ORIGINAL ARTICLE

Electronic nursing care plans through the use of NANDA, NOC, and NIC taxonomies in community setting: A descriptive study in northern Italy

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Purpose: To carry on a descriptive analysis of nursing standardized language through the use of a software within outpatient facilities in northern Italy, organized according to the Chronic Care Model (CCM) and called Community Health Centers (CHC).

Methods: A descriptive design was adopted for the study. NANDA-I, NOC, and NIC taxonomies have been used to analyze care plans pulled from the software. Both qualitative and quantitative data were analyzed.

Findings: The average of nursing diagnosis correctly identified with respect to the nursing assessment is 83.7% (SD 29.9%). Class 4 diagnoses from Domains 4 have been identified as the most prevalent (22.4%), followed by risk for unstable blood glucose level 00179 (16.4%) and risk for overweight 00234 (13%). The main nursing outcomes were vital signs 0802 (22.5%), blood glucose level 2300 (16%), and weight loss behavior 1627 (11%). The most prevalent nursing interventions are wound care 3660 (27%), medication administration: intramuscular 2313 (19%), and health education 5510 (14%). The analysis shows ability in identifying nursing diagnoses, but a larger variability with outcomes and interventions. The study highlights the nursing role within CHC and identifies the main areas of expertise in chronic disease management: prevention and health education.

Conclusions: Nurses' role is fundamental for chronic disease management within CHC; NANDA-I taxonomy helps to analyze care plans.

Implications for nursing practice: - A taxonomy such as NANDA-I represents a valid opportunity to make more visible how much nursing skills affect the achievement of a higher level of health in chronic patients.

- This study is useful in the further training of outpatient nurses who works in CHC.

- The study represents the starting point for future research to deepen the development of a standardized nursing language in outpatient facilities.

KEYWORDS
nursing care plan, nursing taxonomy, standardized nursing language, community nursing, long-term care, electronic health records

INTERNATIONAL JOURNAL OF NURSING KNOWLEDGE
The Official Journal of NANDA International, Inc.

| 73

Scopo: Effettuare un'analisi descrittiva del linguaggio infermieristico standardizzato attraverso l'utilizzo di un software all'interno di strutture ambulatoriali del nord Italia, organizzate secondo il Chronic Care Model (CCM) e denominate Case della Salute (CdS).

Metodi: Per lo studio è stato adottato un disegno descrittivo. Le tassonomie NANDA-I, NOC e NIC sono state utilizzate per analizzare i piani di assistenza estratti dal software. Sono stati analizzati dati sia qualitativi che quantitativi.

Risultati: La media delle diagnosi infermieristiche correttamente identificate rispetto all'accertamento infermieristico è dell'83,7% (DS 29,9%). Le diagnosi di classe 4 dominio 4 sono state identificate come le più prevalenti (22,4%), seguite da 00179 (16,4%) e 00234 (13%). I principali esiti infermieristici sono stati 0802 (22,5%), 2300 (16%) e 1627 (11%). Gli interventi infermieristici più diffusi sono 3660 (27%), 2313 (19%) e 5510 (14%). L'analisi di adeguatezza mostra la capacità di identificare le diagnosi infermieristiche, ma una maggiore variabilità con i risultati e gli interventi. Lo studio evidenzia il ruolo infermieristico all'interno delle CdS e identifica le principali aree di competenza nella gestione delle malattie croniche: prevenzione ed educazione sanitaria.

Conclusioni: Il ruolo degli infermieri è fondamentale per la gestione delle malattie croniche all'interno delle CdS; La tassonomia NANDA-I aiuta ad analizzare i piani di cura.

Implicazioni per la pratica infermieristica: - L'utilizzo di una tassonomia condivisa e standardizzata come NANDA-I nella creazione dei piani di assistenza rappresenta una valida opportunità per rendere più visibile quanto le competenze infermieristiche influenzino il raggiungimento di un livello più alto di salute e benessere nei pazienti cronici trattati nelle CdS.

- Questo studio è utile per la formazione degli infermieri ambulatoriali e per quelli che lavoreranno lì.

- Lo studio rappresenta il punto di partenza per future ricerche per approfondire ulteriormente, magari a livello multicentrico, lo sviluppo di un linguaggio infermieristico standardizzato attraverso la creazione di piani di assistenza infermieristica basati sulla tassonomia NANDA-I.

INTRODUCTION

The need to build a common language among nurses is well documented in the literature, although some studies report that sometimes terminologies in care plans are very heterogenous (Törnwall & Jansson, 2017; Bompan et al., 2020; Wang et al., 2011) and that there are no sufficient researches to affirm whether a standardized nursing record system affects nursing outcomes or not (Urquhart et al., 2018). The use of a uniform terminology has numerous implications: (a) to improve communication between nurses and other healthcare professionals; (b) to increase nursing visibility; (c) to improve patient care; (d) to systematically evaluate nurses care outcomes; (e) to ensure greater adherence to standards of care (Rutherford, 2008).

A report from the Italian Ministry of Health (Protocollo di monitoraggio degli Eventi Sentinella – 4° rapporto (settembre 2005–dicembre 2011), Ministero della Salute, 2013) also reports that problems related to the lack of a common language between health care professionals cause mistakes during patient care.

The NANDA-I taxonomy is an example of standardized nursing language that provides a uniform terminology for nursing practice, education, research to express in an accurate way the nursing clinical judgment (NANDA-I, 2018). The NANDA-I taxonomy is well known through Italian nurses both in the university programs and in the clinical settings and the standardized language has been officially translated in Italian. There are few studies on NANDA-I application and use in Italy (Cioce et al., 2019; Bertocchi et al., 2020; Marcotullio et al., 2020).

The use of a shared and uniform language is especially important in setting where chronic patients are complex and with comorbidities and need to be taken care longtime by nurses and other health care professionals (Cárdenas-Valladolid et al., 2012). The constant increase in chronic diseases and the related change in the health needs of the population in terms of prevention and health promotion, together

74 | INTERNATIONAL JOURNAL OF NURSING KNOWLEDGE
The Official Journal of NANDA International, Inc.

ALEANDRI ET AL.

with the need to optimize costs in relation to the services offered by the National Health System, led to the development and implementation of outpatient territorial facilities called Community Health Centers (CHC; "Case della Salute" in Italian) throughout the north of Italy (Brambilla & Maciocco, 2016; Odone et al., 2016).

CHC have the task of managing the complexity of chronic patients in the area to avoid further hospitalizations and were created on the basis of the Chronic Care Model (CCM) to ensure prevention and continuity of care (Barletta et al., 2016; Boehmer et al., 2018; Davy et al., 2015; Stellefson et al., 2013; Yeoh et al., 2017). Another key point of the CCM is the computerized management of clinical documentation to optimize chronic patient care in a community context, as reported in literature (Siminerio, 2010; Richardson & Abramson, 2012) (Gammon et al., 2015; Sockolow & Liao, 2012). This can also help in creating a standardized language among nurses who work in CHC. No studies have been found at a national level about electronic health record implementation in a community context and there is also a lack of sources describing the nursing role and the impact of nursing care.

STUDY OBJECTIVES

The general objective of the study is to carry out a descriptive analysis of nursing standardized language in the outpatient setting and within CHC in the north of Italy through the use of the "Case della Salute" software. Specifically, the part concerning the nursing care plans for the care of chronic patients has been investigated with the help of the NANDA-I taxonomy.

Further specific objectives have been identified, such as: (a) to evaluate the accuracy of the identified "needs" through the correspondence with data collected during the nursing assessment (in a statistically significant sample); (b) to evaluate whether "objectives" and "actions" identified by nurses are consistent with the definition provided by the NIC and NOC taxonomies ("states, behaviors, perceptions of an individual, family, community measured along a continuum in relation to the nursing intervention" and "treatment that the nurse implements in order to improve the results obtained from care") (Butcher et al., 2020; Moorhead et al., 2020); (c) to classify and group "objectives" and "actions" according to a thematic analysis; (d) to describe the "needs" identified by nurses through the "Case della Salute" software; (e) to identify the most frequent nursing diagnoses, outcomes, and interventions in this setting according to the NANDA-I, NOC and NIC taxonomies.

METHODOLOGY

Study setting

Starting from January 2016 a new software called "Case della Salute" was implemented within all the outpatient facilities of the Bologna area (in the north of Italy) for the nursing documentation management and to start the use of a computerized nursing record. Thanks to this software it has been possible to analyze through a database the language used by the health care professionals in the nursing care plans, related to the achievement of healthcare outcomes such as "moods, behaviors, perceptions of an individual, family, community measured along a continuum in relation to the nursing intervention" (Moorhead et al., 2020).

The aim of the "Case della Salute" software is to improve nursing documentation, to make more visible and quantifiable the professional activity carried out by nurses in the area and to improve the follow-up of the chronic patients over time.

The software consisted of three different section selectable through a drop-down menu; in this study only the care plans that came from the section about chronic patients followed by the outpatient nurses has been analyzed, as the other two sections do not provide for the creation of a care plan. Each care plan is made up of five sectors ("need," "objectives," "actions," "timing," and "result") that can be filled via drop-down menus ("needs" and "timing") or with free text ("objectives," "actions," and "result").

The terms used within the nursing care plans have been agreed between nurse directors in Healthcare Trust, head nurses, and outpatient nurses involved after meetings and group works, with some differences compared to the terminology in the NANDA-I, NOC, and NIC taxonomies. "Needs" are similar to the definition of nursing diagnosis, "objectives" to outcomes and "actions" to interventions.

Design/sampling method

A descriptive design was adopted for the study.

Data analysis covered all the CHC of the Bologna district area (in the north of Italy) where the use of the "Case della Salute" software has been implemented, starting from the first day of use by nurses (January 26, 2016) up to November 16, 2017.

Data collection

The computer technician created a database through an excel file with all the extrapolated data to proceed with the analysis. The section "needs" not followed by any other item that composes the nursing care plan was not included in the study analysis.

Furthermore, a statistically significant sample has been defined to compare the consistency between nursing assessment and the identification of nursing diagnosis, through a validated tool for assessing care planning (Dammiano et al., 2019). There is no evidence for statistical calculation in literature, so the sample was calculated starting from the prevalence (69.35%) of the care plans found to be correct in a preliminary study carried out by Dammiano in 2017.

Patients in the period between May 16, 2017 and November 16, 2017 were considered for the sample calculation since compared to the available database it is the most recent time interval in which all the CHC used the tool uniformly. Patients in the database are uniquely identified with a code called XMPI (see Ethical Considerations paragraph). In the selected time interval, 751 XMPI codes were

INTERNATIONAL JOURNAL OF
NURSING KNOWLEDGE
The Official Journal of NANDA International, Inc.

| 75

identified; 141 of these were excluded because the plans contained "needs" not followed by "objectives" and "interventions" or because among the "needs" identified there was also a "need" called "other," which cannot be evaluated through the tool. The result was therefore a population of 610 patients, from which a sample of 213 patients was obtained through the use of online software. The XMPI codes referring to patients were then randomized through an online software and only afterwards the data concerning the care plans were compiled, compared with the data in the assessment section of the software referring to the given patient. The data emerged from the tool were then expressed in the form of mean and standard deviation.

Ethical consideration

The regional Ethical Committee authorized the developing of this study and permission was also given by the local health authority.

Patients followed by nurses in Community Health Centers and for whom nurses created a specific care plan are associated with an alphanumeric code (XMPI) in the software "Case della Salute." The researchers did not know the identity of the patients or how the XMPI code was decoded, therefore the data in the records remain strictly confidential. Furthermore, the researchers were in possession of only some of the data present in the software, represented only by the nursing care plans.

Data analysis

The data analyzed in the study were both qualitative and quantitative. As for the quantitative ones, they have been grouped through a descriptive statistical analysis (absolute, relative and percentage frequency, mean, and standard deviation) based on specific objectives.

At the same time, a qualitative analysis has been carried out on the language used by nurses in defining "objectives" and "actions." This choice is motivated by the fact that in the software the care plan sections "objectives" and "actions" are filled in by nurses with free text. As regards the "objectives" sections, four categories have been identified in which to subdivide the items, starting from the definition of nursing outcomes (Moorhead et al., 2020) in the NOC taxonomy: (a) nursing outcomes (58%); (b) outcomes with nurse as the subject (4%); (c) ambiguous outcomes, with subject unclear (5%); (d) nonoutcomes (13%).

It should be noted that in 20% of cases the section "objectives" was left blank.

The analysis of terms in the "actions" section led to the identification of five categories, starting from the definition of nursing interventions intended as treatment that the nurse implements in order to improve the results obtained from the caring process (Butcher et al., 2020) as reported in the NIC taxonomy: (a) nursing interventions (32%); (b) interventions with patient as the subject (16%); (c) ambiguous intervention, with subject unclear (24%); (d) non-interventions (16%). Section "actions" was left blank in 12% of cases.

All items correctly identified as nursing outcomes and interventions have been sorted alphabetically. Some terms occurred more frequently than others and were therefore identified and further grouped using as a threshold value, in agreement among the researchers, 1% of the presence of a given expression or sentence within the single section. Despite the wide variability of the lexicon reported, some terms were repeated in both categories in considerable percentages, well beyond the agreed threshold value. In this way it was possible to create macro-categories of prevailing terms. These categories were then compared with NOC and NIC taxonomies with a cross-checked analysis made by three researchers.

To systematically compare care plan terms reported in the software with the NANDA-I, NOC, and NIC taxonomies a cross-checked analysis has been carried out by three members of the research group. Comparative tables have been created in which the NANDA diagnoses with the respective definitions have been inserted in order to be linked with one or more "needs"; each researcher compiled the table separately and subsequently the data that emerged were compared in order to arrive at the definitive version of the analysis presented in Table 1. The same analysis was then carried out for "objectives" and "actions" with NOC and NIC taxonomy.

Findings

The results of the study have been represented through the nursing process: assessment, diagnosis, planning, implementation, and evaluation.

Data reported in Table 1 express the percentage agreement that the elements given in the assessment are correctly used in the diagnosis identification procedure through the use of a planning evaluation tool (Dammiano et al., 2019). Tough a wide variety emerged from the care plans of 213 patients (identified with XMPI codes) extracted from the statistically significant sample and randomized, no cases were excluded from the results to give a realistic description of the phenomenon. The average of nursing diagnosis correctly identified with respect to the nursing assessment is 83.7%, with a standard deviation of 29.9%. In Table 1 the percentage of agreement with nursing assessment is adequately identified and divided by each diagnosis.

In some cases, there were no data in the nursing assessments to evaluate whether a diagnosis has been correctly identified or not, that to explain blank cells in Table 1.

The drop-down menu of the section "needs" was composed by 22 different "needs" and in the period of time considered in the research nurses identified 3150 of them; the percentage frequency analysis is reported in Table 2.

NANDA-I taxonomy has been used to further analyze the "needs" section. Definitions and titles of diagnoses have been linked to a "need" and his frequency with a cross-checked analysis. Seventeen different diagnoses have been chosen. In some cases, one diagnosis is linked to more than one "need" because the definition suited, after the agreement between the researchers. For example, diagnosis ineffective health management 00078 is linked to four "needs" that deal with the

76 | INTERNATIONAL JOURNAL OF NURSING KNOWLEDGE
The Official Journal of NANDA International, Inc.

ALEANDRI ET AL.

TABLE 1 Percentage agreement with the assessment

Nursing Diagnosis	NEEDS	Agreement with the assessment (%)
Class 4 Domain 4	Vital signs monitoring	86.8
Risk for imbalanced fluid volume 00025	Water retention risk	
Risk for deficient fluid volume 00028	Dehydration risk	60
Risk for infection 00004	Peripheral and central venous access management	
	Urinary catheter management	
Impaired skin integrity 00046	Skin lesions	80
Risk for caregiver role strain 00062	Caregiver: training	100
Ineffective health management 00078	Inadequate management of medical aids	60
	Integration with other healthcare services / clinics	
	Inadequate diabetic foot care	
	Inadequate therapeutic adherence	30.8
Bathing self-care deficit 00108	Inadequate personal hygiene	0.0
	Inadequate foot care	
Powerlessness 00125	Psychological support	33.3
Acute pain 00132	Inadequate pain management	25
Chronic pain 00133		
Sedentary lifestyle 00168	Incorrect lifestyle related to movement	62
Risk for unstable blood glucose level 00179	Glycemic control	92.9
Risk-prone health behavior 00188	Incorrect lifestyle related to alcohol use	66.7
	Incorrect lifestyle related to smoking	60
Risk for bleeding 00206	Bleeding risk	
Risk for overweight 00234	Incorrect lifestyle related to nutrition	76.9
Risk for unstable blood pressure 00267	Electrocardiogram/urgent or control BP monitoring	

same theme. In other cases, one "need" is linked to more than one diagnosis; for example, diagnosis acute pain 00132 and chronic pain 00133 are both linked to "inadequate pain management" to enclose all types of pain. "Vital sign monitoring" is the only one linked to Class 4 diagnoses from Domains 4 because this "need" is related to all diagnoses concerning vital sign and hemodynamic control. This diagnoses group has been identified as the most prevalent in the software database (22.4%), followed by risk for unstable blood glucose level 00179 (16.4%) and risk for overweight 00234 (13%).

Further analysis showed that there were also incomplete nursing care plans in the software. In other terms each "need" was not always followed by an outcome and an intervention: 13.4% (11.1 SD) of the planification were incomplete.

Regarding outcomes and interventions, a prevalence analysis has been made. In accordance with the "needs" section, the main nursing outcomes identified were vital signs 0802 (22.5%), blood glucose level 2300 (16%) and weight loss behavior 1627 (11%). the analysis of the "actions" section showed instead that the most prevalent nursing interventions are wound care 3660 (27%), medication administration: intramuscular 2313 (19%), and health education 5510 (14%).

DISCUSSION

The use of the planning assessment tool showed that in more than 80 percent of cases there was concordance between assessment data and subsequent identification of nursing diagnoses (Table 1). This implies a good ability of nurses to identify patient needs. However, the large standard deviation shows that there is a lot of variability between the various diagnoses, both due to the lack of data collection in the assessment phase, and to the nonidentification of the diagnosis. As regards the identification of nursing outcomes and interventions, the analyzed data showed a lower range of adequacy: correctly identified nursing outcomes were 58%, with 20% of outcomes left empty, while nursing interventions only 32%, with 12% of interventions left empty. These data show excellent skills of nurses in the community context in correctly identifying the prevailing needs of patients and the necessity to improve nurses training and skills with respect to identifying the correct outcomes and interventions. 13.4% (SD 11.1%) of the care plans were incomplete; in other words, not all diagnoses were correctly followed by outcomes and interventions. The standard deviation value shows a lot of variability between diagnoses in the care plans. It should be checked whether the nurses' difficulty lies in developing the plan for

INTERNATIONAL JOURNAL OF
NURSING KNOWLEDGE
The Official Journal of NANDA International, Inc.

77

TABLE 2 Percentage analysis of the care plans

Nursing Diagnosis	Needs	% Frequency	Nursing Outcomes	Objectives	% Frequency	Nursing Interventions	Actions	% frequency
Class 4 Domain 4	Vital signs monitoring	22.4	Vital signs 0802	Maintain vital signs in the ranges agreed with GP	22.5	Vital signs monitoring 6680	Vital signs measurement	2
Risk for imbalanced fluid volume 00025	Water retention risk	0.7	Self-management: acute illness 3100	Self-monitoring	1	Teaching: disease process 5602	Health education	2
Risk for deficient fluid volume 00028	Dehydration risk	0.1	Self-management: chronic disease 3102					
Risk for infection 00004	Peripheral and central venous access management	0.6						
	Urinary catheter management	0.3						
Impaired skin integrity 00046	Skin lesions	9.2	Tissue integrity: skin and mucous membrane 1101	Healing	8	Wound care 3660	Making dressings	27
Risk for caregiver role strain 00062	Caregiver: training	0.3						
Ineffective health management 00078	Inadequate management of medical aids	0.3	Compliance behavior 1601	Adhere to therapy	1	Teaching: procedure/treatment 5618	Health education (therapeutic education)	2
	Integration with other healthcare services / clinics	0.4						
	Inadequate diabetic foot care	0.2						
	Inadequate therapeutic adherence	10.8						
Bathing self-care deficit 00108	Inadequate personal hygiene	0.4						
	Inadequate foot care	1.0						

(Continues)

78 | INTERNATIONAL JOURNAL OF NURSING KNOWLEDGE
The Official Journal of NANDA International, Inc.

ALEANDRI ET AL.

TABLE 2 (Continued)

Nursing Diagnosis	% Frequency	Needs	Nursing Outcomes	% Frequency	Objectives	% Frequency	Nursing Interventions	Actions	% frequency
Powerlessness 00125	0.9	Psychological support							
Acute pain 00132 Chronic pain 00133	1.0	Inadequate pain management	Pain control 1605	1	Low back pain healing		Medication administration: intramuscular 2313	Intramuscular injection	19
Sedentary lifestyle 00168	11.3	Incorrect lifestyle related to movement	Compliance behavior: prescribed activity 1632	3.5	Increase physical activity		Health education 5510	Health education (lifestyle talks)	12
			Weight loss behavior 1627	11	Lose weight				
Risk for unstable blood glucose level 00179	16.4	Glycemic control	Blood glucose level 2300	16	Maintain blood glucose values in the ranges agreed with the GP		Capillary blood sample 4035	Glycemic control through capillary blood sampling	1
Risk-prone health behavior 00188	0.4	Incorrect lifestyle related to alcohol use							
	2.8	Incorrect lifestyle related to smoking	Smoking: cessation behavior 1625	1	Stop smoking		Health education 5510	Health education (lifestyle talks)	2
Risk for bleeding 00206	0.1	Bleeding risk							
Risk for overweight 00234	13.0	Incorrect lifestyle related to nutrition	Acceptance behaviour: prescribed diet 1622	2	Improve nutrition		Nutrition management 5246	Food education	3
Risk for unstable blood pressure 00267	0.2	Electrocardiogram/urgent or control BP monitoring							

that diagnosis or if the difficulty also includes identifying the diagnosis itself. It may therefore be necessary for nurses to acquire more skills to improve diagnostic accuracy.

Data extrapolated from the software (Table 2) showed that the prevailing nursing diagnoses in CHC are those about vital sign monitoring (Class 4 Domain 4), glycemic control (00179) and health promotion and education (00234, 00168, 00078). These data also correspond to those emerging from the analysis of nursing outcomes: the most prevalent nursing outcomes identified have been the maintenance of vital parameters (0802) and blood glucose (2300) within preestablished ranges and the weight loss (1627). The most prevalent nursing interventions are the ones about wound care (3660), intramuscular injections (2313) and health education (5510). These data provide an overview of the main activities carried out by nurses within CHC and represent one of the first examples of research in community context in Italy. The main needs of chronic patients followed in CHC emerge, such as monitoring of vital parameters and health education to avoid the exacerbation of chronic diseases. The nursing care plans concerning vital signs monitoring, regardless of the patient's underlying pathology, place the emphasis on the needs of the person, on his quality of life and not on the pathology he is suffering from. In CHC nurses focus on managing chronicity to avoid rehospitalization. What is been said is completely in line with the constitutive pillars of the CCM, which focuses above all on self-management support and constant follow-up of patients directly in the community (Barletta et al., 2016; Stellefson et al., 2013).

Health education has also emerged as prevalent within nursing planning, both as patient needs and as a nurse intervention. To support the management of chronicity it is in fact necessary for the nurse to implement educational interventions on various aspects of health such as: health promotion in the absence of pathologies, focusing on habits and lifestyles; education in monitoring signs and symptoms at home, teaching on aids and procedures necessary for the management of certain chronic syndromes (Scalorbi, 2012).

All nursing outcomes and interventions emerged from the study are in line with clinical area groupings provided by the NOC and NIC taxonomies: "outpatient nursing care" and "primary care and public health nursing care." The only exceptions are the outcome tissue integrity: skin and mucous membrane 1101 and the intervention wound care 3660 which concern the management of complex dressings. This indicates that nurses in CHC have developed expert skills in the treatment of complex wounds and dressings more thoroughly.

The study has some limit:

- The data that can be extrapolated from the software are extremely numerous and it will not be possible to analyze all of them, therefore the study put the focus exclusively on those declared.
- There is not direct interaction with patients attending CHC to verify the correctness of the collected data in the assessment phase.
- Taxonomies have not been used by nurses in CHC, but only by researchers to analyze software's care plans.
- Nurses' level of experience has not been investigated, so it is not known their level of competence in clinical reasoning.

CONCLUSION

This study carried out a descriptive analysis of nursing standardized language in the outpatient setting and within CHC in the north of Italy through the use of the "Case della Salute" software. It is the first example of research about nursing language in this setting that is very important in the care of chronic patients in Italy. NANDA-I, NOC, and NIC taxonomies, being the best-known standardized nursing language in Italy, have been used to analyze data from the software. The agreement between nursing diagnoses and the nursing assessment have been tested through the use of a validated tool, bringing out good ability of nurses to identify patient needs. The analysis of outcomes and interventions instead showed the need for greater training and acquisition of skills regarding nursing care planning. Monitoring of vital signs, blood glucose, and health education were the prevailing needs identified through the analysis of nursing diagnoses and outcomes. The management of complex dressings and intramuscular injections are the most frequent nursing interventions. The study therefore made it possible to better delineate the role of the nurse within the CHC as a fundamental figure for the chronic disease management.

IMPLICATION FOR NURSING

-The use of a shared and standardized taxonomy such as NANDA-I in the creating nursing care plans represents a valid opportunity to make more visible how much nursing skills affect the achievement of a higher level of health and well-being in chronic patients treated in CHC, in accordance with the CCM. Health education interventions and signs and symptoms of chronic disease exacerbations monitoring, for example, are among the nursing interventions that have been prevalent in the software data analysis. Without a computerized tool for managing nursing documentation and a standardized language shared by nurses, it would have been impossible to quantify these data, thus limiting nursing care to only performance-related activities.

-This study is useful in the further training of outpatient nurses who works in CHC and nurses who are going to work there. Training sessions have been taken place after the study to involve nurses and to discuss the changings of some terms used in care plans to avoid language fragmentation using the NANDA-I, NOC, and NIC taxonomies.

-The study represents the starting point for future research to further deepen, perhaps at a multicentric level, the development of a standardized nursing language through the creation of nursing care plans based on NANDA-I taxonomy.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

80 | INTERNATIONAL JOURNAL OF NURSING KNOWLEDGE
The Official Journal of NANDA International, Inc.

ALEANDRI ET AL.

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