index; CVI = Content Validation Index.

Table 2 - Validated and non-validated domains and criteria by evaluators, according to the ICNP subset's development stage, with the corresponding CVI for each stage. Curitiba, PR, Brazil, 2023

Stage of ICNP subset development Critério	**Validation of cross-mapping**	**Validation of the operational definition of concepts - nursing diagnoses, outcomes, and interventions**	**Validation of content of the concepts - nursing diagnoses, outcomes and interventions**	**Validation of the clinical applicability of the concepts - nursing diagnoses, outcomes and interventions**
		CVI		
Domain: Academic background				
Doctorate in Nursing with thesis not related to Nursing Process and/or terminology and/or health priorities (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, community)	0,12	0,12	0,25	0,12
Doctorate in Nursing with thesis related to Nursing Process and/or terminology (not necessarily ICNP) and/or health priorities (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, community)	0,93	0,93	1	0,87
Doctorate with ICNP-related dissertation	0,87	0,93	1	0,81
Master's in Nursing with a thesis not related to the nursing process and/or terminology and/or health priorities (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, community)	0,18	0,25	0,31	0,31
Master's in Nursing with a dissertation on Nursing Process and/or terminologies (not necessarily ICNP); and/or health priorities (health conditions, clinical care specialties, nursing phenomena); and/or specific clientele (individual, family, community)	1	0,87	0,93	0,93
Master's with ICNP-related thesis	0,93	0,93	1	0,87
Specialization with coursework in nursing related to nursing process and/or terminology; and/or health priorities (health conditions, clinical care specialties, nursing phenomena); and/or specific clientele (individual, family, and community)	0,87	0,75	0,81	0,87

Domain: Clinical/professional experience in the field of nursing				
Experience in operationalizing any of the steps of the Nursing Process in clinical practice	1	1	1	0,93
Experience in operationalizing all steps of the Nursing Process in clinical practice	1	1	0,87	0,93
Experience with the use of ICNP in clinical practice	0,93	0,81	0,87	0,87
Participation in ICNP-based nursing process commissions/committees	0,87	0,93	0,93	0,87
Domain: Time spent in clinical/professional nursing practice				
Time ≤ 1 year, 11 months, and 29 days of clinical practice experience with nursing process and/or nursing terminology and/or health priority (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, and community)	0,5	0,43	0,68	0,75
Time ≥ 2 years of clinical practice experience with nursing process and/or nursing terminology and/or health priority (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, and community)	1	0,87	0,87	0,87
Domain: Experience in research and scientific production				
Leader and co-leader of a research group focused on studying ICNP	0,93	0,81	0,81	0,75
Leader and co-leader of a research group on the Nursing Process and/or nursing terminology (not necessarily ICNP)	0,81	0,56	0,75	0,62
Participation in a research group on the Nursing Process de Nursing and/or nursing terminology (not necessarily ICNP) and/or health priority (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, and community)	0,81	0,87	0,87	0,87
Participation in ICNP Center	0,93	0,87	0,87	0,81
Participation in a research group focused on ICNP as a study area	0,93	0,87	0,87	0,81
Publication of full-length articles on Nursing Process and/or ICNP	0,81	0,87	0,81	0,75
Publication of book chapters on nursing process and/or ICNP and/or health priorities (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, community).	0,81	0,75	0,81	0,62
Domain: Participation in events				
Participation in nursing conferences, congresses, meetings, forums, workshops, roundtables, panels, seminars, and symposia on Nursing Process and/or nursing terminology and/or health priorities (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, community)	0,56	0,43	0,56	0,75

Participation in ICNP-related scientific events	0,68	0,68	0,68	0,62
Paper presentations on nursing process and/or nursing terminology and/or health priority (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, and community) in a conference, congress, meeting, forum, day, round table, panel, seminar, symposium.	0,93	0,81	0,87	0,75

Table 3 - Distribution of validated domains and criteria according to each stage of development of the ICNO subset, with the corresponding CVI of the criterion and the mean of the CVIs of the criteria of each domain. Curitiba, PR, Brazil, 2023

Criteria	IVC	Média dos IVCs
Step: Validation of cross-mapping		
Domain: Time of clinical/professional practice in the field of nursing		1
Time ≥ 2 years of clinical practice experience with nursing process and/or nursing terminology and/or health priority (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, and community).	1	
Domain: Clinical/professional experience in the field of nursing		0,95
Experience in operationalizing any of the steps of the Nursing Process in clinical practice	1	
Experience in the operationalization of all steps of the Nursing Process in clinical practice	1	
Experience with the use of ICNP in clinical practice	0,93	
Participation in commission/committees on Nursing Process based on ICNP	0,87	
Domain: Participation in events		0,93
Paper presentations on nursing process and/or nursing terminology and/or health priority (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, and community) in a conference, congress, meeting, forum, day, round table, panel, seminar, symposium.	0,93	
Domain: Academic background		0,92
Master's Degree in Nursing with dissertation on nursing process and/or terminology (not necessarily ICNP); and/or health priority (health conditions, clinical care specialties, nursing phenomena); and/or specific clientele (individual, family and community).	1	
Doctorate in Nursing with dissertation related to nursing process and/or terminologies (not necessarily ICNP); and/or health priority (health conditions, clinical care specialties, nursing phenomena); and/or specific clientele (individual, family and community).	0,93	
Master's thesis related to ICNP	0,93	
Doctorate with dissertation related to ICNP	0,87	
Specialization with course work in nursing on nursing process and/or terminologies; and/or health priority (health conditions, clinical care specialties, nursing phenomena); and/or specific clientele (individual, family and community)	0,87	
Domain: Experience in research and scientific production		0,86
Leader and vice-leader of an ICNP-focused research group	0,93	
Participation in an ICNP center	0,93	
Participation in an ICNP focused research group	0,93	
Leader and vice-leader of a nursing process and/or nursing terminology research group (not necessarily ICNP)	0,81	
Participation in a research group on nursing process and/or nursing terminology (not necessarily ICNP) and/or health priorities (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, and community).	0,81	
Publication of full-length articles on the nursing process and/or ICNP	0,81	

Publication of book chapters on nursing process and/or ICNP and/or health priorities (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, and community).	0,81	
Step: Validation of the operational definition of concepts		
Domain: Clinical/professional experience in the field of nursing		0,93
Experience in operationalizing any step of the nursing process in clinical practice	1	
Experience in operationalizing any of the nursing process steps in clinical practice	1	
Participation in ICNP-based nursing process commissions/committees	0,93	
Experience in using ICNP in clinical practice	0,81	
Domain: Academic background		0,91
Doctorate in nursing with a dissertation related to nursing process and/or terminology (not necessarily ICNP) and/or health priorities (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, and community).	0,93	
Doctorate with a dissertation related to ICNP	0,93	
Master's with a thesis related to ICNP	0,93	
Master's in Nursing with dissertation on nursing process and/or terminologies (not necessarily ICNP); and/or health priorities (health conditions, clinical care specialties, nursing phenomena); and/or specific clientele (individual, family, and community)	0,87	
Domain: Time spent in clinical/professional nursing practice		0,87
Time ≥ 2 years of clinical practice experience with nursing process and/or nursing terminology and/or health priority (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, and community).	0,87	
Domain: Experience in research and scientific production		0,85
Participation in research group on nursing process and/or nursing terminology (not necessarily ICNP) and/or health priorities (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, and community).	0,87	
Participation in an ICNP center	0,87	
Participation in an ICNP focused research group	0,87	
Publication of full-length articles on nursing process and/or ICNP	0,87	
Leader and vice-leader of ICNP focused research group	0,81	
Domain: Participation in events		0,81
Paper presentations on nursing process and/or nursing terminology and/or health priority (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, and community) in a conference, congress, meeting, forum, day, round table, panel, seminar, symposium	0,81	
Step: Content validation of concepts		
Domain: Academic background		0,94
Doctorate in Nursing with thesis related to Nursing Process and/or nursing terminology (not necessarily ICNP) and/or health priorities (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, and community)	1	
Doctorate with thesis related to ICNP	1	
Master's degree with dissertation related to ICNP	1	
Master's degree in Nursing with dissertation on Nursing Process and/or terminologies (not necessarily ICNP); and/or health priorities (health conditions, clinical care specialties, nursing phenomena); and/or specific clientele (individual, family, and community)	0,93	
Specialization with course completion work in Nursing on Nursing Process and/or terminologies; and/or health priorities (health conditions, clinical care specialties, nursing phenomena); and/or specific clientele (individual, family, and community)	0,81	
Domain: Clinical/professional experience in the field of nursing		0,91
Experience in operationalizing one of the steps of the nursing process in clinical practice	1	
Participation in ICNP-based nursing process commissions/committees	0,93	
Experience in operationalizing any of the nursing process steps in clinical practice	0,87	
Experience in using ICNP in clinical practice	0,87	

Domain: Time of clinical/professional practice in the field of nursing		0,87
Time ≥ 2 years of clinical practice experience with nursing process and/or nursing terminology and/or health priority (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, and community)	0,87	
Domain: Participation in events		0,87
Presenting work on the nursing process and/or nursing terminology and/or health priorities (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, and community) at conferences, congresses, meetings, forums, workshops, roundtables, panels, seminars, symposia.	0,87	
Domain: Experience in research and scientific production		0,84
Participation in research groups on nursing process and/or nursing terminology (not necessarily ICNP) and/or health priorities (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, and community).	0,87	
Participation in ICNP centers	0,87	
Participation in research groups focused on ICNP as a field of study	0,87	
Leading and co-leading ICNP-focused research groups	0,81	
Publication of full-length articles on nursing process and/or ICNP	0,81	
Publication of book chapters related to Nursing Process and/or ICNP and/or health priorities (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, and community)	0,81	
Step: Analysis of clinical applicability of concepts		
Domain: Clinical/professional experience in the field of nursing		0,90
Experience in operationalizing any stage of the nursing process in clinical practice	0,93	
Experience in operationalizing all stages of the nursing process in clinical practice	0,93	
Experience using ICNP in clinical practice	0,87	
Participation in ICNP-based nursing process committees/boards	0,87	
Domain: Academic background		0,87
Master's in Nursing with a dissertation on nursing process and/or terminology (not necessarily ICNP); and/or health priorities (health conditions, clinical care specialties, nursing phenomena); and/or specific clientele (individual, family, and community).	0,93	
Doctorate in Nursing with a dissertation related to nursing process and/or terminologies (not necessarily ICNP); and/or health priorities (health conditions, clinical care specialties, nursing phenomena); and/or specific clientele (individual, family, and community)	0,87	
Master's with a thesis related to ICNP	0,87	
Specialization with coursework completion in nursing on nursing process and/or terminologies; and/or health priorities (health conditions, clinical care specialties, nursing phenomena); and/or specific clientele (individual, family, and community)	0,87	
Doctorate with a dissertation related to the ICNP	0,81	
Domain: Time spent in clinical/professional nursing practice		0,87
Time ≥ 2 years of clinical practice experience with nursing process and/or nursing terminology and/or health priority (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, and community).	0,87	
Domain: Experience in research and scientific production		0,83
Participation in a research group on nursing process and/or nursing terminology (not necessarily ICNP); and/or health priorities (health conditions, clinical care specialties, nursing phenomena); and/or specific client populations (individual, family, and community).	0,87	
Participation in an ICNP center	0,81	
Participation in a research group focused on ICNP as an area of study	0,81	

Ethics Committee (CEP) under approval number 4.884.821.

RESULTS

The criteria identified in the literature, organized into domains based on the Lattes curriculum and the first-round analysis by the evaluators, are presented in Table 1. There were six domains with 38 criteria, of which five domains and 19 criteria were validated (CVI ≥ 0.80).

The criteria for expert selection include those related to academic background, additional education, clinical experience, research and scientific production, and participation in scientific events. In addition, criteria were identified from author references (Table 1).

Although none of the criteria in the "Clinical/Professional Experience in Nursing" domain reached a CVI ≥ 0.80, it was decided to retain them for evaluation in the second round based on the evaluators' comments and the frequent identification of the criteria in the validation studies.

Based on the evaluators' comments, the wording of some criteria was changed. Regarding the domain affiliation of the criteria, the criterion "Participation in scientific events related to ICPN" was moved to another domain, and two new criteria were developed: "Ph.D. in Nursing with a thesis not related to the nursing process and/or terminology and/or health priority (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family, and community)" and "Master's in Nursing with a dissertation not related to the nursing process and/or terminology and/or health priority (health conditions, clinical care specialties, nursing phenomena) and/or specific clientele (individual, family and community)". Thus, the second-round questionnaire consisted of five domains and 23 criteria.

Table 2 shows the domains and criteria organized according to the stages of terminology subset development, each with its respective CVI.

Table 3 shows the domains and validated criteria organized according to the stages of terminology subset development, each with its corresponding CVI.

The four tools for the stages of developing terminology subsets, along with their respective questions, response options, and scores, are presented in the following links:

For cross-mapping:
https://docs.google.com/spreadsheets/d/1ADtzFn5H-V9qnutYdFl2QV8Jngf_4z9GtlpBMTAYe1w/edit?usp=sharing

For operational definition:
https://docs.google.com/spreadsheets/d/1JuIfGDZGIl0D_ZBCPcT54eDlHG_GcV5nH2NoGs9KUvc/edit?usp=sharing

For content validation:
https://docs.google.com/spreadsheets/d/1KvBt25ClnsXnIY-u76LwzxhmZe-xof3ImPCifPtjXYM/edit?usp=sharing

For analysis of clinical applicability:
https://docs.google.com/spreadsheets/d/1ss-S8aGU14eYmN_L28NglrIvtYPbjs5Bxhbp56WJSi8/edit?usp=sharing

DISCUSSION

The literature review on expert selection criteria confirmed the problem identified in the introduction of this article regarding the diversity of criteria and their use, demonstrating a lack of standardization.

Although the authors of the original criteria are referenced in validation studies, the research reviewed showed that the original criteria are often adapted to meet the specific needs of different types of validation. While such adaptations broaden the possibility of expert participation, they do not maintain coherence with the original proposal. In this respect, the lack of standardization limits comparison between studies and, in some cases, introduces selection bias.

The professional experience supported by the applying the nursing process in Brazil is mandated by a resolution[22]. However, it is associated with challenges in certain contexts, such as excessive workload and lack of time[23], problematic nurse-patient relationships[24], insufficient time and lack of proper documentation[25], and weaknesses in academic training[26]. Thus, nurses identified as users of the nursing process in clinical practice are considered distinct professionals within the country.

Participation in a nursing process committee/commission supports the implementation and operationalization of its stages in health services and allows nurses from different positions/roles to contribute to developing structured and integrated planning[27]. As such, nurses' involvement in such working groups can refine and/or add important knowledge that distinguishes them as experts.

Experience with lived phenomena is made possible by time, which is widely used as a criterion for expert selection in validation studies. There are a variety of indications for the minimum prac-

tice time to select experts with clinical practice experience, such as studies seeking experts with one year[28], two years[14], three years[29], four years[30], and five years[31] of experience. This heterogeneity complicates the decision-making process regarding the appropriate timeframe for recruiting experts.

The non-validation of any criteria within the domain of "time of clinical/professional experience in nursing" raises the discussion that selecting experts with less than one year of experience may indicate an insufficient range of experience, while selecting experts with more than five years of experience may hinder participation in validation studies due to the various activities in which these professionals may be involved. At this point, it is important not to enforce the criterion rigidly but to clarify that the length of experience limits participation.

Regarding the validation of criteria within the "Academic education" domain, the importance of those directing the selection of nurses with higher education beyond graduation is evident. Postgraduate education in nursing in Brazil is developing and enhancing, reflected in the increased production of knowledge and the training of master's and doctoral graduates[32]. This can lead to comprehensive competencies and skills rooted in specific themes, contributing to the profession's advancement by integrating new knowledge and practices in clinical care. One of the authors proposing criteria for expert selection indicates a doctoral degree as a high level of expertise[18]. However, it is worth reflecting that expertise arises from a combination of factors, among which practical experience stands out.

The significance of the criterion related to the nurse's familiarity with the ICNP terminology is notable[30,33]. Learning about NANDA-I is encouraged during the education of future nurses. In practical application within Brazilian healthcare settings, NANDA-I is more prevalent than ICNP[34]. Therefore, experienced Brazilian nurses in ICNP are hard to come by. Developing and using terminological subsets for different health priorities and/or specific patient groups can contribute to nurses' clinical experience aimed at mitigating this challenge. Presenting and discussing these subsets in the context of the teaching-learning process can encourage students to utilize such subsets in academic and clinical environments.

The non-validation of the criterion "Specialization related to ICNP" can be explained by the fact that this specialization enhances knowledge for a specific area without necessarily resulting in an advanced level of expertise related to the terminology. The low CVI values provided to the criteria within the "Academic education" domain, applicable to "any field of knowledge" or "in areas related to nursing", reveal the search for nurses with education in their area. It should be emphasized that academic education in health-related fields can contribute to expanding the nurse's perspective during care planning. For instance, a nurse with a background in computer science is expected to uniquely contribute to understanding the ontological structure and/or computational representation of ICNP.

Scientific events play an important role in nursing education, enabling the updating, and disseminating of knowledge and innovations. Noteworthy are the contributions made by the Brazilian Nursing Association (ABEn) in advocating for and consolidating nursing education, scientific research, and its work as a social practice. This includes interaction with national and international organizations and disseminating studies and works relevant to the profession[35]. Participation in events related to one's thematic area of interest provides opportunities for technical and scientific discussions, at regional and cultural levels, leading to reflections that can impact a nurse's practice. This enriches their experiences and, consequently, their level of expertise.

In addition to academic training, clinical experience, and event participation, other criteria confer expertise on professionals, such as those related to "research and scientific production experience". Publication of articles, book chapters, and presentation of work at scholarly events represent the outcomes of knowledge production, whether individually or through collaborative efforts in research groups.

By focusing on criteria that seek nurses who are members of research groups linked to the Brazilian Directory of Research Groups (Lattes/CNPq) (adjusted for foreign participants), the fact that this directory contains an inventory of scientific and technological research groups active in the country was considered. This linkage makes it possible to identify and track research developments that represent ongoing efforts to build knowledge in the field over time[36]. Conversely, reviewer feedback suggesting removing this linkage points to the importance of considering research groups not affiliated with the directory that also contribute to the construction of nursing knowledge.

Participation in ICNP centers also contributes to the acquisition of expertise by nurses, as exemplified by the activities of researchers in the Brazilian ICNP center, such as the development of terminological subsets for different health priorities and/or specific patient groups[30, 37].

The criteria "membership in a thematic area association" and "publication of work related to the thematic area in conference proceedings", although not meeting the minimum validation threshold, achieved agreement in terms of domain relevance. This suggests that while association membership and conference publication are important, these attributes are not salient to subset developers at the time of expert selection. The results of the second round highlight the importance of academic education, familiarity with the operationalization of the nursing process, a minimum amount of practical experience (two years), and participation in research groups for expert selection.

On the other hand, the criteria that were not validated for any of the subset development stages raise questions, such as the issue of duration of experience. Although there is diversity in the defined timeframe for determining expertise, a period of less than two years did not emerge as a significant alternative to the subset development stages.

The criterion "scientific events related to ICNP" was not validated for any of the subset development stages, which can be justified by the absence of explicit mention of the name of the terminology in scientific events. Even though it is not explicitly mentioned, ICNP is a topic of discussion in the scientific program of events, which contributes to the dissemination and exchange of knowledge about care systematization, nursing process, and terminologies[38].

The criterion "experience with the nursing process, terminology, health priorities, and/or specific patient groups" and the criterion "experience with the operationalization of nursing process steps" showed greater importance for the cross-mapping stage. The cross-mapping process involves the analysis of the source terminology to compare and identify its convergences and divergences in the target terminology[11]. While the specific recruitment of experts to validate this process is not always necessary[39], the analysis can help improve the representation of concepts[40]. Thus, nurses who operationalize the nursing process and use terminologies for documentation stand out in cross-mapping validations.

Although not identified or analyzed in the literature review of this research, language proficiency, such as English, is a useful criterion to characterize nurses participating in the cross-mapping phase. In this regard, it is important to note that terms consistent with the structure of SNOMED-CT are used for the development of ICNP subsets, requiring developers to work with the English version of the terminology[40].

The operational definition of a nursing diagnosis or outcome describes identifying and measuring that element in practice[41]. An expert with experience in implementing the nursing process for specific health priorities and/or patient populations, guided by the ICNP, is highlighted in operational definition analyses. This distinction is also given to nurses who have academic experience in the stricto sensu modality, contributing to the recognition of the methodological research process and the existence of theoretical models, thus understanding the process of operational definition construction.

The connection with the skill to research can confer to the specialist the capacity to associate abstract concepts with measurable indicators, which facilitates the understanding of research variables and enables proving or disproving the phenomenon of interest (14, 42-43). This could explain why the "Academic background" domain was considered the most crucial by assessors for the content validation stage. For this phase, the integration between theory and practice, recognized by the composition of criteria from the validated domains, stood out for assessors, as it contributes to comprehending and analyzing the elements to be validated.

In this study, the experience in operationalizing the nursing process and academic background were highlighted as criteria for selecting experts in studies of clinical applicability analysis. Even though analyses of the clinical applicability of subsets of ICPN terminology have been identified (13,30), studies are more frequent for concept and content validations (12). This gap can be filled by applying strategies such as case study development, which makes it possible to identify nursing practice elements represented in terminology (10). For this strategy, integrating knowledge derived from the care provided over time with academic theoretical structure can support understanding relevant data that compose case studies, demonstrating the use of terminology in practice.

The prominence of the criterion "Master's with a dissertation on the Nursing Process and/or terminologies (not necessarily ICPN); and/or health priorities (health conditions, clinical care specialties, nursing phenomena); and/or specific patient groups (individual, family, and community)" indicated the preference of assessors for experts with proximity to specific themes to analyze an ICPN concept in clinical practice. The lower CVI value assigned to the criterion "Doctorate with a thesis related to ICPN" might suggest the need to value academic training directed towards other terminologies.

The instruments developed in this research provide a parameter for selecting experts in the development of ICNP terminology subset studies, allowing subset developers to direct their analyses according to the subset stage to be validated. Representing the instruments through Google Sheets offers ease of distribution and utilization by researchers in the field.

Among the limitations of this research, the low participation of assessors and the correlations of domains and criteria from the national to the international scenario stand out.

CONCLUSION

Four different instruments were developed for the selection of experts, each with different weights for domains and criteria, to address the specificities of the different stages of terminology subset development.

For the cross-mapping stage, the instrument presented 18 criteria distributed across five domains, with an emphasis on criteria from the "clinical/professional practice time in nursing" domain. For the operational definition stage, the instrument included 15 criteria distributed across five domains, with a focus on the "clinical/professional nursing experience" domain. Similarly, for the clinical applicability analysis stage, the instrument contained 13 criteria distributed across four domains, with a predominant focus on the "clinical/professional nursing experience" domain. In the content validation stage, the instrument consisted of 17 criteria distributed across five domains, with a predominance in the "Academic background" domain.

Criteria related to the "clinical/professional experience in nursing" domain stood out in the selection of experts in all stages of terminology subset development.

The results of this research contribute to the transparency and methodological rigor of specific stages in the development of ICPN terminology subsets, supporting the standardization and grounding of the expert selection process. Furthermore, they facilitate the dissemination and use of sets of nursing practice elements, motivating the inclusion of specific nursing phenomena and the dissemination of the terminology. In future studies, it is suggested to conduct research that evaluates the use of the proposed criteria in the tools developed in this research.

*Paper extracted from the PhD thesis "Elaboration of instruments with criteria for the selection of experts for the development of terminological subsets of the ICNP", presented to the Pontifical Catholic University of Paraná, Curitiba, PR, Brazil.

CONFLICT OF INTERESTS

The authors have declared that there is no conflict of interests.

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