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Development of a subset of ICNP Nursing Diagnoses for the promotion of self-care in people with diabetes mellitus: a multi-center observational study

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Key words: Self-Care, Self-Management, Diabetes Mellitus Type 1, Diabetes Mellitus Type 2, Diabetes Mellitus, Standardized Nursing Terminology, International Classification for Nursing Practice

Parole chiave: Self-Care, Self-management, Diabete Mellito di Tipo 1, Diabete Mellito di Tipo 2, Terminologie Infermieristiche Standardizzate, Classificazione Internazionale della Pratica Infermieristica

Abstract

Introduction. *Self-care is a key for people with diabetes mellitus (DM) to avoid severe complications and to maintain quality of life. Person-centered and accurate nursing care plans can help nurses to deliver effective self-care promotion interventions. Few studies focused on nursing diagnoses that are specific for diabetes self-care education, and none of them used the International Classification for Nursing Practice (ICNP). International Catalogues of ICNP nursing diagnoses are missing in this field.*

Aims. *To identify the ICNP nursing diagnoses that are useful to promote self-care in people with DM; to describe the prevalence of ICNP nursing diagnoses in self-care of people with DM.*

Methods. *A subset of 55 ICNP nursing diagnoses was developed based on the Middle Range Theory of Self-care of Chronic Illness, and most recent diabetes clinical guidelines. Then, the subset was tested through a multicenter cross-sectional design involving a consecutive sample of 170 adults with confirmed diagnosis of Type 1 or Type 2 DM. Data were collected by medical records, physical examinations and semi-structured interviews.*

Results. *1343 nursing diagnoses were identified, with an average of 8 nursing diagnoses per patient. The 100% of the nursing diagnoses were described using the pre-developed subset. Overall, the five prevalent nursing diagnoses were: Body weight problem (56.4%), Non adherence to immunization regime (53.5%), Conflicting attitude toward dietary regime (41.7%), Impaired weight monitoring (39.4%), and Lack of knowledge about blood glucose diagnostic test result (32.3%). Nursing diagnoses by self-care maintenance, monitoring and management were also described.*

Conclusion. *A huge amount of nursing diagnoses was identified suggesting the need of intensive education. Clinicians and administrators can use this subset to improve the accuracy of the documentation of diabetes care. In Public Health, the subset can be used to assess the cost-effectiveness of diabetes healthcare services. Future research is needed to assess the effectiveness of this subset in settings that are different from the one where it was developed. Finally, this subset could be a starting point to develop and International ICNP Catalogue for diabetes care.*

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Introduction

Diabetes Mellitus (DM) is a chronic progressive disease characterized by high levels of blood glucose (1). One out of 11 adults suffers from diabetes and there are 415 million people with diabetes worldwide. The overall prevalence of the disease is 8.8% (2). Uncontrolled diabetes leads to different systemic complications that damage heart, blood vessels, eyes, kidneys and nerves (3). Prevalence of complications ranges between 12.8% and 85% in people with diabetes (1, 2). Diabetes complications influence negatively the quality of life, and lead to disability and premature death. In 2012, 3.7 million of persons died of diabetes (1, 2). The annual estimated cost of diabetes is 827 billion dollars and it will increase to 1,452 billion in 2040 (1, 2). Thus, diabetes represents a social and economic burden for healthcare systems globally. To reduce complications, disabilities and risk of death, people with diabetes have to implement several activities to improve their health conditions. These activities have been defined as *diabetes self-care* (4-6).

Self-care is a process of maintaining health through health promoting practices and managing illness (7). Self-care consists of three parts: self-care maintenance, self-care monitoring, and self-care management. Self-care maintenance includes those behaviors performed to improve well-being, to preserve health and to maintain physical and emotional stability like diet, physical exercises, taking medications and vaccinations (8). Self-care monitoring is a process of vigilant body listening and symptom recognition that includes blood glucose monitoring, feed inspection, blood pressure monitoring and weight monitoring. Self-care management includes those behaviors that a person with diabetes performs to manage signs, symptoms or health problems if they occur. In diabetes, typically self-care management includes actions to treat hypo or hyperglycemia (7, 8). Although self-care is relevant for diabetes patients, often it is sub-optimal (9-11). In fact, self-care is influenced by many factors as anxiety, depression, cultural believes, perception of disease, social and family support (11-17). Therefore, a personalized planning of nursing care is needed to help people dealing with a variety of factors to perform adequate self-care.

Nursing care plans should consider knowledge, level of education, clinical conditions, and patients' ability and self-efficacy (18). Personalized nursing care plans improve self-care, quality of life, and patient outcomes (18-20). Thus, being able to identify accurate nursing diagnoses is relevant for nurses to implement effective self-care promotion interventions (18). The use of a Standardized Nursing Terminology (SNT) allows to improve the accuracy of nursing diagnoses (20, 21). Thus, the availability of a subset of standardized nursing diagnoses for the promotion of self-care in patients with diabetes could be relevant to define appropriate nursing interventions.

A limited number of studies focused on SNTs and diabetes self-care. These studies supported the importance of accurate nursing diagnoses to improve nursing practices (22-25). However, they showed some limitations. Two of them used a limited sample and only few nursing diagnoses were specific for diabetes (23, 25). One focused only on three nursing diagnoses and data were collected through e-mail questionnaires, without performing any kind of patient interview and/or physical examination (22). The last one used a qualitative design focusing mostly on patients' experience than on nursing diagnoses. Furthermore, nursing diagnoses in this study were not shared with the adults with diabetes or their families, thus limiting their validity (24). Finally, none of these studies used the International Classification for Nursing Practice (ICNP),

and the use of this classification in the field of diabetes self-care remains unexplored.

The ICNP provides a dictionary of terms that nurses can use to describe their practice in a systematic way (26). This is the nursing terminology recognized by the World Health Organization (WHO) and it can be potentially used with any conceptual model or nursing theory. The ICNP includes 815 pre-coordinated nursing diagnoses already available for users. Moreover, using the ICNP terms (about 4,000), nurses can create nursing diagnoses, interventions and outcomes that are specific for the clinical setting or the population of interest (27). Thus, the ICNP could be helpful to develop nursing care plans in diabetes care, bringing to an improvement of patients' clinical outcomes and quality of life. ICNP Catalogues or subsets represent sub-groups of nursing diagnoses, interventions and outcomes that are specific for a particular clinical area or population (27-29). However, an ICNP Catalogue to improve self-care of diabetes is not yet available, and subsets of ICNP nursing diagnoses, interventions and outcomes that are specific for this clinical area are missing (6, 26, 29). The availability of such a subset could help professionals to better identify nursing diagnoses and to develop tailored educational interventions (29).

Consistent with these gaps, the aims of this study were: 1) to identify the ICNP nursing diagnoses that are useful to promote self-care in people with DM; 2) to describe the prevalence of ICNP nursing diagnoses in self-care of people with DM. The general purpose was to provide an initial subset of ICNP nursing diagnoses for the promotion of self-care in DM patients to support future clinical or research projects.

Methods

Clinical international guidelines were reviewed to identify those behaviors that people with DM need to perform daily to maintain their health and quality of life (30, 31). These behaviors were grouped by the dimensions of self-care as defined by the Middle Range Theory of Self-care of Chronic Illness: self-care maintenance, self-care monitoring and self-care management (7). Based on the identified self-care behaviors, we developed a number of possible (actual or potential) nursing diagnoses that are present when one or more behaviors are not adequately performed by patients. For example, adherence to medications is a relevant self-care maintenance behavior for people with diabetes (32). Starting from this recommendation, we developed two possible nursing diagnoses that were "non-adherence to medications" (actual) or "risk for non-adherence to medications" (potential). Then, we checked the ICNP browser to find if the identified nursing diagnoses were already included in the pre-coordinated ones. When a nursing diagnosis was present, it was directly included into our subset. When the nursing diagnosis was absent - according to the ICNP guidelines - we developed a new (or a more specific) ICNP nursing diagnosis using the ICNP available terms (28, 29). Adopting this approach, we developed a sub-set of 55 nursing diagnoses for the improvement of self-care in DM population. The available ICNP terms did not allow to state 5 nursing diagnoses, because of the lack of some specific diabetes term within the ICNP. These diagnoses were: 1. Lack of knowledge about the effect of diet on blood sugar; 2. Inadequate insulin management; 3. Inadequate insulin self-administration; 4. Inability to modify behaviours to correct high or low blood sugar; 5. Lack of knowledge about behaviors to correct high or low blood sugar. These diagnoses will be submitted to the ICNP validation program with the aim to contribute to the international development of the terminology. To test the effectiveness of the developed subset, a multi-center cross-sectional study was conducted. Details of this study are described below.

Design

A multi-center cross-sectional study was conducted in two outpatient diabetes clinics in Northern Italy to test the effectiveness of the developed subset in capturing diabetes self-care-related nursing diagnoses in people with DM. Secondly, we aimed to describe the prevalence of the ICNP nursing diagnoses that we were able to detect. Authorizations were obtained from the Institutional Review Boards of participating centers. An informed consent was signed by each participating patient.

Sample and Setting

All the patients who underwent a visit to one of the involved centers were proposed to participate in the study. A consecutive sample of 170 patients with DM were finally enrolled (97.2% of the patients accepted to participate in the study and gave written informed consent; five patients refused to participate: all of them motivated the denial with the lack of time to adhere to the study procedures). Inclusion criteria were: having received a confirmed diagnosis of Type 1 or Type 2 Diabetes Mellitus, according to the most recent clinical guidelines (30); being at least 18 years old; being in treatment with insulin or oral glucose lowering medications. Exclusion criteria were: having been diagnosed with a type of diabetes different from Type 1 or Type 2; being in treatment with insulin micro-infusion therapy; having conditions that represent barriers for patients to adhere to the study procedures (i.e. being not able to read or understand Italian language; having not enough time to participate in the interview; having documented cognitive impairment).

Data collection

Clinical and sociodemographic patients' characteristics were collected as electronic medical records including: gender, age, level of education, family income, years from the diagnosis of diabetes, type of diabetes, number of diabetes microvascular complications, number of comorbidities (i.e. cardiovascular, cerebrovascular, respiratory), Body Mass Index, glycated haemoglobin (Hb1Ac), type of medications (i.e. insulin, oral or mixed).

To the aim of identifying nursing diagnoses, a two-step process has been conducted by two nurse researchers, who are among the authors of this study, who were specifically trained for data collection (IE, SR). First, an assessment of the patient has been performed. All recruited patients were physically examined to detect physical self-care problems such as feet ulcers, presence of lipodystrophy, or impaired weight. Second, an open-ended questions oral interview was administered to assess self-care behaviors according to the Middle Range Theory of Self-care of Chronic Illness (33). To this aim, 28 open-ended questions were asked to patients covering all the main areas of self-care as defined by the Self-Care of Diabetes Inventory (8). Within self-care maintenance, adherence to major diabetes treatment was assessed (i.e. adherence to diet, exercise, medication, follow-up visits, screening for complications). Within self-care monitoring, patients were asked about their behaviors to check blood glucose, body weight, blood pressure and feet conditions. Finally, within self-care management, patients were interviewed about their management of high or low blood sugar levels, symptoms recognition and management. Physical examinations and interviews were performed in a range of time varying from 15 to 30 minutes per patient. Based on this assessment, nursing diagnoses were identified using the pre-developed ICNP subset. All the patients were finally asked to confirm whether they agreed with the nursing diagnoses identified by data collectors. This process was performed to assure the validity and the reliability of the nursing diagnoses detected by research assistants (34). At the end, the 100% of the detected nursing diagnoses were confirmed by patients.

Data analysis

Measures of central tendency and dispersion were used to describe patients' characteristics (i.e. mean, standard deviation, median, frequency). Nursing diagnoses were grouped by self-care dimensions based on the Middle Range Theory of Self-care of Chronic Illness: self-care maintenance, self-care monitoring and self-care management. Percentages were used to describe the prevalence of the identified ICNP nursing diagnoses, both in the whole sample and by the three self-care dimensions defined by the theory.

Results

Out of the 170 enrolled patients, 48% were women. The mean age was 62 years old in the overall sample (SD=17.6). The 76% of patients had Type 2 Diabetes Mellitus and 38% was taking insulin. Others were using blood glucose lowering medications (44%), or a mixed therapy (18%). About 40% of the sample reported low income; the mean body mass index was high (27.5) and the metabolic control was inadequate in the majority of the patients (mean HbA1c = 7.9). Full description of patients' clinical and sociodemographic characteristics is reported in Table 1.

Table 1 - Socio-demographic and clinical characteristics of the sample (n = 170).

		Total N (%) or mean (SD)
N		170
Gender	Female	82 (48.2%)
	Male	88 (51.8%)
Age	Female	59.6 (SD=18.78)
	Male	62.2 (SD=16.40)
Education	Did not attend School	4 (2.3%)
	Elementary School	39 (22.9%)
	Middle school	53 (31.1%)
	High School	59 (34.7%)
	Degree	15 (8.8%)
Low family income		67 (39.4%)
Years from DM diagnosis		16,7 (11.5)
Type DM	T1DM	41 (24.1%)
	T2DM	129 (75.8%)
Number of Complications	None or 1	110 (64.7%) 42 (24.7%)
	≥2	18 (10.6%)
Number of Comorbidities	None	40 (23.5%)
	1	52 (30.5%)
	2	33 (19.4%)
	≥ 3	45 (26.4%)
BMI		27,5 (SD=5.5)
Hb1Ac		7,9% (SD=1.8)
Drug Therapy	Insulin Therapy	65 (38.2%)
	Oral Antidiabetic Medication	75 (44.1%)
	Mix Medication Therapy	30 (17.6%)

A total of 1,343 nursing diagnoses were identified, with an average of 8 nursing diagnoses per patient (SD=4.7). The 100% of the nursing diagnoses were described using the pre-developed subset. Overall, the five prevalent nursing diagnoses were: Body weight problem (56.4%), Non adherence to immunisation regime (53.5%), Conflicting attitude toward dietary regime (41.7%), Impaired weight monitoring (39.4%), and Lack of knowledge about blood glucose diagnostic test result (32.3%).

Within self-care maintenance, 671 nursing diagnoses were identified, with an average of 4 nursing diagnoses per patient (SD=2.7). The prevalent self-care maintenance nursing diagnoses were: Body weight problem (56.4%), Non adherence to immunisation regime (53.5%), Conflicting attitude toward dietary regime (41.7%), Lack of knowledge of immunisation regime (24.7%), and Impaired high nutritional intake (22.9%). Self-care maintenance nursing diagnoses are shown in Table 2.

Looking at self-care monitoring, 341 nursing diagnoses were identified, with a mean of 2 nursing diagnoses per person (SD=1.4). The prevalent self-care monitoring nursing diagnoses were: Impaired weight monitoring (39.4%), Lack of knowledge of self-care of foot (26.4%), Impaired self-care of foot (25.8%), Lack of awareness of symptoms (22.9%), and Impaired monitoring of blood pressure (21.7%). Self-care monitoring nursing diagnoses are shown in Table 3.

Finally, looking at self-care management, 331 nursing diagnoses were identified with an average of 2 nursing diagnoses per patient (SD=1.6). The prevalent self-care management nursing diagnoses were: Lack of knowledge of blood glucose test result (32.3%), Lack of knowledge about behaviors to correct high or low blood sugar (28.8%), Lack of knowledge about hyperglycemia management (27.3%), Inability to modify behaviours to correct high or low blood sugar (25.8%), and Lack of knowledge about hypoglycemia management (24.1%). Self-care management nursing diagnoses are shown in Table 4.

Discussion

The general purpose of this study was to provide an initial subset of ICNP nursing diagnoses useful to promote self-care in adults with diabetes. To the best of our knowledge, this is the first study to develop a subset of ICNP nursing diagnoses in this field. We identified 55 ICNP nursing diagnoses that were empirically tested, allowing to detect more than 1,300 nursing diagnoses related to diabetes self-care in the real-world clinical outpatient clinics. Furthermore, the identified ICNP nursing diagnoses allowed to describe the 100% of the diabetes self-care problems detected by data collectors. Finally, the subset used a worldwide recognized theoretical framework for chronic conditions, allowing a theory-driven approach for the assessment of patients and the development of effective interventions. This is relevant because the identified subset can contribute to diabetes nursing science under several points of view. First, no ICNP Catalogue or subset for the improvement of diabetes self-care actually exists, and this study provides a first original contribution to the knowledge on the use of standardized nursing terminologies in diabetes care. Second, clinicians can use this subset to improve the accuracy of nursing diagnoses, and, consequently, nursing outcomes and interventions. Third, administrators can use this subset to develop electronic nursing documentation systems, that are based on the ICNP, in order to describe nurses' activities in this field, to estimate nurses' workload, and to perform economic evaluations of diabetes healthcare services. Finally, researchers can start from this subset to further describe, explain and

Table 2 - Prevalent ICNP nursing diagnoses for self-care maintenance (n=170).

ICNP Nursing Diagnosis	ICNP Code	n (%)
Body weight problem[1]	(10027290)	96 (56.4%)
Non adherence to immunization regime[1]	(10030026)	91 (53.5)
Conflicting attitude toward dietary regime[1]	(10024969)	71 (41.7%)
Lack of knowledge of immunization regime[2]	(10000837 + 10031537)	42 (24.7%)
Impaired high nutritional intake[1]	(10025535)	39 (22.9%)
Conflicting attitude toward exercise[1]	(10023614)	32 (18.8%)
Impaired ability to manage exercise regime[1]	(10022603)	32 (18.8%)
Risk for impaired ability to perform caretaking[1]	(10032270)	30 (17.6%)
Non adherence to dietary regime[1]	(10022117)	24 (14.1%)
Tobacco abuse[1]	(10022247)	23 (13.5%)
Lack of knowledge of the diabetic foot ulcer prevention[2]	(10000837+10042894)	22 (13%)
Lack of knowledge of dietary regime[1]	(10021939)	21 (12.4%)
Non adherence to exercise regime[1]	(10022657)	17 (10%)
Lack of knowledge on the effect of diet on blood sugar[3]		16 (9.4%)
Impaired ability to perform hygiene of foot[2]	(10000987+10008155)	16 (9.4%)
Lack of knowledge of behaviour change process[1]	(10024734)	15 (8.8%)
Inadequate insulin self-management[3]		10 (6%)
Lack of knowledge of medication regime[1]	(10021941)	9 (5.3%)
Lack of knowledge of disease[1]	(10021994)	8 (4.7%)
Lack of knowledge about exercise[1]	(10022585)	7 (4.1%)
Impaired ability to manage dietary regime[1]	(10022592)	7 (4.1%)
Inadequate insulin self-administration[3]		7 (4.1%)
Alcohol abuse[1]	(10022234)	6 (3.5%)
Non adherence to diagnostic testing regime[1]	(10022101)	6 (3.5%)
Conflicting attitude toward treatment[1]	(10023622)	6 (3.5%)
Impaired ability To perform oral hygiene[1]	(10029645)	5 (3%)
Impaired health maintenance	(10000918)	4 (2.4%)
Non adherence to therapeutic regime[1]	(10022155)	4 (2.4%)
Impaired ability to perform hygien[1]	(10000987)	3 (2%)
Impaired adherence in performing hand hygiene[2]	(10012938+10030298+10014291+10041190)	1 (0.6%)
Impaired ability to manage medication regime[1]	(10022635)	1 (0.6%)

Note. 1 = Pre-coordinated diagnosis in the ICNP Database; 2 = Non pre coordinated diagnosis in the ICNP database 3 = Newly developed diagnosis.

classify the contents of nursing science in diabetes self-care, representing a base for the construction of an international ICNP Catalogue for this area of practice.

We found that adult diabetic patients presented a high number of nursing diagnoses in all the three self-care dimensions. However, many of these diagnoses were about the self-care maintenance dimension (i.e. mean of 8 nursing diagnoses per patient). This is surprising because previous studies identified self-care management and not self-care maintenance as the most problematic area for diabetic patients (8, 9). Furthermore, behaviours included in the self-care maintenance dimension represent

Table 3 - Prevalent ICNP nursing diagnoses for self-care monitoring (n=170).

ICNP Nursing Diagnosis	ICNP Code	n (%)
Impaired weight monitoring [2]	(10012938+10012154 +10021034)	67 (39.4%)
Lack of knowledge of self-care of foot[2]	(10000837+10017661+10008155)	45 (26.4%)
Impaired sight[2]	(10012938+10018124)	45 (26.47%)
Impaired self-care of foot[2]	(10012938+10017661+10008155)	44 (25.8%)
Lack of awareness of symptoms[1]	(10029479)	39 (22.9%)
Impaired monitoring of blood pressure[2]	(10012938+10012154+10003335)	37 (21.7%)
Lack of knowledge about monitoring of blood pressure[2]	(10000837+10012154+10003335)	26 (15.3%)
Impaired ability to monitor blood glucose[2]	(10012938+10029511+10030832)	18 (10.6%)
Impaired control of pain[2]	(10012938+10005157)	7 (4.1%)
Lack of knowledge about control of pain[2]	(10000837+10005157)	5 (2.9%)
Lack of Symptom Control[1]	(10029286)	4 (2.4%)
Lack of knowledge of screening sight[2]	(10000837+10017585+10018124)	2 (1.2%)
Impaired adherence to screening sight[2]	(10012938+10030298+10017585+10018124)	2 (1.2%)
Impaired ability to control of pain[2]	(10012938+10000034+10005157)	0

Note: 1= Pre-coordinated diagnosis in the ICNP Database; 2= Non pre coordinated diagnosis in the ICNP database 3= Newly developed diagnosis.

Table 4 - Prevalent ICNP nursing diagnoses for self-care management (n=170).

ICNP Nursing Diagnosis	ICNP Code	n (%)
Lack of knowledge of blood glucose test result[2]	(10000837+10030832+10019616)	55 (32.3%)
Lack of knowledge about behaviours to correct high or low blood sugar[3]		49 (28.8%)
Impaired knowledge of wound care[2]	(10012938+10011026)	49 (28.8%)
Lack of knowledge about hyper-glycaemia management[2]	(10000837+10011625+10027521)	46 (27.3%)
Inability to modify behaviours to correct high or low blood sugar[3]		44 (25.8%)
Lack of knowledge about hypo-glycaemia management[2]	(10000837+10011625+10027513)	41 (24.1%)
Lack of knowledge of the relationship between Behavioural Regime and Blood Glucose Test Result [2]	(10000837+10016684+10038993+10019616+10030832)	35 (20.6%)
Impaired ability managing skin wound[2]	(10012938+10000034+10011625+10018256)	7 (4.1%)
Impaired ability managing hyperglycaemia[2]	(10012938+10000034+10011625+10027521)	3 (1.8%)
Impaired ability managing hypoglycaemia[2]	(10012938+10000034+10011625+10027513)	2 (1.2%)

Note. 1= Pre-coordinated diagnosis in the ICNP Database; 2= Non pre coordinated diagnosis in the ICNP database 3= Newly developed diagnosis.

core elements of diabetes self-care education (35). However, self-care maintenance is a complex dimension that includes many activities aimed to maintain both physical and psychological stability (33). Thus, it could be difficult for a patient to persist in following several different recommendations about diet, movement, medications, follow-up visits and screening (3). We found that the most problematic areas in our sample were nutritional aspects (56% of patients) and vaccination regime (54% of patients). It is not surprising that maintaining an adequate nutritional intake and body weight is difficult for the diabetic patients. In fact, previous studies assessing nursing diagnoses in this population found the same result (23, 25). On the other side, vaccinations (against influenza and pneumococcal diseases) are relevant for diabetic patients to avoid several complications as inadequate metabolic control, severe superinfections, hospitalizations, and premature death (3). Our findings support those of previous studies showing that people with diabetes underestimate the influence of vaccination on their health (36). This is relevant because improving patients' adherence to vaccinations will have an impact not only on patients' outcomes but on healthcare costs too. Thus, under a public health point of view, strategies to disseminate a positive culture about vaccinations in chronically ill patients – as in the general population – are strongly needed. Based on this, we recommend that educational interventions aimed to promote self-care maintenance in diabetic patients pay particular attention to this worrying issue.

Looking at self-care monitoring and self-care management we found that even if patients were likely to monitor their blood sugar (only 10% of the whole sample showed inadequate monitoring), they struggled to understand blood sugar values detected by diagnostic tests (32%), and to modify behaviours to correct high or low blood sugar levels (26%). This is not surprising because self-care management requires complex knowledge and skills, as problem-solving and decision-making (8, 33). Thus, based on our results, patient education should focus more on this kind of knowledge and skills than stressing regular blood glucose monitoring.

Strengths and limitations

This study presents limitations that need to be acknowledged. The cross-sectional nature of the study, the limited sample and the finite setting where the study was conducted, represent some limitations to give this research a generalized significance. However, our sample was larger than those of previous studies focusing on the use of standardized nursing terminologies in diabetes care, sampling was consecutive, data collection was multi-centered, the developed subset was theoretically grounded, and the use of ICNP in diabetes self-care research was unexplored before.

Conclusion

Self-care is a key for people with diabetes to maintain health and quality of life. The use of standardized nursing terminologies can help nurses to be more accurate in the development of the nursing care plan for people with diabetes. We developed and tested an initial subset of ICNP nursing diagnoses that can be useful for the promotion of self-care of adults with diabetes mellitus.

Clinicians can use this subset to improve the accuracy of the documentation of nursing care, to make their work more visible, and to clearly communicate the contents of their activity both to other nurses and other healthcare professionals. Also, results could be helpful to support the development of electronic documentation systems for diabetes care. In Public Health, the developed subset can be used to assess

the cost-effectiveness of diabetes healthcare services.

Future research is needed to assess the effectiveness of this subset in samples and settings that are different from the one where it was developed, to complete the subset with ICNP-based nursing outcomes and interventions for this field of practice, and to support the development of an international ICNP Catalogue for diabetes care.

Conflict of interests
The authors declare that no conflicts of interests exist.
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Riassunto

Sviluppo di un subset di diagnosi infermieristiche ICNP per la promozione del self-care nelle persone con diabete mellito: uno studio osservazionale multicentrico

Introduzione. Il self-care è fondamentale per i pazienti con diabete mellito allo scopo di prevenire gravi complicanze e mantenere una buona qualità di vita. Una pianificazione infermieristica personalizzata ed accurata può favorire interventi efficaci di promozione del self-care. Pochi studi hanno indagato le diagnosi infermieristiche specifiche per il self-care del diabete e nessuno di questi ha utilizzato l'*International Classification for Nursing Practice* (ICNP). Inoltre, non esistono Catalogue internazionali per supportare la pratica infermieristica in questo campo.

Scopi. Identificare le diagnosi infermieristiche ICNP utili nella promozione del self-care dei pazienti con diabete mellito; descrivere la prevalenza delle diagnosi infermieristiche ICNP nell'ambito del self-care del diabete mellito.

Metodi. È stato sviluppato un subset di 55 diagnosi infermieristiche ICNP in accordo con la Teoria a medio raggio sul self-care delle malattie croniche e le linee guida cliniche più recenti. Il subset è stato testato attraverso uno studio osservazionale multicentrico su un campione consecutivo di 170 pazienti con diagnosi confermata di diabete mellito di tipo 1 o di tipo 2. I dati sono stati raccolti attraverso la documentazione sanitaria, l'esame fisico e un'intervista semi-strutturata.

Risultati. Sono state identificate 1343 diagnosi infermieristiche con una media di 8 per paziente. Il 100% delle diagnosi infermieristiche è stato descritto attraverso l'impiego del subset predefinito. Complessivamente, le diagnosi infermieristiche prevalenti sono state: Alterazione del peso corporeo (56.4%), Non aderenza al piano vaccinale (53.5%), Atteggiamento conflittuale verso la dieta (41.7%), Inadeguato monitoraggio del peso corporeo (39.4%) e Carenza di conoscenze sui risultati delle misurazioni glicemiche (32.3%). La prevalenza delle diagnosi infermieristiche è stata descritta anche nelle tre dimensioni del self-care: self-care maintenance, monitoring e management.

Conclusioni. L'elevato numero di diagnosi infermieristiche suggerisce un bisogno rilevante di educazione dei pazienti da parte dei professionisti sanitari. Clinici e manager delle strutture sanitarie possono utilizzare questo subset per migliorare l'accuratezza della documentazione assistenziale. In sanità pubblica, il subset potrebbe essere utilizzato per la valutazione costo-efficacia dei servizi sanitari per i pazienti con diabete. Future ricerche sono necessarie per valutare l'efficacia del subset in contesti differenti. Infine, il subset può rappresentare un punto di partenza per lo sviluppo di un Catalogue ICNP internazionale per migliorare l'assistenza rivolta ai pazienti con diabete.

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