Brazilian method for the development terminological subsets of ICNP®: limits and potentialities

Método brasileiro para desenvolvimento de subconjuntos terminológicos da CIPE®: limites e potencialidades

Método brasileño para el desarrollo de subconjuntos de terminología CIPE®: límites y potencialidades

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ABSTRACT

Reflection on the limits and potentialities of a Brazilian method for the development of terminological subsets of ICNP®, (International Classification for Nursing Practice) based on the correlation between this method and international methods. This issue has been debated by the International Council of Nurses (ICN). Although the council propose a guideline for elaboration, they encourage and reinforce the use of various perspectives and processes in the development of subsets. Brazilian Nursing needs to propose a method and deepen reflections on the use of terminological subsets of ICNP® in the reality of the country. The development of subsets in Brazil is considered incipient and the proposed method needs to be used and deepened in order to spread the use of terminology through the application of subsets.

Descriptors: Nursing; Classification; Terminology; Nursing Processes; Methods.

RESUMO

Reflexão acerca dos limites e potencialidades de um método brasileiro para desenvolvimento de subconjuntos terminológicos da CIPE®, a partir da correlação entre esse método e métodos internacionais. Este tema vem sendo debatido pelo Conselho Internacional de Enfermeiros, que, a despeito de propor um guia de elaboração, incentiva e reforça a utilização de várias perspectivas e processos no desenvolvimento de subconjuntos. A Enfermagem brasileira necessita propor um método e aprofundar reflexões sobre a utilização de subconjuntos terminológicos da CIPE® na realidade do país. Considera-se que o desenvolvimento de subconjuntos no Brasil é incipiente e que o método proposto carece de utilização e aprofundamento de modo a difundir o uso da terminologia por meio da aplicação de subconjuntos.

Descritores: Enfermagem; Classificação; Terminologia; Processos de Enfermagem; Métodos.

RESUMEN

La reflexión sobre los límites y las potencialidades de un método brasileño para el desarrollo de subconjuntos de terminología CIPE® a partir de la correlación entre este método y métodos internacionales. Este tema ha sido discutido por el Consejo Internacional de Enfermeras, que, a pesar de que propone una guía de desarrollo, fomenta y refuerza el uso de múltiples perspectivas y procesos en el desarrollo de subconjuntos. La enfermería brasileña necesita proponer un método y profundizar las reflexiones sobre el uso de subconjuntos de terminología CIPE® en la realidad del país. Se considera que el desarrollo de subconjuntos en Brasil es débil y el método propuesto carece de uso y profundidad con el fin de difundir el uso de la terminología a través de aplicación de los subconjuntos.

Descriptores: Enfermería; Clasificación; Terminología; Procesos de Enfermería; Métodos.

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The International Council of Nurses (ICN) is the body responsible for designing and developing the International Classification of Nursing Practice ICNP® (Portuguese CIPE®). Since the 1990s, ICNP® is a standardized terminology that intends to represent the elements of nursing practice reliably, accurately, and in a timely manner. Its structure is composed by a 7-Axis Model that allows the composition of nursing statements of diagnoses, outcomes and interventions[1]. In 2008, the classification became a combinatorial and enumerative terminology and, by 2015, nine versions of ICNP® were launched by the ICN.

By understanding the complexity of the classification and diversity of scenarios for its application, the ICN started to encourage the development of ICNP® terminological subsets. They are defined as a set of statements of nursing diagnoses, outcomes and interventions directed to certain health conditions, health specialties or contexts of nursing care and phenomena[2].

The ICN website (<www.icn.ch/what-we-do/icnpr-catalogues/icnpr-catalogues-875.html>) provides terminological subsets of ICNP® developed in several countries, namely, Disaster nursing (Australia); Critical care (Brazil); Nursing-sensitive outcomes (Canada); Family process (Chile); Community nursing (Scotland); Pediatric pain management (United States); Adherence to treatment - hypertension (Mexico); Dementia in community care (Norway); and Mental health (Portugal).

In Brazil, the ICNP® Research and Development Center located in the city of João Pessoa (state of Paraíba/PB) has been contributing to the development of classification through the construction and validation of terminological subsets from dissertations and theses. Examples of subsets developed so far are directed to: patients with congestive heart failure[3]; oncologic pain[4]; institutionalized elderly people[5]; elderly people in the community[6]; and people with diabetes mellitus in specialized care[7].

In addition to the finalized studies, are under way through doctoral theses, the validation of the subset for oncologic pain and the elaboration of subsets for: adults with sepsis; women in the context of vulnerability to HIV; and people with intestinal elimination stoma.

The Research and Development Center of ICNP® has been supporting studies on the subject in other postgraduate programs. Among the supported subsets are: the follow-up of development of children from 0 to 3 years of age, and for children and adolescents vulnerable to domestic violence at the School of Nursing of the University of São Paulo (USP);

the palliative care nursing for a dying with dignity at the Universidade Federal da Bahia (UFBA); the care for people with post-vaccination adverse events at the Pontifícia Universidade Católica do Paraná (PUCR); and for the elderly in primary care and for the elderly with musculoskeletal traumas of lower limbs at the Universidade Estadual do Ceará (UECE)[8].

For the construction of a terminological subset of ICNP®, in 2008 the ICN provided a ten-step guideline[2]. Two years later, Coenen and Kim presented a methodology for the development of subsets consisting of six steps and linked to the life cycle phases of the terminology: research and development; maintenance and operation; and dissemination and education[9].

The ICN encourages the use of different perspectives and processes for development of subsets since there is no specific theoretical or conceptual model for its organization[2]. Thus, in the subsets published by the ICN, are identified (in whole or in part) the steps of Coenen and Kim's guideline and method, as well as different theoretical or conceptual models. However, regardless of the adopted method, the steps for the subset development need further detailing.

The lack of detailing of the steps hinders the reproducibility of the methods. Thus, researchers working on ICNP® terminology subsets adapt the method and conduct the steps non-uniformly. The lack of uniformity was highlighted as a limitation by authors of an integrative review on the methodological course used to elaborate the subsets[10]. The authors also mention the importance of initiatives to systematize alternative methods.

Considering the need to detail the method used to anchor the studies performed or supported by the Research and Development Center of ICNP® in Brazil in a standardized way, Nóbrega et al.[11] proposed a method for developing ICNP® terminological subsets. This method was based on the analysis of the ICN guideline[2], of Coenen and Kim's method[9] and of methods used in the proposals of ICNP® terminological subsets developed in Brazilian postgraduate programs.

The reflection focus of this article is established by the presence of limits and potentialities of the steps of the method by Nóbrega et al. Thus, the aim of this article is to reflect on the limits and potentialities of the method of Nóbrega et al. for the development of ICNP® terminological subsets from the correlation between this method, the ICN guideline and Coenen and Kim's method.

The correlation between the steps of the different methods is shown in Chart 1.

Chart 1 – Correlation between the guideline of the International Council of Nurses (ICN), the method of Coenen and Kim and the method of Nóbrega et al.[11] for the development of terminological subsets of ICNP®

ICN guideline*	Method of Coenen and Kim		Method of Nóbrega et al.	
Identification of the clientele and/or health priority	RESEARCH AND DEVELOPMENT	Identification of the clientele and/or health priority	PREREQUISITE	Identification of the clientele and/or health priority
Documentation of the importance of the client group and/or health priority for nursing		No correlation		Justification of importance for nursing
				Choice of the theoretical model
Contact with ICN*		No correlation		No correlation

To be continued

Chart 1 (concluded)

ICN guideline*		Method of Coenen and Kim		Method of Nóbrega et al.
No correlation	RESEARCH AND DEVELOPMENT	Collection of terms and concepts	STEPS	Identification of terms
Use of the 7-Axis model	MAINTENANCE AND OPERATION	Mapping between identified concepts and the ICNP®		Mapping between identified terms and the ICNP®
		Modeling of new concepts		Construction of statements
Identification of evidence and literature		Modeling of new concepts		Validation of constructed statements
Development of support applications or documentation instruments		Modeling of new concepts		Validation of constructed statements
Test or validation of statements with the specific clientele and specialist nurses		Modeling of new concepts		Validation of constructed statements
Inclusion, removal or revision of statements		Modeling of new concepts		Validation of constructed statements
No correlation	DISSEMINATION AND EDUCATION	Finalization of the subset		Structuring of the subset
Working with ICN* for publication of the subset		No correlation		No correlation
Assistance to ICN* in the dissemination of subsets		Dissemination of the subset		No correlation

Note: *ICN: International Council of Nurses.

LIMITS AND POTENTIALITIES OF THE METHOD BY NÓBREGA ET AL. FOR DEVELOPMENT OF TERMINOLOGICAL SUBSETS OF ICNP®

The sequence of steps of the ICN guideline was used as a correlational basis to organize the reflection. The first step of the guideline refers to the identification of clients (individuals, families and communities receiving nursing care) and/or health priority (health conditions, clinic care specialties and environments, and nursing phenomena) the subset will be destined to[2]. This step was maintained by Coenen and Kim, while it was considered a prerequisite in the method of Nóbrega et al.

The second step of the guideline consists of a brief documentation of the importance of the selected client group and/or health priority for nursing. According to ICN, this documentation assists the subset users in different cultures and countries to understand the approach to nursing care in a given context[2]. Coenen and Kim did not explain the need for justification documentation and Nóbrega et al. also present this step as a prerequisite.

The method of Nóbrega et al. also offers a third prerequisite correlated to the second step of the guideline: the choice of the theoretical model that will base the subset development[11].

In fact, the first three steps of the guideline are indispensable conditions to begin the construction of a terminological subset. The option to use the prerequisite typology can be considered as a potential of the method by Nóbrega et al. In particular, the need to choose the theoretical model to anchor the elaboration of the subset has a fundamental role for its application. The theoretical model justifies the importance of the subset for nursing knowledge and, when applied to practice, it may guide changes in the care model.

The choice of nursing theories as a theoretical model is not mandatory in the method proposed by de Nóbrega et al. However, when the subset is anchored by nursing theories, it may potentiate a care practice based on specific knowledge of the profession.

The third step of the guideline refers to the contact with ICN to determine the existence of other groups working with the health priority and/or clientele chosen in order to allow the networking and obtain guidelines for the subset development[2]. Since this time is specifically related to the responsibility of a development agency, this step is not included in the method of Coenen and Kim nor in the method of Nóbrega et al.

Between the fourth and eighth step of the ICN guideline, there are elements directly related to the construction of the subset. Therefore, the correlation between these steps and those contained in the other two methods must be detailed to support the reflection.

The fourth step of the guideline is the use of the ICNP® 7-Axis Model for the development of nursing statements of diagnosis, outcomes and interventions. To this end, the ICN recommends following the ISO 18.104[2]. This standard was updated after the ICN guideline publication, and was denominated 'ISO 18.104 - Health Informatics - categorial structures for representation of nursing diagnoses and nursing actions in terminological systems'[12]. It comprises the rules for constructing nursing statements of diagnosis, outcomes and interventions.

Both the method of Coenen and Kim as of Nóbrega et al. approach the correlated steps with use of the ICNP®7-Axis Model. In addition, unlike the ICN guideline, these methods include an earlier and necessary step for the development of statements, which is the collection or identification of terms that will be used to compose them. Note that Coenen and Kim report the start of subset development in the step of term collection, after selecting the clientele or health priority[9]. This corroborates the idea of the method by Nóbrega et al. that considers the identification of the clientele and/or health priority as a prerequisite for the subset elaboration. Although there is correlation, the method of Coenen and Kim does not provide details on where and how the term collection is performed.

On the other hand, the method of Nóbrega et al. limits the identification of clinically and culturally relevant terms for nursing practice from three empirical bases used together or isolatedly: patients' records; literature and/or official documents of the area; and the ICNP® itself. The method emphasizes that, regardless of the form of collection (manual or automated), the terms should be decomposed, organized and standardized[11]. Such a description is considered a potential by allowing reproducibility of the method and comparisons between the presented results.

After the identification of terms, the methods of Coenen and Kim and of Nóbrega et al. recommend a cross-mapping between these terms and the terms of the most recent version of ICNP®[8-9]. In order to contribute to the development of statements, Coenen and Kim's method presents the step of new concepts modeling, which consists in the addition of new terms to ICNP® in case there are no appropriate terms in the classification to be included in the subset[9]. However, this

method does not detail the procedures required for such addition. It is expected to occur through the policy of submitting new terms available on the ICN website.

In the process of mapping terms with ICNP®, the method of Nóbrega et al. includes a process of analysis regarding similarity, comprehensiveness and restriction of non-constant terms in ICNP®[11]. After this analysis, is performed the process of elaborating definitions for non-constant terms in ICNP® and for the constant terms but without definitions. The latter are elaborated from consultation in technical and Portuguese language dictionaries, and in the literature of health and nursing areas[11].

It is important to point out that the method of Nóbrega et al. requires the construction of new concepts anchored by principles of terminological definition, among which the predictability of insertion of the new term into the ICNP® hierarchy. This anchoring allows reducing the possibility of redundant terms in the classification. In turn, when Coenen and Kim use the word 'modeling', they refer to the use of ISO 18.104, because of the understanding that this term is part of a categorial structure inserted in the context of technological development with a resource related to the area of informatics in nursing.

The final product of the cross-mapping step of the method by Nobrega et al. is a bank of nursing language terms related to the health priority or clientele, composed of constant and non-constant terms in ICNP® with their respective definitions[11].

A limitation attributed to this step is that for different subsets are elaborated different banks of terms, which are not reused by other researchers. The mapping step could be more agile if researchers could access a repository of the different banks of terms. Such access would avoid rework, because if the term has already been analyzed, the discussion would be regarding an analysis of adequacy of the proposed definition in relation to the new context.

Still related to the step of using the ICNP® 7-Axis Model of the ICN guideline, the method of Nóbrega et al. has a specific step of construction of statements of nursing diagnosis, outcomes and interventions. To do this, the method recommends using four empirical bases, in line with the ICN proposal, namely: the bank of terms resulting from the second stage; the ICNP® 7-Axis Model; the ISO 18.104 standard; and the theoretical model on which the subset will be based[11].

The method of Nóbrega et al. includes another cross-mapping between the constructed statements and the precombined concepts of ICNP®. The non-constant statements must undergo the analysis process of similarity, comprehensiveness or restriction in the same way that the isolated terms[11].

The fifth step of the ICN guideline is the identification of evidence and literature to assist in the selection of relevant statements of diagnostics, outcomes and interventions to the clientele and/or health priority[2]. This step was correlated to the step of modeling new concepts of Coenen and Kim's method because of the understanding that this procedure needs to be based on the literature of the area, as well as in relation to the validation phase of constructed statements from the method of Nóbrega et al. The validation contributes to identify the evidence of statements in practice.

In the method of Nobrega et al., the validation is part of the

stage of construction of statements. However, to facilitate the correlation between the steps of the different methods in this study, the validation of statements was considered as a step apart. The process of validating the terms (isolated or precombined) is detailed with the suggestion that the group of experts or judges who will validate the statements meet a set of pre-established inclusion criteria. Moreover, the method details the approach of experts and their analysis of statement evaluation, recommending the use of the Content Validity Index (CVI) method, which measures the percentage of experts in agreement on certain aspects of the instrument and its items.

On the one hand, the detailed description of the different steps of mapping and validation included in the method of Nóbrega et al. can be considered a potential. On the other hand, the validation is the step with greatest fragility because it depends on the adequate search of judges and their availability to participate in the validation process, which in itself is time-consuming and requires quality time from the expert. To overcome this limitation, other strategies should be incorporated, among which the process of validation by consensus among experts[13].

The sixth step of the ICN guideline refers to the development of support applications or documentation instruments for the clientele or health problem[2]. Since such documentation may include case studies and evaluation instruments to clarify and communicate the context for the statements contained in the subset[2], this step was correlated to the step of modeling new concepts in Coenen and Kim's method, and to the validation step of constructed statements in the method of Nóbrega et al. Still, these steps also correlate to the seventh and eighth steps of the guideline - test or validation of statements with the specific clientele and with specialist nurses; and inclusion, removal or revision of statements[2].

Despite the correlation, the method by Nóbrega et al. does not consider the clinical validation of statements mandatory, but rather encourages studies with the aim to clinically validate the constructed subset with the specific clientele[11]. This limitation should be treated carefully since clinical validation studies are usually linked to a single nursing diagnosis and not to a terminological subset. Thus, is established a knowledge gap that should be the object of research in the area.

The ninth step of the guideline is working with the ICN to publish the subset with the objective of developing a final text of the subset after its submission for evaluation and codification in ICNP®[2]. This step has no correlation in Coenen and Kim's method nor in the method of Nóbrega et al., because just like the step of contact with the ICN, this is a coherent moment with the responsibility of the development agency.

The tenth and final step of the guideline (assistance to ICN in the dissemination of subsets)[2] was correlated to the step of subset dissemination in Coenen and Kim's method, which emphasizes the subset distribution in both printed and electronic format[9]. This step is not cited in the method of Nóbrega et al.

In addition to the steps presented by the ICN guideline, it is noteworthy that both Coenen and Kim's method and the method of Nóbrega et al. present steps describing the finalization or structuring of the subset. In Coenen and Kim's method, the subset finalization is its representation in a computational tool called *Protégé*[9] that is used by ICN to represent ICNP® concepts[1]. In the method of Nóbrega et al, the step of structuring the subset is its finalization, and should be based on the theoretical model, as well as explain the role of nursing in its use in clinical practice[11].

In view of the above, the other limitations of the method by Nóbrega et al. are the lack of description of a step for the subset dissemination and the fact that the publication of the method is restricted to the Brazilian territory and in Portuguese language, making its access difficult for international researchers.

On the other hand, as the method by Nóbrega et al. is based on other methods, it can contribute to the development of subsets in Brazil in line with international standards. The method also has the potential to collaborate particularly for the content validation of statements, since it has a detailed description for this.

The development of terminological subsets of ICNP® is still considered incipient in the Brazilian reality. Therefore, a greater discussion in the academic and practical context of nursing is necessary for the operationalization and improvement of the method and, consequently, a greater diffusion of the terminology in the national scenario.

FUNDING

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