Terms used by nurses in the documentation of patient progress

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Abstract
Objective: Describe the terms used in written records of patients’ progress by nurses.
Methods: Descriptive research with a quantitative method that used a software to extract terms related to 148,200 nursing documentations of patient’s progress, from 2010 to 2012, in a university hospital in Curitiba - Paraná. The terms were normalized, if appropriate, in spelling, gender, number and tense; then corpus of 2.638 terms was classified for analysis.
Results: There were problems related to the identification of the records; the use of trade names for designating artifacts used in the nursing practice; unconventional acronyms and abbreviations; and colloquial terms. Records of terms contained in standardized language of nursing diagnoses were found.
Conclusion: The language used by nurses is heterogeneous. There is a tendency to use terms of specialized language, even when there is no formal terminology standardization in the institution.
Keywords: Nursing records. Nursing. Language. Terminology.
INTRODUCTION

Nursing records consist in a type of written communication related to the patients that comprise essential elements in the process of care, as they allow permanent communication and can be used in surveys, auditing, lawsuits and planning. Clarity, objectivity, frequency and completeness are required in patient-related information. Thus, monitoring, assessment and comprehensive planning of care provided to patients are possible.

However, many nurses do not record the problems identified and neither the planning and actions performed. This situation can be one explanation for the poor visibility of the outcomes of nursing work. National and international publications indicate failures committed by nursing professionals in the process of recording of their activities, among which, poor quality of information associated to high rates of adverse effects, lack of date and time and the use of abbreviations that make it difficult to understand the records.

In this context, it is necessary to improve the process of elaboration of these records and encourage the incorporation of the steps of the nursing process, since the quality of the care delivered, among other factors, is dependent on the quality of information recorded in the patient’s record.

Nursing records must be standardized, since there are failures related to adequacy of grammar to formal language, accuracy, readability, identification, concision and use of technical terminology. Thus, language standardization in Electronic Patient Records (EPR) is expected to overcome the referred failures, resulting in greater accuracy and facilitating the exchange of information.

The use of recognized classification systems, such as diagnoses, interventions and nursing outcomes contributes to the insertion of standardized language, particularly in EPR. The construction of a database of a university hospital in northeastern Brazil was based on the identification of the terms used by nursing professionals in patients’ records. In the same study that The study that resulted in the creation of the corpus, the second stage involved only the extraction of simple and compound words, by means of filters that allow selecting some word classes. The filters “only nouns” and “compound words” were used. For the extraction of compound words, the software uses four grammar rules, considering the following associations: noun and adjective; noun, preposition and noun and; noun, preposition, adjective and noun; and noun, preposition, noun, preposition and noun.

METHODS

Descriptive research with a quantitative method that used as empirical basis nursing documentation of patients’ records in EPR of a university hospital of Curitiba, Paraná. The focus of the study was the high complexity of care in emergency and trauma.

The investigation comprised 148,299 documentations of patients’ progress, between 2010 and 2012, recorded by nurses in free language fields made available by the institution without patient identification.

The collection, organization and analysis of data were divided into three stages: pre-processing, processing and post-processing.

In the pre-processing stage, Excel software resources were used in the cleaning and preparation of databases. Also, 32,539 duplicate records were removed. The explanation for this is that, at the time of processing, secondary databases may generate double records, leading to the selection of misleading information. Thus, the database to be processed was reduced to 115,760 nursing documentations.

In order to preserve the anonymity of the professionals and reduce the amount of information to be processed, the nominal identifications of the different professionals of the healthcare team were excluded. It should be stressed that although the records used in the analysis were elaborated by nurses, names of other professionals of the health team were identified, particularly regarding actions of communication or referral.

In the processing stage, the terms were extracted using a software tool (Poronto), developed for semi-automatic construction of ontologies in Portuguese. The process developed with the use of Poronto is divided into two stages: the creation of the corpus and the creation of the ontology.

In this research, after the creation of the corpus, the second stage involved only the extraction of simple and compound words, by means of filters that allow selecting some word classes. The filters “only nouns” and “compound words” were used. For the extraction of compound words, the software uses four grammar rules, considering the following associations: noun and adjective; noun, preposition and noun and; noun, preposition, adjective and noun; and noun, preposition, noun, preposition and noun.
With the software 257,893 words were extracted from the corpus of the nursing documentations. Based on the list of words, in the post-processing stage, the symbols (+, -, °, ‰), isolated articles (the) were removed and the occurrences of the identified terms were quantified, which resulted initially in an analysis corpus of 110,700 simple and compound words.

The simple and compound words were arranged into two broad categories: preferred term – the first term extracted by the software; and attached term – connected to the preferred term. The identification of the attached terms is explained by the relevance of contextual analysis of preferred terms, without which the identification of the axis of the word is limited.

Subsequently, the words were classified as nursing language specific or nonspecific words. The latter, though necessary to compose the texts of patient documentation are not directly used in nursing diagnoses, outcomes and interventions. They include specifications of diseases and abnormalities, surgical procedures, names of vaccines and medications.

Then, if indicated, standardization of terms regarding spelling, gender (male), number (singular) and tense (infinite) was performed.

At the end of the post-processing stage, the final corpus of the analysis was composed of 2,638 preferred terms (2,463,159 repetitions) and 1,914 attached terms, which were analyzed for the different forms of recording of written terms.

Regarding ethical aspects, the use of the database was approved by the management of the institution involved, and the main project, in which the research is inserted, was approved by the Research Ethics Committee of Pontifícia Universidade Católica do Paraná, under no 96.331.

**RESULTS**

In the process of elimination of the identifications of professionals, it was found that in 25,277 records (22% of the total) there was no identification of the professional responsible for this process.

Of the 2,638 preferred terms, 125 terms had more than 5,000 repetitions, representing 62.7% (n= 1,545,252) of the total occurrences of terms. These terms can be viewed through a Pareto chart (graph 1).

In total, 165 acronyms and eight abbreviations were found in nursing records, and the meanings of 31.5% of these acronyms were not identified in the literature. The most common acronyms with their meanings and sources are shown in Chart 1.

The abbreviations of the nursing terms found were: horário (hrs /hs) (time in hours); paciente (pcte) (patient); soroterapia (str) (serotherapy); esquerda (esq) (left) direita (dir) (right); abdome (abd) (stomach) respiração (resp) (breathing) and obstrução (obst) (obstruction).

The meanings of these non-conventional abbreviations were identified through additional words that provided the context, such as “hrs da medic“Ação” (time to take the medication and “pcte colaborativo” (cooperative patient).

The use of 796 repetitions of trade names to indicate some devices used in nursing practice was detected (Chart 2).

Regarding systematized language, the nurses use adjectives to describe the focus of care and sometimes a concept of nursing diagnosis. To facilitate the discussion of the data, terms extracted as adjectives were transformed in nouns, to allow the identification of the terms related to the focus of nursing care or to a nursing diagnosis concept of the ICNP® (Chart 3).

**DISCUSSION**

The results presented here lead to the discussion of five major points: the record of professional identification; the set of most representative terms; the use of non-conventional acronyms and abbreviations; the use of trade names and the use of adjectives for recording the focus of nursing care.

One study that analyzed nursing records according to criteria of hospital accreditation concluded that one of the quality indicators with the highest non-compliance rates was the one related to notes on the author, date and time of records, with 79% of non-compliance (10).

In EPR, date and time are always present because such information does not need to be entered into the computer system. It should be stressed that in the hospital where this study took place, part of the records (22%) did not include the names of the authors. When electronic or digital signatures are not possible, the full name of the author must be included, and the professional must log out after recording the information. Failure to do this may cause professionals to be held legally responsible for improper records related to their electronic identification.

The most frequent terms showed in the Pareto Chart (Graph 1), corroborate the characteristics of an emergency and trauma service. Possibly, this set of terms would not have a significant representation in another type of hospital. This reinforces that when it comes to terminology standardization, the institutions should research their own records to obtain terms that represent their own reality.
Graph 1 – Pareto chart (Part 01, 02 and 03) with emphasis on the 125 terms with occurrence higher than 5,000 repetitions extracted from records of patient’s progress in a university hospital of Curitiba – Paraná

Terms used by nurses in the documentation of patient progress

<table>
<thead>
<tr>
<th>Meaning and Acronym</th>
<th>Amount</th>
<th>Digital source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indwelling urinary catheter (IUC)</td>
<td>21738</td>
<td><a href="http://www.revistas.usp.br/rmrp/article/view/166/167">http://www.revistas.usp.br/rmrp/article/view/166/167</a></td>
</tr>
<tr>
<td>Peripheral Venous Access (PVA)</td>
<td>16293</td>
<td><a href="http://portalcodgdh.min-saude.pt/index.php/Absrevaturas_acr%C3%B3nimos_e_siglas:_A_-_H">http://portalcodgdh.min-saude.pt/index.php/Absrevaturas_acr%C3%B3nimos_e_siglas:_A_-_H</a></td>
</tr>
<tr>
<td>Nasogastric tube (NG)</td>
<td>13961</td>
<td><a href="http://portalcodgdh.min-saude.pt/index.php/Absrevaturas_acr%C3%B3nimos_e_siglas:_R_-_Z">http://portalcodgdh.min-saude.pt/index.php/Absrevaturas_acr%C3%B3nimos_e_siglas:_R_-_Z</a></td>
</tr>
<tr>
<td>Postoperative (PO)</td>
<td>10383</td>
<td><a href="http://portalcodgdh.min-saude.pt/index.php/Absrevaturas_acr%C3%B3nimos_e_siglas:_I_-_Q">http://portalcodgdh.min-saude.pt/index.php/Absrevaturas_acr%C3%B3nimos_e_siglas:_I_-_Q</a></td>
</tr>
</tbody>
</table>

**Chart 1** – Most frequent acronyms found in records of patient progress in a university hospital of Curitiba-Paraná, with their respective meanings and sources


<table>
<thead>
<tr>
<th>Identified trade names</th>
<th>Amount</th>
<th>Term use in nursing practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adaptic®, Hidrogel®, Fibracol®, Alginato®, Aquacel®, Tegaderm®, Hidropolímero®</td>
<td>434</td>
<td>Dressing</td>
</tr>
<tr>
<td>Abocath®</td>
<td>145</td>
<td>Venous catheter</td>
</tr>
<tr>
<td>Introcan®</td>
<td>73</td>
<td>Venous catheter</td>
</tr>
<tr>
<td>Jelco®</td>
<td>80</td>
<td>Venous catheter</td>
</tr>
<tr>
<td>Ambü®</td>
<td>59</td>
<td>Bag valve mask</td>
</tr>
<tr>
<td>Escalpe®</td>
<td>5</td>
<td>Venous catheter</td>
</tr>
</tbody>
</table>

**Chart 2** – Absolute frequency of trade names identified in the nursing records of patient progress of a university hospital of Curitiba-Paraná and their correlation with the terms used in nursing practice.


A significant number of acronyms was observed, which did not cause difficulties to recording. However, the lack of standards creates problems, as for example in the use of the same acronym for Acesso Venoso Central (AVC) and Acidente Vascular Cerebral (AVC); and the acronym Sonda Vesical (SV), which is related to Sinal Vital in the literature.

Some hospital services provide lists of standardized acronyms in their sites, e.g. Hospital São Camilo (<http://www.saocamilo.com/area_medica/download/Manual_de_Siglas.pdf>), in São Paulo, and one hospital of Unimed network (<http://www.unimedpg.com.br/consentimento/Manual%20de%20Siglas%20e%20Abreviaturas%20Padronizadas.pdf>), in Paraná. In the institution investigated in this study there are no documents for the standardization of acronyms and abbreviations, and, thus, professionals are allowed to use acronyms and abbreviations indiscriminately or interchangeably, so that different acronyms sometimes have the same meaning or vice-versa, which may result in injury to the patients.

Another issue related to the use of acronyms concerns the use of acronyms Sonda Nasogástrica (SNG), Sonda Nasoenteral (SNE), Sonda Orogástrica (SOG) and Sonda Oroenteral (SOE). It should be stressed that the appropriate denomination in standardized terminology is based on the term “tubo” (tube), which is defined as a device of varied materials and gauges inserted into the body for...
infusion or withdrawing fluids\textsuperscript{(12)}. Another definition, indicated by the ICNP\textsuperscript{®}, 2013 version, describes tubes as devices used for transportation or draining\textsuperscript{(13)}. As for catheters, they are thin and hollow tubes of different materials and gauges for the examination of wounds, fistulas or organic cavities\textsuperscript{(14)}. A similar situation is seen in the term “Sonda vesical”, described by some authors as “Cateter vesical”\textsuperscript{(12)} and by the ICNP\textsuperscript{®} as “Cateter urinário”\textsuperscript{(13)}. Such terms suggest that nurses need to update the terminology used in their practice.

Another matter of concern is the use of trade names of materials to designate devices used (Chart 2) in nursing records. The use of a term such as Abocath\textsuperscript{®}, to designate the device “Cateter venoso”, or “Adaptic” / Hidrogel\textsuperscript{®}, to designate “Curativo”, may result, in the case of lawsuits, in the obligation to provide evidence that in a given situation of care delivery the device used was provided by manufacturer X, and not from manufacturer Y available in the institution.

It is recommended that the documentation of nursing practice meets the requirements of clarity, accuracy and efficacy. Also, scientific terms should not be indiscriminately used with different meanings merely from force of habit\textsuperscript{(15)}.

Many studies that evaluated the quality of nursing documentation of patients’ records recommend that health teams discuss legal aspects of nursing records\textsuperscript{(16)}, as a strategy to overcome the problems identified in this research.

The use of inappropriate terms by nurses may impair the systematization of a nursing diagnosis or else this may result in nursing diagnoses not consistent with data collection. The use of adjectives to describe the patient’s status, as for example, the words “Agitado” and “Hipotérmico”, may represent nursing diagnosis concepts of “Agitação” and “Hipotermia” or else may constitute defining features of other diagnoses, e.g. in the case of “Risco de queda” and “Desidratação hipotônica”. Hence, these words should be used to record different stages of the nursing process, that is, the former words should be used in medical history taking and /physical examination of the patient and the latter in nursing diagnosis.

To ensure fast and accurate information retrieval, the documentation of patients’ records should include more detailed terminology\textsuperscript{(17)}. Therefore, the issues related to the use of different words in written information may difficult the retrieval of information and the measurement of the outcomes of the nursing practice, as well as the possibility of construction of related evidence.

Despite the diversity of nursing practice, the use of different words in the same domain of care in written documentation made by nurses is a matter of concern.

**Chart 3** – Some terms extracted from records of patient progress from a university hospital of Curitiba-Paraná and analysis of their adequacy.

*Source: Research data, 2012-2014.*

Nursing documentation should not be regarded as mere paperwork. It is necessary to raise the awareness of nursing professionals about the importance of this activity and about the consequences of submitting inaccurate records filled with incorrect data\textsuperscript{(18)}. On the other hand, the limitations related to nursing documentation include lack of personnel, lack of time to prepare the documentation, lack of institutional interest and the general idea that nursing is not an independent profession, but rather a support service to other health professionals\textsuperscript{(19-20)}.

To overcome these difficulties, some studies recommend reflections on the use of the nursing process; updating nurses about taxonomies and classifications; the inclusion of care protocols and the use of computer-based nursing process documentation systems\textsuperscript{(4,20)}.  

<table>
<thead>
<tr>
<th>Term extracted from the record</th>
<th>Adequate term</th>
</tr>
</thead>
<tbody>
<tr>
<td>agitated</td>
<td>agitation</td>
</tr>
<tr>
<td>Aggressive</td>
<td>Aggressive behavior</td>
</tr>
<tr>
<td>Ascitic</td>
<td>Ascites</td>
</tr>
<tr>
<td>Surgical</td>
<td>Surgery</td>
</tr>
<tr>
<td>Comatose</td>
<td>Coma</td>
</tr>
<tr>
<td>Communicative</td>
<td>Communication</td>
</tr>
<tr>
<td>Confused</td>
<td>Confusion</td>
</tr>
<tr>
<td>Conscious</td>
<td>Consciousness</td>
</tr>
<tr>
<td>Contained</td>
<td>Containment</td>
</tr>
<tr>
<td>Dehydrated</td>
<td>Dehydration</td>
</tr>
<tr>
<td>Disoriented</td>
<td>Dyspnea</td>
</tr>
<tr>
<td>Dyspneic</td>
<td>Fever</td>
</tr>
<tr>
<td>Familiar</td>
<td>Family</td>
</tr>
<tr>
<td>Feverish</td>
<td>Fever</td>
</tr>
<tr>
<td>Hemorrhagic</td>
<td>Hemorrhage</td>
</tr>
<tr>
<td>Hydrated</td>
<td>Hydration</td>
</tr>
<tr>
<td>Hypertensive</td>
<td>Hypertension</td>
</tr>
<tr>
<td>Hypotensive</td>
<td>Hypotension</td>
</tr>
<tr>
<td>Hypothermic</td>
<td>Hypothermia</td>
</tr>
<tr>
<td>Sleepy</td>
<td>Sleepiness</td>
</tr>
<tr>
<td>Traumatized</td>
<td>Trauma</td>
</tr>
</tbody>
</table>
In the light of the results presented here and related studies, inconsistencies were observed in nursing records, even in those included in EPR, which must be overcome. The terms identified in this study are consistent with the type of services offered and with a particular clientele; also, they include the main devices used in nursing interventions. However, nurses do not count on a standardized terminology adapted to their specific area of practice, which is the basis of the diagnosis and nursing outcomes.

One limitation of this study is related to the characteristics of the hospital where the study was conducted, which involves a specific set of terms. This work should encourage further analyzes of this terminology in similar hospitals.

**CONCLUSION**

Improper identification of the author of the records was observed, as well as in the use of non-conventional acronyms and abbreviations and trade names of devices. Also, the terminology used by nurses reflect the specificity of the service offered by the hospital and nurses use adjectives to describe the specific aspects of their nursing practice. These conclusions contribute to overcome the aforementioned challenges.

Despite the diversity of terms encountered and the absence of a standardized classification system in the institution, nursing diagnoses statements were identified in the records of patients’ progress.

The heterogeneity observed in nursing documentation can be minimized by the use of a classification that recognizes the differences and is focused on terminology standardization in nursing practice. This is one of the objectives of the INCP®, which partly explains the importance of systematic reviews, updating and inclusion of new terms.

**REFERENCES**
