Updating the Standardized Terminology for Nurses' Daily Documentation

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Abstract. In Finland, the nationally unified and standardized nursing documentation model comprises the nursing process model and the Finnish Care Classification (FinCC). The aim of the study was to assess how well the further developed FinCC complies with actual nursing practices and how pragmatic and understandable it is. An e-questionnaire based on the revised version of the FinCC was sent to healthcare organizations (n=34) and Universities of Applied Sciences (n=14). Data was gathered and organized in Excel. Narrative comments were read and analyzed. The mean of questions of 17 components of both the FICND and the FICNI was over four (scale 1–5). The biggest revision of the FinCC is that different scales and evidence-based research have been utilized in the development of the terminology. Based on the findings, revisions have been made, and the new version, FinCC 4.0, will be published at the end of 2019.

Keywords. Documentation, nursing informatics, standardized nursing terminology

1. Introduction

The Finnish eHealth and eSocial strategy “Information to support well-being and service renewal” [1] emphasizes good quality and accessible social and health care information for patients, clients and professionals. Good quality data support the development of patient care processes, management of service production, decision-making, research, innovation, and industrial and commercial activities [2-3]. There is also evidence that careful nursing documentation reduces the rate of documentation errors, falls and infections, which are core nursing-sensitive outcome indicators for measuring the quality of care [4]. One of the aims of the eHealth strategy of Finnish Nurses Association [5] is also to promote the use of standardized terminology in their daily work, entering data in a variety of forms, and participate in the development of a standardized nursing language on the basis of their skills and experience.

In Finland, the nationally unified and standardized nursing documentation model comprises the nursing process model and the Finnish Care Classification (FinCC). This model with three-level hierarchy has been in use since 2003. Nursing diagnoses are

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documented by using the Finnish Classification of Nursing Diagnosis (FiCND), planned and delivered nursing interventions by using the Finnish Classification of Nursing Interventions (FiCNI), and outcomes by using the Finnish Classification of Nursing Outcomes (FiCNO). The content of the FinCC has previously been revised three times; the latest version was published in 2012. Between updates, end-users have been able to express their wishes for developing a national documentation model [6].

According to a national usability study for nurses and physicians, the nursing process model was shown to be feasible in nursing practice. However, for some users the FinCC was considered to be too detailed, multi-layered, and difficult to understand and use [6], and its usefulness in multi-professional collaboration and information exchange was not very good [7]. Five years later a national survey [8–9] showed that nurses' competency level concerning terminology-based documentation was quite good. A competency entitled "Electronic documentation according to structured national headings" showed very positive findings. In addition, very recent evidence showed that structured nursing data documented by FinCC could be retrieved quickly and easily from the electronic health record (EHR) system and be re-used for nursing management and resource planning [10, 11]. In Finland, unified data structures allow patient data to be stored in the National Patient Data Repository (Kanta) [12]. Different data structures, such as code sets, classifications, form structures, texts, register data as well as terminologies including the FinCC, are available free of charge, e.g. for vendors, on the Code Server of the National Institute of Health and Welfare (THL) [13]. The aim of the study was to assess how well the further developed, new version of the FinCC complies with actual nursing practices and how pragmatic and understandable it is. Based on the findings, revisions have been made, and the new version of the terminology will be released at the end of 2019.

2. Methods

The study had two phases. In the first phase, the FinCC expert group spent one year updating and developing the new version by examining evidence, e.g. clinical quality indicators and guidelines, other national guidelines, laws, regulations, and scientific papers. The aim in this revision was to utilize different scales (e.g. pain scales, wound scales, malnutrition risk) and evidence-based research in the development of the terminology content. Based on this work, the first draft of the FinCC version 4.0 was achieved.

In the second phase, the aim was to evaluate how the updated version of the FinCC follows the nursing standards and how practical and understandable it is. An e-questionnaire based on the revised version of the FinCC was sent to healthcare organizations (n=34) and Universities of Applied Sciences (n=14) in April 2018. A link to the questionnaire was sent by email to the contact persons at the organizations. The questionnaire included a total of 34 pages of questions concerning the 17 FiCND and FiCNI components. A Likert scale from totally disagree to totally agree (1–5) was used to assess the understandability and practicality of the main and sub-categories. Furthermore, amendment suggestions or comments were requested; it was possible to write them after each statement. The email address of a FinCC contact person was given in case of confusion in responding to the study questions. In the instructions for replying, explanations of the major changes to the main and sub-categories were given. Data was

gathered and organized in Excel. Narrative comments were read and analyzed separately by the FinCC research group (n = 8).

3. Results

The answers (n=27) were given by a group of nurses or nursing teachers, or by one nurse or nursing teacher at a time. In addition, three organizations and one physiotherapist sent their replies separately by email, and two groups of nurses specialized in wound care sent their replies only for the component Skin integrity. The mean of understandability of FiCNI was 4.73 (SD 0.52) and mean of practicality of FiCNI was almost exactly the same, 4.72 (SD 0.54) (Table 1). As a whole, the results of FiCNI were slightly better in almost all components than the results of FiCND; this concerned both qualities to be evaluated. The most practical components were Circulation in FiCND (mean 4.80, SD 0.45) and Elimination in FiCNI (mean 4.84, SD 0.38). The most understandable components were Sensory and neurological functions (mean 4.77, SD 0.43) and Pain management (mean 4.77, SD 0.54) in FiCND and Fluid balance in FiCNI (mean 4.87, SD 0.33).

Table 1. Understandability and practicality of the revised version of FinCC (n = 27).

Component	FiCND		FiCNI	
	Terms are understandable	Terms are practical	Terms are understandable	Terms are practical
	mean (SD)	mean (SD)	mean (SD)	mean (SD)
Lice cycle	4.40 (0.73)	4.35 (0.77)	4.76 (0.47)	4.76 (0.46)
Health behavior	4.36 (0.86)	4.36 (0.86)	4.51 (0.74)	4.50 (0.76)
Activities of daily living and independence	4.67 (0.57)	4.66 (0.58)	4.69 (0.59)	4.64 (0.7)
Coping	4.22 (0.93)	4.25 (0.91)	4.64 (0.61)	4.63 (0.63)
Mental capacity	4.53 (0.78)	4.52 (0.77)	4.61 (0.69)	4.60 (0.7)
Respiratory	4.23 (0.93)	4.24 (0.92)	4.74 (0.54)	4.72 (0.56)
Circulation	4.75 (0.54)	4.80 (0.45)	4.68 (0.63)	4.74 (0.51)
Fluid balance	4.40 (0.76)	4.38 (0.8)	4.87 (0.33)	4.81 (0.44)
Nutrition	4.69 (0.55)	4.67 (0.62)	4.84 (0.4)	4.80 (0.44)
Metabolic	4.31 (1.0)	4.33 (0.93)	4.76 (0.51)	4.75 (0.52)
Pain management	4.77 (0.54)	4.74 (0.56)	4.80 (0.43)	4.81 (0.42)
Sensory and neurological functions	4.77 (0.43)	4.77 (0.43)	4.82 (0.41)	4.77 (0.46)
Skin integrity	4.72 (0.56)	4.78 (0.46)	4.72 (0.6)	4.75 (0.52)
Elimination	4.73 (0.58)	4.72 (0.58)	4.85 (0.37)	4.84 (0.38)
Safety	4.73 (0.48)	4.66 (0.65)	4.66 (0.65)	4.66 (0.66)
Medication	4.69 (0.57)	4.65 (0.61)	4.79 (0.42)	4.77 (0.45)
Coordination of care and follow-up care	4.53 (0.69)	4.54 (0.65)	4.74 (0.5)	4.73 (0.52)
Total	4.56 (0.68)	4.55 (0.68)	4.73 (0.52)	4.72 (0.54)

The pain management component showed the biggest improvement and it received good feedback. The Activity component has been removed; related matters can now be found in the component Activities of daily living and independence. The component Coordination of care and follow-up care now includes all main categories related to patient counseling. In the component Health behavior there are new main categories for different kinds of addictions; some nurses preferred to document problematic or

excessive use rather than addictive use. In general, the nurses supplemented the numerical estimates with many narrative comments, which were partially contradictory. Several experts, such as wound and mental care experts, physicians and documentation expert groups in various hospitals were consulted. Based on their comments, for example, the component Mental balance was renamed as Mental capacity, and the content of the component Skin integrity is now more explicit.

Figure 1. National Nursing Documentatio Model (adapted form Mykkänen 2019).

Figure 1. shows the updated National Nursing Documentation model with the increased number of main categories ($n = 414$ compared to v3.0, $n = 215$) and decreased subcategories ($n = 218$; v3.0, $n = 330$). FICNO 1.0 remained unchanged.

4. Discussion

According to the study results, nursing professionals from different healthcare organizations and Universities of Applied Sciences were quite satisfied with the new FinCC even though some of their comments were contradictory. The respondents represent end users of several specialties, educators, and nursing administration with a versatile amount of experience of FinCC use. Thus, their opinions and interests might vary depending on these variables. This phenomenon has also been evident in earlier user surveys [6]. Regardless of the national instructions [1,4] and the evidence behind the structured data [2,3,6,10,11], the commitment to the use of the FinCC also varies. The biggest change in the new FinCC 4.0 compared to the previous one was the addition of main categories and the reduction of the number of subcategories. This solution was due to the upcoming new, national demands for EHR data content model and IT requirements. In practice, this means that when nurses choose a main category, e.g. Pain quality assessment (in the component Pain management), they can clarify the chosen intervention with either exact metric information, exact sub-category, so-called Boolean: done/not done or free text. The sub-categories have been formulated to be so concrete that their use alone provides clear information as to what intervention was given to the patient.

The biggest changes in FinCC 4.0 from the previous version were the increased use of evidence-based research and the addition of different scales. This supports the idea of consistent and clear documentation and use of FinCC [11-13] while alleviating user confusion at the same time [6,7]. However, despite the instructions given, respondents' contradictory comments made it unclear whether they understood this. In the future, the plan is to update the FinCC even more often. In addition, more scientific evidence e.g. systematic reviews and clinical guidelines need to be utilized so that we can have evidence of nursing care effectiveness [1]. The next phase is to cross-map the FinCC 4.0 with the nursing intensity system [10]. There is also interest towards cross-mapping the FinCC with the SNOMED CT in order to benefit from the use of different terminologies and to allow international health care data comparisons and benchmarking. As FinCC is available free of charge for Finnish EHR vendors at the Code Server [13], the implementation is now only dependent on the understanding, knowledge and decision-making of the nursing administration.

5. Conclusion

The new FinCC 4.0 with user guide, was published in the late 2019, and it will benefit the national Kanta services. It is important to ask end-users of different specialties and levels for feedback on the terminology to make it as clear, understandable, and uniform as possible. This helps to expand its use and re-use for several purposes. The FinCC webpage has been launched for direct feedback and communication. For the next update, the expert group need to clear the study methodology.

References

- [1] Ministry of Social Affairs and Health. Information to support well-being and service renewal. eHealth and eSocial Strategy 2020, Edita Prima, Finland, 2015. <http://urn.fi/URN:ISBN:978-952-00-3575-4>
- [2] Saranto K, Kinnunen U-M, Kivekäs E et al. Impacts of structuring nursing records: a systematic review. *Scand J Caring Sci* 28 (2014), 629–647.
- [3] Törnvall E, Jansson I. Preliminary evidence for the usefulness of standardized nursing terminologies in different fields of application: A Literature Review. *Int J Nurs Terminol Knowledge* 28 (2017), 109–119. <https://doi.org/10.1111/2047-3095.12123>
- [4] McCarthy B, Fitzgerald S, O'Shea M et al. Electronic nursing documentation interventions to promote or improve patient safety and quality care: A systematic review. *J Nurs Manag* 27 (2019), 491–501. <https://doi.org/10.1111/jonm.12727>
- [5] Ahonen O, Kouri P, Liljamo P et al. The eHealth Strategy, for Finnish Nursing Association 2015–2020. Finnish Nurses Association, Finland, 2016. https://www.nurses.fi/nursing_and_nurse_education_in_f/ehealth-strategy-of-the-finnish/
- [6] Kinnunen U-M, Junttila K, Liljamo P, Sonninen A, Härkönen M, Ensio A. FinCC and the national documentation model in EHR – user feedback and development suggestions. *Stud Health Technol Inform* 201 (2014), 196–202. doi:10.3233/978-1-61499-415-2-196
- [7] Kuusisto A, Nykänen P, Kaipio J. Usefulness of nursing documentations in multi-professional collaboration and information exchange in Finland. *J Nurs Care* 3 (2014):4.
- [8] Kinnunen U-M, Hyppönen H, Liljamo P, Saranto K. Nurses' experiences of health and social care information systems. In T. Vehko, S. Ruotsalainen, H. Hyppönen (eds.) *E-health and e-welfare of Finland. Checkpoint 2018*. National Institute for Health and Welfare (THL). Helsinki, Finland 2019. Available: <http://urn.fi/URN:ISBN:978-952-343-326-7>
- [9] Kinnunen U-M, Heponiemi T, Rajalahti E, Ahonen O, Korhonen T, Hyppönen H. Factors related to health informatics competencies for nurses - Results of a national electronic health record survey. *CIN: Computers, Informatics, Nursing* 37 (2019), 420–429. doi: 10.1097/CIN.0000000000000511

- [10] Liljamo P, Kinnunen U-M, Saranto K. Assessing the relation of the coded nursing care and nursing intensity data – towards the exploitation of clinical data for administrative use and the design of nursing workload. *Health Informatics J* 5 (2018). <https://doi.org/10.1177/1460458218813613>
- [11] Mykkänen M. Data structures in clinical data processing and secondary use of patient data. Publications of the University of Eastern Finland. Dissertations in Social Sciences and Business Studies; 202, Kuopio, Finland, 2019.
- [12] Kanta-services. 2019. <https://www.kanta.fi/en/> (assessed November 6, 2019)
- [13] THL. 2019. Code Service. <https://thl.fi/en/web/information-management-in-social-welfare-and-health-care/standardisation-of-data-and-requirements/code-service> (assessed November 6, 2019)