A comparison between the VIPS model and the ICF for expressing nursing content in the health care record

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**Abstract:**

Background: Multi-professional standardized terminologies are needed that cover common as well as profession-specific care content in order to obtain a full coverage and description of the contributions from different health professionals’ perspectives in health care. Implementation of terminologies in clinical practice that do not cover professionals’ needs for communication might jeopardize the quality of care.

Purpose: The aim of the study was to compare the structure and content of the Swedish VIPS model for nursing documentation and the international classification of function, disability and health (ICF).

Method: Mapping was performed between key words and prototypical examples for patient status in the VIPS model and terms in the ICF and its framework of domains, chapters and specific terms. The study had two phases. In the first phase 13 key words for patient status in the VIPS model and the 289 terms (prototypical examples) describing related content were mapped to comparable terms in the ICF. In phase two, 1424 terms on levels 2–4 in the ICF were mapped to the key words for patient status in the VIPS model.

Results: Differences in classification structures and content were found, with a more elaborated level of detail displayed in the ICF than in the VIPS model. A majority of terms could be mapped, but several essential nursing care concepts and perspectives identified in the VIPS model were missing in the ICF. Two-thirds of the content in the ICF could be mapped to the VIPS’ key words for patient status; however, the remaining terms in the ICF, describing body structure and environmental factors, are not part of the VIPS model.

Conclusion: Despite that a majority of the nursing content in the VIPS model could be expressed by terms in the ICF, the ICF needs to be developed and expanded to be functional for nursing practice. The results have international relevance for global efforts to implement unifying multi-professional terminologies. In addition, our results underline the need for sufficient coverage and level of detail to support different professional perspectives in health care terminologies.

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1. Introduction

Communication between health professionals, both within a profession and between professional groups, is important for the delivery of high quality care with respect to continuity of care, patient safety and patient participation in health care. Professional contributions to patient care need to be represented in the patient's electronic health record (EHR) in order to support planning, delivery and evaluation of comprehensive and safe patient care. The need to use standardized terminologies in health care and to develop multi-professional EHR systems has long been recognized. Standardized terminologies are not only needed to reduce the risk for communication breakdown but are also necessary to enable the extraction of relevant information from electronic information systems that could be used for knowledge development, benchmarking, quality improvement, resource allocation and research. In general, the use of standardized nursing terminologies has been rather scarce in health care. Traditionally, registered nurses (RNs) have used local documentation methods, often in the form of narrative descriptions. There is, however, a range of standardized nursing terminologies available that describe nursing diagnoses, interventions and outcomes (either separate or in various combinations). One example is the NANDA International Nursing Diagnoses and Classifications [1]. Another example is the International Classification for Nursing Practice (ICNP), which was established by the International Council of Nurses (ICN) [2]. The ICNP, which comprises terms for nursing phenomena and activities, is a comprehensive summation of several terminologies.

Currently, no multi-professional terminology for health care in practical use exists today, but a major effort has been directed toward this target. Such a terminology is needed to capture all types and dimensions of health care data to ensure better health care practice and more appropriate resource allocation. The work of multiple professional groups (e.g., nurses, physiotherapists and occupational therapists) needs representations in EHRs in a way that makes the information retrievable for multiple purposes. Standardized Nomenclature of Medicine – Clinical terms (SNOMED-CT) [3] has been translated into several languages and its development for practical use has been initiated. Medicine has a long tradition of using standardized terminologies (e.g., the World Health Organization (WHO) approved International Classification of Diseases (ICD)) [4]. Further, part of the current WHO family of classifications is the international classification of function, disability and health (ICF) [5], which provides a complementary functional perspective to ICD based on the knowledge areas of other health domains. The ICF was developed primarily by physio- and occupational therapists. Currently, the VIPS model has been widely used since the early 1990s by RNs in Sweden [6] and other Nordic countries for nursing documentation. The ICF has recently been introduced for multi-professional use in some fields of health care in Sweden. However, there has not been any critical analysis of the coherence of the two. This study therefore focuses on mapping terms in the VIPS model and the ICF.

1.1. The VIPS model

In Sweden, RNs’ recording in the health record has been mandatory by law since 1986 and nowadays addressed in the revised Swedish patient record act [7]. The VIPS model is the Swedish acronym for Well-being, Integrity, Prevention and Safety, which reflects four basic values underpinning nursing care [6,8]. The model was first published in 1991 [6] with the aim of providing a conceptualization of essential elements in nursing and a structure of keywords to organize nursing content in the patient record in accordance with the nursing process. To facilitate a patient-centered approach, the VIPS model focuses on the individual patient's functioning in daily life activities rather than on pathophysiological problems or organ systems. The model was the result of a structured research process that included an extensive literature review, review of records, empirical testing in clinical practice and validation with existing theoretical models in nursing [6]. The VIPS model provides a framework for nursing documentation to support nurses to acknowledge and verbalize essential data that reflects nursing practice. In this way the VIPS model helps to facilitate the structuring of information and knowledge reflecting nursing practice, as well as support teaching and research activities in nursing.

The VIPS model presents key words on two levels [6,8,9]. Level one concerns the nursing process model: assessment (nursing history, nursing status), nursing diagnosis, nursing goal, nursing intervention and nursing outcome (Fig. 1). Level two consists of a subdivision of key words under nursing history, nursing status and nursing interventions. Prototypical examples are provided for every key word on level two.

Nursing status comprises descriptions of signs and symptoms regarding a patient’s health situation and conditions influencing nursing care, as assessed from different perspectives (e.g., nurse and patient). The documentation of a patient’s health status should address the following dimensions: function, including alterations, risks and resources; comfort, both from a physical and psychosocial point of view; influencing factors/circumstances (e.g., environment, resources–demands, internal–external, positive–negative and expectations–values); aids/devices used by the patient (e.g., pharmacological, technical or psychosocial) [6,8,9].

The VIPS model has shown good content validity in many areas of nursing care, including acute surgical and medical, stroke, dementia, geriatric, pediatric, peri-operative and psychiatric care [8,10]. The VIPS model is used for recording nursing and individual care planning throughout Sweden, as well as in Denmark, Norway, Estonia and Latvia. Several software applications for the EHR have included the model. Moreover, it is taught in most nursing undergraduate programs in Sweden and Swedish textbooks in nursing have been organized according to the VIPS model.

1.2. The international classification of functioning, disability and health

WHO has developed several classifications supporting health care practice, including the ICF [5]. It was first released in 2001 and later presented (in 2007) in a version for children and youth (i.e., the ICF-CY) [11]. The purpose is not only to
describe body structure, functioning and disability but also to capture conceptions of a dynamic interaction between health conditions and contextual factors [5]. The ICF is based on a bio-psycho-social model, which combines previous models for functioning and disability [12], and consists of two separate parts with two components each: functioning and disability with the components body structures and body functions and activities and participation and contextual factors with the components environmental factors and a personal factor, which has been identified but not yet developed. The structure is presented in Fig. 2 with the component body structures and body functions presented as two separate entities for clarification of the number of terms.

Each component is made up of different chapters containing terms (levels 2–4) that are the units of the classification. In total, there are 30 chapters and 1424 terms. The maximum number of terms available to describe a person’s health and a health-related condition is 30 on the first level, 362 on the second level, 926 on the third level and 136 on the fourth level. A hierarchical coding system is used in which the components are designated by letters: b for body functions, s for body structure, d for activities and participation and e for personal factors. The components are presented in the VIPS model in Fig. 1 and in the ICF in Fig. 2.

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**Fig. 1 – Overview of the VIPS model.**

**Fig. 2 – The international classification of functioning, disability and health [5].**
Table 1 – Examples of terms and codes on four levels in the ICF conceptual frame.

<table>
<thead>
<tr>
<th>Component</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>b Body functions</td>
<td>b2 Sensory functions and pain</td>
<td>b280 Sensation of pain</td>
<td>b2801 Pain in body part</td>
<td>b28013 Pain in back</td>
</tr>
</tbody>
</table>

environmental factors. The letter is followed by a numeric code displaying the level and position of the term in the hierarchy (Table 1). Further, two figures can be added to the code that display qualifiers representing the perspectives of capacity and performance.

The ICF has gained increased attention internationally as a unifying classification system applicable to the knowledge areas and responsibilities for various health professions, including nursing. It has been suggested as a means to expand nurses’ thinking and clinical practice by adding an increased awareness of social, cultural and political dimensions of disability [13]. Further, it is regarded as a useful framework and foundation in setting goals for nursing interventions regarding acute and early post-acute rehabilitation [14]. However, the ICF is not suitable for formulating nursing diagnoses to the same extent as the NANDA [1] and the ICNP [2] that contain standardized diagnosis expressions, or considering the International Standard reference terminology model (RTM) for nursing diagnosis [15] or the use of currently established criteria for diagnoses according to the PES (problem- etiology – signs and symptoms) format [16]. However, elements in nursing diagnoses retrieved from a patient’s EHR could be classified using the ICF, but with rather low interrater agreement from 61 to 75% on a higher level and 42 to 60% on a more detailed level in the classification hierarchy [17]. The application of core sets from the ICF for nursing has been tested with acceptable results [18]. Several authors have concluded that the ICF has relevance to nursing care, but that nurses ought to take a more active part in the further development of the ICF [13,14,17,19].

The ICF is currently implemented in some areas in Sweden (primarily within residential care facilities) to support multi-professional documentation practice concerning patient status and communication between health professions and their respective knowledge domains. In Sweden, the ICF is introduced as an interface terminology replacing, or implemented in combination with, previous structures of standardized terms, often based on the VIPS model, which presents a new structure to the EHR. Comprehensive coverage is a quality factor of terminology content that needs external reference standards to be established (e.g., user requirements and domain-specific needs of content) [20]. The two terminologies have different purposes. The ICF was developed primarily from a paramedical and rehabilitation perspective. Thus, studies investigating the coherence between nursing knowledge and the ICF on a general level are lacking. It is therefore important to ascertain that the ICF provides a comprehensive content coverage in which terms are on a sufficient level of detail to support and represent specific knowledge domains and professional clinical practices within nursing. It is important that the ICF provide comprehensive coverage in order to acquire sensitive data on all aspects of a patient’s problems and needs underpinning care decisions. Because the VIPS model was developed specifically for (and is currently used successfully within) nursing practice, one approach to evaluate the nursing sensitivity of the ICF is to map the content of the ICF and VIPS model.

2. Aim

The aim of the study was to compare the structure and content of the Swedish VIPS model for nursing documentation with the ICF. This can be done by mapping the key words and prototypical examples of suggested content for patient status in the VIPS model to the framework of domains, chapters and terms in the ICF.

Three research questions guided the study:

1. To what extent can the key words in the VIPS model on levels 1 and 2 for patient status be mapped to the ICF?
2. To what extent can nursing data described as prototypical examples for patient status in the VIPS model be mapped to the terms on levels 1–4 in the ICF?
3. To what extent can the terms on levels 1–4 in the ICF be mapped to patient status in the VIPS model?

3. Methods

The study used a descriptive design by performing mapping of content in two classifications.

3.1. Material

The Swedish versions of the VIPS model [6,8] and the ICF [21] were used in this study. Thirteen of 14 key words in the VIPS model for patient status were used for comparison, along with the prototypical examples provided (this is because the ICF categorizes terms limited to patient status). Subsequently, the key words in the VIPS for nursing history and nursing interventions were not used for mapping. The selected key words in the VIPS for patient status were communication, cognition/development, breathing/circulation, nutrition, elimination, skin/integument, activity, sleep, pain/perception, sexuality/reproduction, psychosocial, spiritual/cultural and well-being. The key word composite assessment was excluded because the content reflects patient status based on assessment instruments or scales not naturally linked to other single key words. Additionally, 289 terms were identified from the prototypical examples provided for the 13 keywords. For example, the key word cognition/development consisted of eight prototypical examples of content that could be divided into 15 separate terms to be mapped (Table 2). In total, 1424 terms on levels 2–4 of the ICF were used in the mapping process, as well as 30 chapter headings.
3.2. Mapping procedure

The mapping procedure consisted of two parts. In the first part the terms were mapped to grasp the comprehensiveness and completeness of terms [22] in the ICF representing nursing sensitive information described in the VIPS. A total of 13 key words and 289 terms derived from prototypical examples in patient status in the VIPS model were mapped to terms on levels 1–4 in the ICF by two of the authors (JF and CB).

In the second part, terms on levels 2–4 in the ICF were mapped according to the key words for patient status in the VIPS model by two other authors (ME and AE). The mapping procedures were performed partly independently within the pair of authors, with final agreement reached after discussion. Excel spreadsheets were used to organize the data for comparison and descriptive statistics were applied to present the data.

4. Results

4.1. Comparison between the VIPS model and the ICF

The key words on level 1 in the VIPS model, which display the steps of the nursing process, were absent in the ICF. The ICF is a classification to describe various health conditions for function and activity, which would correspond to patient status but does not support processes, and subsequently, not the nursing process as a whole.

In all, 12 key words on level 2 in the VIPS model for patient status could be stated using terms on level 1 (chapters) in the ICF, most often found as part of a broader term or as a similar, but differently worded, term (Table 3). However, the VIPS key word well-being, a sense of one’s own perceived health and a summary of an individual’s life situation could not be mapped to the ICF. Well-being occurs in the ICF as part of looking after one’s health (d570) or assisting others (d660). Further, as an aim description for health services (e5800), health systems (e5801) and health policies (e5802), but not as a description of the health condition of the patient.

A semantically perfect match to the ICF could often be found for the keywords in the VIPS model. However, the hierarchical placement and scope of the terms were often somewhat different, which meant that several terms in the ICF were needed to cover the suggested content for a specified keyword in the VIPS model. For example, there was a perfect match in wording between chapter d3 in the ICF and the key word communication in the VIPS model, but the described content within the ICF was narrower, leading to the need to use several chapters in the ICF to cover the content for communication in the VIPS model. The relevant content was represented in the ICF chapters b1, b2, d3 and e1, reflecting three domains at the same time. One reason for that is the division in function and activity (i.e., a patient’s activity or activities, not nursing activities) (chapter b and d) in the ICF that has no parallel in the VIPS model, where a higher level of abstraction is used. On the other hand, terms for products and technology were present under eight of the key words in the VIPS model but gathered under one chapter (e1) in the ICF.

Content described as prototypical examples for the key word nutrition could be mapped to the areas of five chapters in the ICF: functions of the digestive metabolic and endocrine systems (b5), mental functions (b1), self-care (d5), products and technology (e1) and structures involved in voice and speech (e3) (Table 3). The key word sleep in the VIPS model could be mapped to the ICF as part of the broader term mental functions (b1), which was also the case with several of the key words in the VIPS model.

4.2. Content of the VIPS model mapped to the ICF

Of the 289 terms describing prototypical examples in the VIPS model, 179 (62%) could be mapped to the ICF. However, the terms in the VIPS model are described on a more aggregated and less detailed level than the ICF terms. Some of the nursing content in the VIPS model could not be mapped to the ICF.
which was most common in the areas of the patient’s own perspective and perceptions related to psychosocial or existential matters (e.g., terms related to feelings, experiences, perceptions, habits, skills, intentions, meanings or preferences of the patient or family). Further, some physical matters and a sense of well-being as a global estimation of a patient’s health condition and terms describing personal factors in the VIPS model could not be expressed by the ICF. There is a lack of terms in expressing gender, ethnicity, age and other health-related factors (e.g., fitness level, lifestyle, habits, upbringing, social background, education, profession and common behavior patterns and characteristics).

The concept of quality of life could not be mapped to the ICF though there are terms in the ICF reflecting quality related to specific areas, such as consciousness (b1102), sleep (b1343), psychomotor functions (b1471), vision (b2102), voice (b3101)
and quality of environmental factors. Terms in the ICF could be used to describe current health conditions but did not permit the description of risks or potential problems of patients. For instance, sensation of falling (b2402) could be described but not increased risk of falling. A lack of something or a need of something as part of the description of a patient's status (e.g., knowledge deficit regarding treatment and self-care management as described in the VIPS model) could not be expressed by the ICF. A patient's lack of knowledge and needs of information were missing in the ICF, whereas there were ICF terms to describe learning needs (mostly basic skills such as writing and reading) and a patient's ability to apply knowledge.

Such feelings as anxiety, fear, anger, hate, tension, sadness, sorrow, emotional instability or joy, happiness and love that are present in the VIPS model could not be explicitly mapped to the ICF. However, these feelings could be mapped on a more general level as emotional functions (b152) or from the perspective of children: functions of appropriateness of emotion (b1520), regulation of emotion (b1521) and range of emotion (b1522). Terms to describe coping strategies, loss of control, dependence and helplessness in the VIPS model could not be mapped to the ICF, although some features of psychological characteristics were described under general interpersonal interactions (d710-d729) in the ICF. The willingness of a patient to cooperate or participate, as described in the VIPS model, could not be mapped to the ICF. Further, psychosocial factors (such as feelings of security or insecurity and trust or mistrust) could not be mapped to the ICF. It is possible, however, to describe a person’s character in the ICF: for example, trustworthiness (b1267) is defined as “a mental function that produces a personal disposition that is dependable and principled, as contrasted to being deceitful and anti-social”. Hence, an assessment by an observer could be described, whereas a patient’s own feeling of trust, as present in the VIPS model, could not be mapped to ICF terms. Spiritual and cultural factors (e.g., meaning of life and perspective on death, sickness experiences, sense of belonging and sense of coherence), as present in the VIPS model, could not be mapped to the ICF. Coherence is present in the ICF in relation to organizing a logical thinking process, but description of a more holistic sense of a patient’s sense of coherence could not be mapped to the ICF.

There were terms in the ICF for sleep functions (b134) regarding amount, onset, maintenance and quality of sleep, but terms covering feelings of tiredness, exhaustion or fatigue, as present in the VIPS model, could not be mapped to the ICF. The ICF focuses on functions that should lead to personal feelings and experiences, but the actual result (e.g., the feeling of being rested or relaxed) could not be expressed. Rest is mentioned in the ICF as an end goal in relation to the function quality of sleep (b1343), which is described as “mental functions that produce the natural sleep leading to optimal physical and mental rest and relaxation”. There is a term for expressing fatigability (b4552), a function related to susceptibility to fatigue at any level of exertion. This term is considered a more precise description of exercise tolerance functions (b4555). However, fatigue in itself, as described in the VIPS model, could not be mapped to the ICF.

A term for sensation of pain (b280) does exist in the ICF, with some examples of different features of pain, but an elaborated description of the character of pain (e.g., terms for pattern, durability and intensity) that is described in the VIPS model could not be mapped to the ICF. Terms in the VIPS model for giving birth, or related to a person’s own death, could not be mapped to the ICF.

4.3. ICF terms mapped into the VIPS model

In all, 934 terms (66%) on levels 2–4 in the ICF could be mapped to the key words for patient status in the VIPS model (Fig. 3). The key word activity in the VIPS model was suitable for the largest amount of mapped terms in the ICF (n = 299), followed by the key word psychosocial (n = 187). The key words spiritual/cultural and sleep were least frequently used for mapped terms from the ICF, covering only six and eight ICF terms, respectively. There were no terms in the ICF that mapped into the key word well-being in the VIPS model. Altogether, 490 ICF terms (34%) could not be mapped into the VIPS model, including 280 terms related to body structures and 210 terms related to other issues that are not intended to be part of the VIPS patient status key words. Some anatomical terms in the ICF for the skin could be mapped to the VIPS key word skin/integument, whereas the rest of the anatomical terms could not be mapped to the VIPS. The category other issues

![Figure 3](http://dx.doi.org/10.1016/j.jmedinf.2012.05.016)
covers a range of areas not relevant for nursing and therefore not possible to map to the VIPS model (e.g., the level 2 category in the ICF for services, systems and policies) (e5).

5. Discussion

The main findings in this study were that the two models studied developed for difference purposes, had different structures and content; the content for each of the key words representing patient status in the VIPS model could not be mapped to one single category in the ICF and thus several categories in the ICF had to be used to cover the content; a majority of patient status terms in the VIPS model could be mapped to the ICF (and often on a more specific level). Further, important content of relevance for nursing, according to the VIPS model, was missing in the ICF; while the majority of the ICF terms could be mapped to the key words for patient status in the VIPS model.

In the ICF, 66% of the levels 2–4 terms could be mapped to the 12 patient status key words in the VIPS model, indicating that those terms are relevant for describing nursing care.

The categories in the VIPS model and the ICF did not correspond fully, revealing structural differences between the two, presumably due to differences in purpose and theoretical framework underpinning the classifications. The VIPS model is process-oriented, focusing on providing a documentation structure and content to reflect the complete nursing process. The ICF, in contrast, focuses solely on descriptions of the health conditions of patients and does not claim to cover the entire care process. The findings indicate that the ICF could only correspond to parts of a patient’s health status from a nursing perspective. In this study 62% of the prototypical examples provided in the VIPS model could be mapped to the ICF and 66% of the ICF terms could be mapped to the key word structure in the VIPS model. Despite differences in mapping procedures, there are resemblances with previous reports in which 46% of the terms in the ICF could be mapped to the ICNP with an exact or partial match [23]. Our findings show that a substantial portion of relevant nursing content described in the VIPS model is not covered by the currently available terms in the ICF. Other studies regarding comprehensiveness in the ICF in related knowledge domains have reported a better match between the content in assessment instruments for specific health areas with the ICF terms. Thus, reported lower figures for missing terms in the ICF were found, e.g., for 5% of the content in health related quality of life instruments [24], 20% in outcome measures for burn injuries [25], and 23% patient reported outcome measures related to hemophilia, of which 10% were concepts on a more general and unspecified level [26]. Comparison made between terms in the home care assessment instrument Inter RAI (Resident Assessment Instrument) home care and the ICF classification showed that 25% of the assessment terms could not be coded with ICF codes, of which 15% were on a general level and not precisely defined [27].

Further, the content for patient status in the VIPS model covers more areas than solely descriptions of health conditions in that self-care activities and assisting devices are also incorporated. On the other hand, environmental factors and body structures are included in the framework of the ICF together with functions and activities. The difference between function and activity is emphasized in the ICF, whereas the VIPS model focuses on activities in daily life and thus subsumes some degree of functioning. For example, the degree and quality of muscle power can be categorized in the ICF as muscle power function (b730). In contrast, in the VIPS model it is categorized as part of the key word activity and therefore focuses more on use and consequences of impairment in activities in daily life where the function is needed. In this case the ICF provides a clear distinction between function and activity, which could be useful in nursing.

One basic presumption underpinning the nursing process is the individualization of nursing care and patients’ active engagement in their own care. In nursing it is important to acknowledge the patients in their life context, which includes the family, but the ICF has a strong focus on the individual and does not include a family perspective. This finding limits the usefulness of ICF for representing family, or group-based descriptions of health status, and, as a consequence, hinders the comparison and cross reference of family-based concepts from nursing, e.g. Nursing Minimum Data Sets [28]. Surprisingly, patient participation is difficult to express using specific terms in the ICF. Patient participation is merely used as an overarching concept in the ICF and thus more precise terms describing actual participation are lacking in the ICF. The terms in the ICF reflect more of an assumingly objective assessment of a person’s health as described by health professionals and not by the patients themselves as active participants in care. A subjective perspective (e.g., regarding feelings emanating from a patient’s perceptions and preferences) is not possible to describe using the ICF. Further, a person’s sense of quality of life and well-being as subjective descriptions, present in the VIPS model, is not possible to state using the ICF, but the descriptions provided by the ICF terms can be seen as operationalizations of a more objective well-being [12]. The ICF needs to expand in these areas to include concepts of quality of life, and this might also involve expanding the conceptual model of ICF with quality of life and human development, as has been suggested in the literature [29]. Suggestions have previously been made regarding the need to expand the ICF classification, to conduct a multidisciplinary clinical modification to grasp the needs of all professionals groups [30], and the findings from this study support this suggestion. In the ICF there is a need for more specific terms (e.g., skin condition, self-care and nutrition) in several areas of central importance for nursing. Information of a patient’s skin condition is an important part of nurse assessment, regardless of clinical specialty. In the ICF protective functions of the skin (b810) cover a range of health conditions (e.g., callus formation, hardening and impairments, such as skin lesions, ulcers, bedsores and thinning of skin). More specific terms are needed in the ICF to describe skin conditions regarding color, cleanliness, injuries, dryness, rash and state of healing that cannot be expressed in the current version of the ICF. Another area of vital concern for nursing is self-care. In this respect, the ICF is too general, i.e., it does not provide terms at a sufficient level of detail. By using the ICF, a description can be made of a patient having problems with self-care (d5), e.g., with washing oneself (d510) (more precisely, washing whole body, d5101). In addition to this, nurses need to convey further details in the EHR in order to communicate how to
assist a patient (e.g., if there is a problem for the patient in reaching various parts of his or her body, using the shower or the soap, or knowing the proper order in performing personal hygiene).

The ICF is useful in describing a patient’s health status on a detailed level. However, previous reports have shown the limited usefulness of the ICF in documenting nursing diagnoses [17] or to cross reference nursing diagnostic concepts [28]. This limitation is because the ICF does not meet currently established quality criteria for nursing diagnosis [16].

To reach a domain-specific (e.g., nursing) analysis of a patient’s situation, a suitable theoretical framework underpinning the professional perspective in question is required. Such a framework would also help in the guidance of what data and information are important in assessing the current situation and for making interpretations of the assessment findings.

5.1. Methodological considerations

The use of the VIPS model to depict core nursing content for mapping with the ICF strengthened the study since it is a well researched and validated model to document nursing content in patient health records which is widely used in various clinical areas of nursing care, both nationally and internationally in Europe. In this study we choose to perform a mapping procedure between the ICF terms and health status content described in the VIPS model. Nursing diagnoses concepts were not included in the mapping as the ICF terms are not coherent with the current way of structuring and stating nursing diagnoses [1,2,16,17]. The mapping procedure has been conducted by researchers well acquainted with both the VIPS model and the ICF, and repeated discussions among the authors yielded consensus regarding the mapping of specific terms. Initially an attempt was done to utilize more explicit judgment categories in the mapping: perfect match, broader or narrower concept. However, that strategy was abandoned since the two conceptual models comprise terms on quite different levels, and it was anticipated that the terms in the ICF were generally described on a more detailed level. At the same time a broader concept could also be found high up in the classification hierarchy of the ICF. A decision was made to identify conceptual comprehensiveness and completeness between the two models. The original ICF classification was used in this study and possibly some of the areas that were missing (e.g., related to terms for children) might have been identified if the ICF-CY classification had also been used.

6. Conclusion and clinical implication

This study addressed the content coverage of the ICF as a standardized classification from a nursing point of view. The findings indicated some problems in using a classification developed from a certain professional perspective that aims to cover that field of knowledge and health care activity as a unifying classification for another professional group in health care – in this case nursing. The VIPS and the ICF operate on different levels: hence, with some degree of overlapping of the two classification systems, they could co-exist in an EHR. The ICF classification provides details on four levels that will be necessary for comprehensive documentation in the health record. However, the ICF does not provide enough coverage and detail in some areas and aspects of vital importance in nursing care. Further, the theoretical frameworks underpinning the VIPS model and the ICF, as well as differences in structure, level of detail and degree of process orientation need to be acknowledged. If the ICF is to be used in its current form and content, without the use of additional supplementing nursing-specific content, there is a high risk of missing important data and perspectives on a patients situation, which ultimately may affect the quality and safety of nursing care. The ICF has the potential for multi-professional use, and despite its elaborated details, it needs to be developed and expanded to provide a comprehensive account for nursing knowledge in health care. Further studies are needed to address the content of the ICF in relation to nursing and especially the effect of using the ICF on patient care and nurses’ ability to record and communicate nursing-specific information.

Authors’ contribution

JF, AE, ME and CB designed and planned the study, and were all active in the mapping process and analyses of the data. JF was responsible for drafting the manuscript while AE, ME and CB made critical revisions of the manuscript for important intellectual content.

Conflict of interest statement

Two of the authors (AE and ME) are developers and copyright holders of the VIPS model.

Summary table

“What was already known on the topic?”

- The VIPS model has been widely used and tested in various nursing contexts.
- A multi-professional standardized terminology is needed in health care.
- The ICF is suggested to provide a common framework and language for all health professions, including nurses.

“What this study added to our knowledge?”

- This study investigated the content validity of the ICF from a nursing perspective.
- The ICF covers most of the nursing content in the VIPS model and often with a sufficient level of details.
- Core nursing terms and nursing perspectives are missing in the ICF.
- The ICF terms can largely be mapped to the key words for patient status in the VIPS model.
REFERENCES


