Filling a gap in standardized nursing terminology. Development of a new nursing diagnosis proposal on heart failure self-care

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Abstract

Purpose: Heart failure is a highly prevalent chronic health problem associated with poor quality-of-life and negative outcomes. Self-care is a cornerstone in patients suffering from heart failure. Nurses are commonly engaged in enhancing patients' self-care behaviors, but the specific condition of deficit on self-care is not clearly identified by nurses. No nursing diagnoses focused on self-care of heart failure patients is currently available. This study aimed to develop a new nursing diagnosis that focuses on self-care in heart failure patients.

Data sources: A concept and content analysis were used. Some steps of the concept analysis were performed through an integrative literature review conducted searching in PUBMED and CINAHL databases to identify attributes, antecedents, and consequences of the diagnosis. Forty-five articles were selected from the 1450 studies found. Then, the content analysis was performed by an international panel of 29 experts. Two Delphi rounds were used to achieve consensus and an item content validity index was calculated for each diagnostic element.

Data synthesis: Integrative review proposed four diagnostic labels, two definitions, 15 defining characteristics, and 44 related factors. After the two Delphi rounds a consensus was reached for each diagnostic indicator with a content validity index ranging from 82.8% to 100%. The nursing diagnosis—labeled heart failure self-care deficit—was validated with a definition, eight defining characteristics, 15 related factors, and five at-risk populations.

Conclusions: This diagnosis allows nurses to document patients' self-care in daily clinical practice through a standard nursing terminology, by naming this health problem, describing its etiology, and clinical manifestations.

Implications for nursing practice: This new diagnosis is expected to assist nursing clinicians, educators, and students in clinical reasoning with the aim to improve diagnostic accuracy in identifying patients with a heart failure self-care deficit, to select the most appropriate interventions and pursue better outcomes.

KEYWORDS
concept analysis, content analysis, heart failure, nursing diagnosis, nursing practice, self-care

INTRODUCTION

Heart failure (HF) is a highly prevalent health problem worldwide. Fifteen million people are affected by HF in Europe (Ponikowski et al., 2016) and 6.5 million in the United States (Benjamin et al., 2018). This chronic condition is associated with high hospitalization rates and costs, both in the United States (Urbich et al., 2020) and in Europe (Lesyuk et al., 2018). Mortality is also high in patients with HF, with up to two-fifths of all patients dying within one year after diagnosis (Ciapponi et al., 2016; Ponikowski et al., 2016). Moreover, HF patients have poorer quality-of-life compared to patients affected by other chronic conditions (Zhang et al., 2016).

For all the above reasons, self-care is considered a cornerstone in patients suffering from chronic HF. In this population, self-care is defined, according to the situation-specific theory of HF self-care, as a naturalistic decision-making process adopted by patients as they choose appropriate behaviors to preserve physiological stability (self-care maintenance), monitor and detect symptoms (self-care symptom perception), and respond to symptoms when they occur (self-care management) (Riegel et al., 2016). It has been shown that HF patients with inadequate self-care have repeated and longer hospitalizations and more acute cardiac events (Ware et al., 2020). Conversely, patients with adequate self-care behaviors have better health-related outcomes, such as lower mortality rates, fewer visits to emergency services, reduced hospital admissions, and improved quality-of-life (Ma, 2019; Ruppar et al., 2016).

Given the relevance of HF self-care, nurses are commonly engaged in assessing, documenting, and intervening to enhance patients' self-care behaviors. Several studies have investigated self-care behaviors in HF patients (Buck et al., 2018; Sedlar et al., 2017) and documented the nursing interventions (Jiang et al., 2018) required to help patients improve their self-care (Shao et al., 2013; Stawnychy et al., 2013). Despite the available evidence, the unique contributions of the disciplinary nursing knowledge to patient outcomes are not always clearly articulated in the interdisciplinary team (Flanagan, 2018). The use of nursing diagnoses is a way of articulating concepts validly representing disciplinary knowledge. Therefore, it is expected that the human responses represented by these diagnoses reflect the scientific development of the discipline (Carvalho, Cruz, & Herdman, 2013).

Nevertheless, there are currently no specific nursing diagnoses available in standardized nursing classifications focused on self-care of HF patients from this perspective.

Background

Healthcare professionals seek to describe and code disciplinary knowledge using a common and shared language (Herdman & Kamitsuru, 2017). The use of consistent terms to identify a concept is important to communicate what nurses assess and treat and the relationship between what nurses do and patient outcomes. "Nursing diagnosis" is the accepted term for the nurses' clinical judgments concerning relevant human responses to health condition/life process of an individual, family, group, or community. Diagnosing is a pivotal element in the nursing process and represents the intellectual component of the nursing profession. The nursing diagnosis provides the basis for selecting nursing interventions aimed at individual and specific causes to achieve patient outcomes within the scope of professional nursing accountability (Herdman & Kamitsuru, 2017; Juve-Udina, 2013). Because nurses should primarily intervene to remove the underlying antecedents of the diagnoses (i.e., predisposing, disabling, precipitating, or reinforcing factors) (de Oliveira Lopes et al., 2017), these diagnostic indicators have been objects of numerous studies, along with the essential diagnostic attributes (Ferreira et al., 2020; Mangueira Sde & Lopes, 2016; Neves da Costa et al., 2020; Paganin & Rabelo, 2013; Santos et al., 2020; Silva et al., 2020). Moreover, the systematic inclusion of nursing diagnoses in electronic health records have been shown to enhance the predictive ability of clinical data regarding length of hospital stay, in-hospital mortality and use of healthcare resources (Company-Sancho et al., 2017; D'Agostino et al., 2019; Sanson et al., 2019; Sanson et al, 2017). In addition, the use of the nursing process documented with the standardized nursing languages provides more coverage for all health promotion and prevention services in primary health care (Pérez Rivas et al., 2016).

In this context, the development of specific evidence-based nursing diagnoses for patients with HF may improve clinical practice, research, knowledge and education, and contribute to the progression of nursing science as a discipline (Marrs & Lowry, 2006).

Here we propose a new nursing diagnosis based on the situation-specific theory of HF self-care, that includes the three dimensions of self-care maintenance, symptom perception, and management in patients with HF and to illustrate the process followed for its development.

MATERIAL AND METHODS

The diagnostic structure

The nursing diagnosis was developed according to the NANDA-International (NANDA-I) structure (Herdman & Kamitsuru, 2017), as its terminology is the most widely used and is considered the most frequently researched nursing diagnosis vocabulary (Sanson et al., 2017; Tastan et al., 2014).

The proposed new nursing diagnosis was stated as a brief declaration (the diagnostic "label") describing what nurses deem relevant about the responses of an individual, a family, a group, or a community to actual or potential health conditions/life processes (Herdman & Kamitsuru, 2017). To ensure appropriate diagnostic accuracy, NANDA-I diagnoses comprise a definition and specific diagnostic indicators: the "defining characteristics"; the "related factors"; the "at-risk populations"; and the "associated conditions."

For the label, the following dimensions (diagnostic axes) were considered to operationally define the human response considered in the diagnostic process: the diagnostic focus, or key concept ("self-care": axis 1); the subject of the diagnosis (an individual: axis 2); the judgment (e.g., "ineffective," "impaired," "deficient," or "deficit": axis 3); the age (adults: axis 5); the status of the diagnosis (problem-focused diagnosis: axis 7) (Herdman & Kamitsuru, 2017).

The definition must be consistent with the label, providing a clear, precise description of the diagnostic title without using either the label words or any defining characteristic. The defining characteristics are groups of signs, symptoms, or inferences observable through assessment as manifestations of the nursing diagnosis (Herdman & Kamitsuru, 2017).

Related factors are represented by etiologies, circumstances, facts, or influences having a patterned relationship with the nursing diagnosis, which can be modified by nursing interventions. At-risk populations are categories of individuals who are most likely to present with the diagnosis. Associated conditions are medical conditions (e.g., medical diagnoses, medications, devices, procedures) that may increase the diagnostic accuracy, although they are not independently modifiable by nursing interventions (Herdman & Kamitsuru, 2017).

The nursing diagnosis development process

Based on diagnostic testing theory, Lopes et al. (2012) proposed that researchers perform the following steps to determine the accuracy of diagnostic indicators: (1) concept analysis; (2) content analysis by experts; and (3) analysis of the accuracy of clinical indicators. In this study, we developed the first two stages, that is, concept analysis and content analysis.

Step 1. Concept analysis

Six of the eight-step concept analysis model by Walker and Avant (2011) were adopted, while the remaining two steps, namely identification of a model case and identification of additional cases, fall outside of the scope of this study:

a. Selection of the concept: "HF self-care";
b. Determination of the purposes of the conceptual analysis, that is, to develop conceptual understanding of "HF self-care" in order to determine an undesirable human response to HF (a problem-focused nursing diagnosis);
c. Identification of the use of the concept: we considered that "HF self-care," as opposed to "self-care" delimitates the use of the concept "self-care" to patients with HF for the purpose of this analysis;
d. Identification of the attributes that define the concept;
e. Identification of the antecedents and consequents of the concept;
f. Definition of empirical referents for the defining attributes.

Steps d, e and f were performed through an integrative literature review aimed at identifying attributes (i.e., definition), antecedents (i.e., the related factors, associated conditions, and at-risk populations), and consequents (i.e., the defining characteristics) of the diagnosis (Pompeo et al., 2009). The integrative review was conducted by directly focusing on self-care in the specific HF population to draw focused conclusions and avoid generalizations since self-care represents a wide, cross-sectional focus of interest for nursing (Matarese et al., 2018).

TABLE 1 Final search strategies in PubMed and CINAHL databases

PubMed database
(("Self Care"[Mesh] OR "self care") AND ("Heart Failure"[Mesh] OR "heart failure")) AND (antecedent* OR attribute* OR factor* OR predictor* OR determinant*)
CINAHL database
(((MH "Heart Failure+") OR "Heart Failure") AND ((MH "Self Care+") OR "Self Care")) AND (antecedent* OR attribute* OR factor* OR predictor* OR determinant*)
Filters: Publication date from 1960/01/01 to 2017/03/31

The guiding questions for the integrative review were: What is the definition of HF self-care and what are the clinical indicators and possible etiologies of this phenomenon in adults? The last search was conducted in March 2017 via PubMed and CINAHL databases (see search strategies in Table 1), as they contain most of the world's literature on self-care. The inclusion criteria were: articles published in English—with abstracts available—focusing on self-care in adult patients with HF. No exclusion criteria were established related to study design (e.g., descriptive, experimental, review). In addition, a manual search was performed in cardiovascular journals, article references, and gray literature (e.g., doctoral theses).

A total of 1450 studies were found in both databases. After applying the inclusion criteria, a total of 45 articles were selected. The manual search retrieved six other articles and one doctoral dissertation. Data extraction was performed by three nurse researchers with expertise on standardized nursing languages and HF self-care to identify the attributes, antecedents, consequences, and empirical referents of HF self-care. Because our proposal was a problem-focused diagnosis, the potential label should represent a clinical judgment concerning an *undesirable* human response to a health condition (heart failure). It should consist of at least a focus and a judgment term. The focus should represent the diagnostic concept/the core of the diagnosis and might consist of one or more nouns. The judgment term was pulled from the definitions of the current judgment terms for axis 3 (judgment) of the NANDA-I (Herdman & Kamitsuru, 2017).

The possible definitions for the diagnosis were based on the attributes of HF self-care. The proposal of defining characteristics was based on the literature findings representing consequent elements and empirical referents, or observable manifestations of the proposed diagnosis (Herdman & Kamitsuru, 2017).

The related factors, at-risk populations and associated conditions were selected by considering the antecedent elements potentially resulting in etiologic or favoring factors for the diagnosis, according

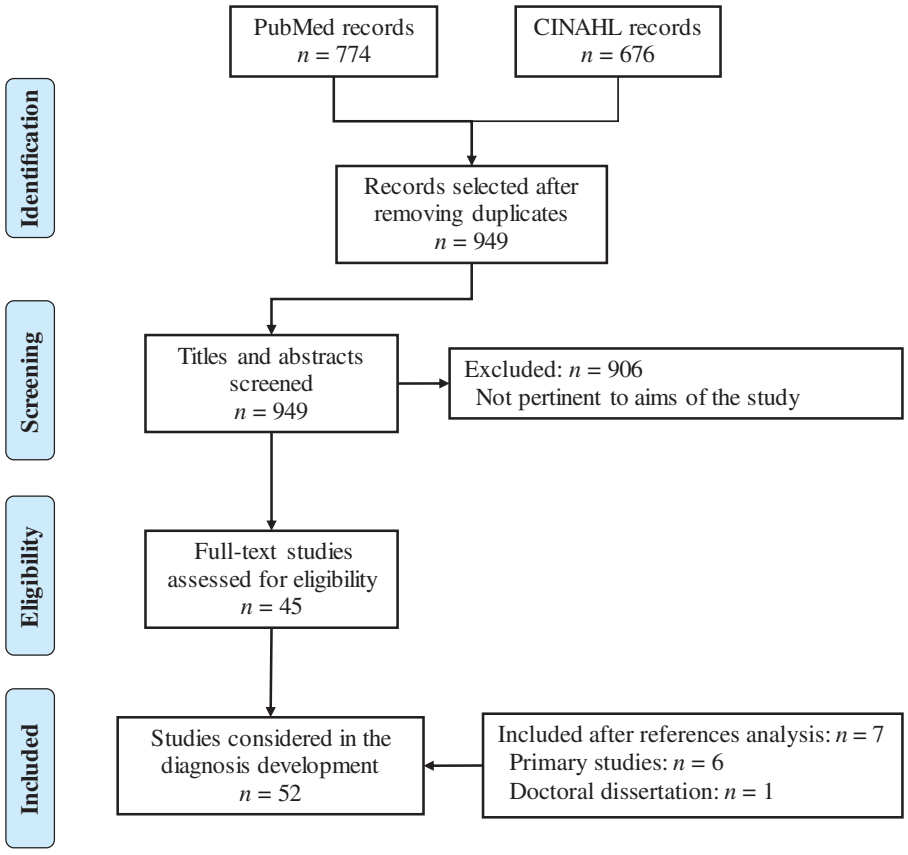

FIGURE 1 Flow diagram of the studies selection process

to the NANDA-I definitions presented in the section *The Diagnostic Structure*.

The flow diagram of the studies selection process is reported in Figure 1. The complete list of the publications reviewed together with the assigned levels of evidence and quality rates is available as a Supplemental file.

Step 2. Content analysis

An item-by-item content analysis was performed by a panel of experts to determine their level of agreement regarding the relevance of each diagnostic indicator. Panel members were identified through snowball sampling based on their specific expertise in clinical nursing, HF self-care, and academic experience in nursing diagnoses (Quatrini Carvalho Passos Guimaraes et al., 2016). The panel size was calculated by considering the accepted confidence level (95%), the percentage of experts needed to establish consensus (80%), and the acceptable difference rate with respect to the expected threshold (15%) (Lopes et al., 2012). Accordingly, a panel of 29 expert nurses—whose main characteristics are described in Table 2—was recruited.

Two rounds of Delphi survey were used to achieve the consensus among participants on elements of the nursing diagnosis (Linstone & Turoff, 1975). Participant anonymity was preserved throughout the process. In the first-round, a questionnaire containing the diagnostic indicators established in Step 1 was e-mailed along with a letter describing the objective of the study, the focus (self-care), the target population (adults with HF), and the definitions of the diagnostic indicators. The panel members were invited to grade the relevance of each item for the proposed nursing diagnosis on a four-point Likert scale (1: irrelevant; 2: somewhat relevant; 3: quite relevant; 4: extremely relevant). Free-text comments were allowed for suggestions or disagreements related to item format or content. Experts were informed that they would be asked to participate in a second round to judge items from the first round as well as new or refined items. Judges were asked to respond within two weeks and a reminder was sent by e-mail after 10 days.

Panel responses were statistically analyzed, and the comments discussed. For analysis, an item content validity index (I-CVI) was calculated as the number of experts who rated the item 3 or 4 divided by the total number of experts voting on that item. A threshold of ≥70% was chosen for inclusion at this stage. Items below this threshold or judged redundant or nonspecific by the panel were not considered further. Several minor corrections or word refinements were implemented to address specific comments. This stage required 60 days for completion.

The relevant, revised items were then submitted to all panel members for the second-round of assessment. A higher threshold (≥80%) was chosen for inclusion at this stage (Paloma-Castro et al., 2014). Free-text comments were allowed. No further rounds were performed, since more than two rounds would have increased the risk for friction

TABLE 2 Main characteristics of the 29 experts in the Delphi panel for content analysis

Gender	Female: 22; 75.9% Male: 7; 24.1%
Location	America: 16; 55.2% Europe: 11; 37.9% Asia and Oceania: 2; 6.9%
Profession	Nurse: 28; 96.6% Clinical Health Psychologist: 1; 3.4%
Higher education degree	Doctor of Philosophy (PhD): 28; 96.6% Master's degree: 1; 3.4%
Current job position*	Research: 24; 82.8% Education: 16; 55.2% Clinic: 7; 24.1% Policy maker: 1; 3.4%
Professional expertise† (years of experience)	Nursing profession ($n = 28$): 23.0 (11.0–33.5) Clinical nursing with heart failure patients ($n = 25$): 10.0 (5.0–21.0) Research on heart failure self-care ($n = 28$): 8.0 (5.0–12.5) Clinical teaching on heart failure self-care ($n = 20$): 4.0 (0.0–14.5) Teaching or research in standardized nursing languages ($n = 28$): 2.0 (0.0–9.5)

Data are reported as "number; percentage" or "median (interquartile range)."
*Some members simultaneously hold more than one position.
†All members covered more than one professional expertise field.

among panel members (McMillan et al., 2016). After analyzing the assigned rating and excluding the items failing to reach consensus, a final definitive list of all diagnostic indicators was devised.

RESULTS

Step 1. Concept analysis

Identification of the attributes that define the concept—determining the diagnostic label and definition

Four diagnostic labels were proposed based on which would be an undesirable human response to HF (Herdman & Kamitsuru, 2017), consisting of a focus (HF self-care) and a judgment term: "Deficient self-care in heart failure"; "Ineffective self-care in heart failure"; "Deficit in self-care of heart failure"; "Heart failure self-care deficit."

Two definitions were formulated for the diagnosis based on previously proposed descriptions of the concept of self-care in persons with HF (Clark et al., 2010; Riegel et al., 2011), with a focus on the attributes determined by the situation-specific theory of HF self-care: decision making, choosing appropriate behaviors to preserve physiological stability (self-care maintenance), monitoring and detecting symptoms (self-care symptom perception), and responding to symptoms when they occur (self-care management) (Riegel et al., 2016).

Identification of the antecedents, consequents, and empirical referents of the concept—determining the diagnostic indicators

Fifteen defining characteristics were proposed according to signs and symptoms identified in two validated self-care assessment tools, that is, the Self-Care of Heart Failure Index (Riegel et al., 2009) and the European Heart Failure Self-Care Behavior Scale (Jaarsma et al., 2003), which address self-care maintenance, symptom perception, self-care management, consulting behaviors, and/or treatment adherence.

Forty-four potentially related factors were proposed, while at-risk populations and associated conditions were discussed later because these variables were proposed starting with the most updated NANDA-I release after the study was already underway. We decided to extend the proposal by including these new diagnostic indicators, so the related items were considered only in the second Delphi round.

Step 2. Content analysis

The definitive indicators of the new nursing diagnosis and the scores assigned by the panel through the Delphi process are reported in Table 3.

The labels "Deficit in self-care of heart failure" and for "Heart failure self-care deficit" were judged to express the same label with different structure and obtained an overall 72.2% agreement when considering participants attributing a score of ≥3 to one or the other choice. For this reason, these two labels were proposed in the second Delphi round and "Heart failure self-care deficit" was approved with an agreement of 93.1%.

None of the proposed definitions exceeded the minimum threshold during the first round. However, the panel suggested several modifications to be implemented, so that a new version of the definition was submitted for the second round, reaching an 82.8% agreement.

The 15 defining characteristics identified through the integrative review were submitted for panel consideration in the first round. Two characteristics did not exceed the preestablished minimum threshold score and four items were merged into two based on panel member comments. Among the 11 labels submitted for the second-round assessment, eight were definitively approved with expert agreement ranging from 89.7% to 100%.

Nine of the 44 related factors were excluded after the first round because they did not reach the minimum score threshold. Moreover, two groups of four items and two groups of three items were combined into four new related factor statements because they were judged by the panel as expressing the same idea. Furthermore, two items were excluded despite having exceeded the threshold score based on relevant remarks of some panel members (e.g., unspecific items or too broad). Overall, 23 items were considered in the second-round and 15 were definitively approved with expert agreement ranging from 89.7% to 100%.

Five at-risk populations identified through the integrative review and proposed for the content analysis were approved by the panel, with

TABLE 3 Indicators of the new proposed nursing diagnosis and scores assigned by the Delphi expert panel

Indicator	First round[‡] (%)	Second round[‡] (%)
Label		
Heart failure self-care deficit	72.2	93.1 (58.6)[*]
Definition[†]		
Deficit in the behaviors used by patients to manage their heart failure. These behaviors include adherence to prescribed treatments, monitoring signs and symptoms of decompensation, and actions taken to regain stability with autonomous and consulting behaviors	67.9	82.8
Defining characteristics		
Failure to recognize symptoms and signs of an exacerbation (ankle swelling, weight gain, difficulty breathing)	92.9	100
Failure to take action to relieve signs and symptoms (reduce salt and fluid intake, call the providers for guidance)	92.9	100
Poor adherence to the prescribed medications	82.1	100
Inconsistent monitoring of ankles for swelling	89.3	93.1
Inconsistent weight monitoring	89.3	93.1
Missed medical and nursing check-up appointments	92.9	93.1
High sodium-diet	78.6	89.7
Physical activity less than recommended	96.4	89.7
Related factors		
Depression	100	100
Ineffective communication between the client and the healthcare professional	82.1	100
Insufficient motivation	89.3	100
Insufficient social support	100	100
Low health literacy	71.4	100
Health beliefs (non-specific)	85.7	96.6
Insufficient self-efficacy	92.9	96.6
Insufficient skills to perform the treatment regimen	92.9	96.6
Anxiety	92.9	93.1
Fatigue	92.9	93.1
Insufficient heart failure knowledge	78.6	93.1
Lack of perceived benefit	82.1	93.1
Poor memory or lapses in attention	75.0	93.1
Values incongruent with treatment plan	78.6	93.1
Lack of continuity of healthcare professional	92.9	89.7
At-risk populations		
Time since heart failure diagnosis	/	82.8
Comorbidity	/	86.2
Insufficient resources (nonspecific)	/	86.2
Quality of the relationship with the healthcare professional	/	86.2
Quality of the relationship with the informal caregiver	/	86.2

*Play-off between two similar labels.

[†]The final approved definition underwent substantial rewording after the 1st round.

[‡]Percentage of experts who approved the item in the final form ($n = 29$). See Methods and Results sections for further details.

experts' agreement ranging from 82.8% to 86.2%. No associated condition was identified.

DISCUSSION

The process of diagnosis development

The present study developed a HF self-care deficit diagnosis based on a solid theoretical framework, which is the situation-specific theory of HF self-care and evidence-based literature supported by content expert validity. The label "Heart failure self-care deficit" was considered to represent a condition characterized by deficient behaviors used by patients to manage their HF. Almost complete agreement was found regarding the "self-care" key concept, consisting of practices performed by individuals to the best of their ability as a human intentional regulatory function to maintain life, health and well-being (Orem et al., 1995). To indicate suboptimal self-care management, some experts had suggested using the term "inadequate." The argument was that this term is used widely in the scientific literature on the topic of self-care, being the most appropriate to describe the quantitative or qualitative lack of skills required to implement the process of disease management and health maintenance. Others would have preferred "insufficient" as a term representing both self-care actions not taken and ineffective actions. The term "ineffective" was also suggested as universally applicable because it can encompass adequate self-care done in an incorrect or ineffective manner. However, others judged this term as nonspecific and therefore inappropriate. Therefore, the greatest convergence was around the term "deficit," similar to other nursing diagnosis labels, defined as "not having enough of a specified quality" (i.e., insufficient or inadequate) (Herdman & Kamitsuru, 2017).

Consistently, the selected diagnostic definition recommends that the diagnosis should be made to document deficient behaviors noticed in a patient's management of her/his own HF condition (da Conceicao et al., 2015). Eight specific behaviors were subsequently identified as cues (defining characteristics) of self-care deficit. Three of these conditions (poor adherence to the prescribed medication regimen, failure to recognize signs and symptoms of an exacerbation, and failure to take action to relieve them) received 100% endorsement. Extensive literature has documented the presence of these characteristics in patients with poorly controlled HF (Lee & Riegel, 2018; Lee et al., 2018; Wu & Moser, 2018). A HF self-care deficit diagnosis based on the aforementioned conditions should thus stimulate nurses to identify possible causes in order to implement the most appropriate interventions.

Moreover, the expert panel members identified a series of factors that converge as the cause of this diagnosis and therefore should be considered by nurses as factors on which to act to improve the patient's self-care behavior (de Oliveira Lopes et al., 2017).

Limitations

Many of the experts were not native English speakers, therefore their language abilities may have influenced their choice of diagnostic indicators. However, we think that this problem was effectively addressed by considering and discussing all proposed amendments and requests for clarification.

Implications for nursing practice

The proposed nursing diagnosis *Heart failure self-care deficit* identifies a concept that is more granular than other concepts of current NANDA-I diagnoses (Keet, 2006), such as *Ineffective health management*. For example, for the *Heart failure self-care deficit* diagnosis, the related factor *insufficient heart failure knowledge* is more specific than the nursing diagnosis *Deficient knowledge*. Failure to treat *Heart failure self-care deficit* might lead to other nursing diagnoses, such as *Activity intolerance*, *Excessive fluid volume*, and *Ineffective breathing pattern*.

This new nursing diagnosis has the potential to document the clinical judgments made by nurses delivering care to patients who have difficulty performing HF self-care. This diagnosis is consistent with both European and American guidelines for the management of HF (Ponikowski et al., 2016; Yancy et al., 2017), recommending reinforcement of HF self-care with particular attention to educating patients about how to keep their illness under control, the importance of monitoring their symptoms, what to do if symptoms worsen, and behaviors useful to manage symptoms. Any of these factors—and many others—can influence self-care because of the inherent complexity of HF, its different levels of severity and the specific characteristics of each single patient.

HF is a chronic condition often associated with one or more cardiac and noncardiac comorbidities, which increases the complexity of HF management, the risk of mortality and hospitalization (Scrutinio et al., 2016; Streng et al., 2018). For this reason, the panel considered people with multiple comorbidities at high-risk of developing a HF self-care deficit diagnosis.

The nursing perspective is however much broader and considers the patient's condition and the needed nursing care under a comprehensive holistic approach, which means that the same importance should be attributed to all the physical, psychological, and social aspects of individuals, families, and communities (World Health Organization, 1998). When applying this perspective to people with HF, it is important to consider that the quality of self-care is influenced by a combination of physical, psychological, and social factors, which may cause a conflict between adherence to therapeutic and dietary prescriptions and adaptation to phases of greater or lesser well-being, in a continuum that may lead to loss of compensation, exacerbation of symptoms, and need for hospitalization (Sevilla-Cazes et al., 2018). This new nursing diagnosis completely agrees with this perspective and identifies several consistent, evidence-based antecedent factors on which to plan focused interventions to improve HF self-care.

This new nursing diagnosis can help nurses in their daily clinical practice to consider each single behavior or condition associated with a self-care deficit. To name a few major influences, the diagnosis may be related to low health literacy (Matsuoka et al., 2016), insufficient knowledge (Liu et al., 2014) or lack of experience with HF

(da Conceicao et al., 2015). Furthermore, nurses need to remember the risk that even the most virtuous patients may lose motivation over time because of lack of perceived benefits (Oosterom-Calo et al., 2012). Insufficient self-efficacy or health beliefs and values incongruent with the treatment plan may further worsen this situation (Bidwell et al., 2015; Dickson et al., 2013). Moreover, factors such as anxiety, depression, fatigue, or deficits in memory or attention may compromise adherence to self-care recommendations (Jaarsma et al., 2017; Kessing et al., 2017; Lee et al., 2015).

In addition, many situations—such as ineffective communication, poor relationship, or lack of continuity between the client and the healthcare professionals—may compromise the efficacy of nursing care (Ivynian et al., 2020; Sterling et al., 2018). Other psychosocial, behavioral, and socioeconomic relevant factors outside the patient's control or ability (e.g., lack of access to care, inability to afford prescribed medications) should be taken into account by nurses as potential obstacles to performing self-care behaviors (Reilly et al., 2015). Similarly, a poor-quality relationship between the patient and her/his informal caregiver (e.g., the partner or spouse)—who is very often called upon to play an essential role in promoting self-care at home—can greatly influence the self-care process (Bidwell et al., 2015; Vellone et al., 2018).

Nurses can provide effective interventions to improve the dimensions of self-care maintenance (daily adherence), self-care symptom perception and self-care management (appropriate recognition and response to symptoms) in HF patients (Awoke et al., 2019; Masterson Creber et al., 2016). Although the same dimensions could represent the same focus for nurses irrespective of the medical diagnosis, these are used differently with patients affected by other medical conditions (e.g., diabetes, end-stage kidney disease or chronic obstructive pulmonary disease) (Krzemińska et al., 2020; Lee et al., 2021; Liou et al., 2020). Indeed, different defining characteristics or related factors could be present in different patient population (e.g., the defining characteristic *inconsistent monitoring of ankles for swelling* could be inappropriate for people affected by diabetes).

From a diagnostic point of view this aspect could represent an area of development for other self-care nursing diagnoses related to different medical conditions. A nursing diagnosis aims to intercept an ineffective self-care behavior and judge the existence of a potential for enhancing a patient's independence in self-care to establish feasible goals for advanced nursing practice (Chiffi & Zanotti, 2015).

We think the proposed new nursing diagnosis can make an important contribution to diagnostic reasoning and effective interventions planning for these patients. In particular, this diagnosis would be especially useful to guide clinical reasoning for nurses inexperienced in HF care. Clinical reasoning can be described as the process by which nurses make clinical judgments by selecting from alternatives, weighing evidence, using intuition and pattern recognition (Tanner, 2006). Since HF patients are very complex, international organizations recommend that they be cared by healthcare professionals specialized in HF care (e.g., certified HF nurses) (Riley et al., 2016; Trupp et al., 2016). Despite these recommendations, in many countries, HF patients are mainly cared for by general nurses (Seferovic et al., 2013) who may not be familiar with the importance of correctly and promptly identifying possible HF self-care deficit.

The development of adequate clinical reasoning skills to ascertain the adequacy of self-care in an HF patient requires a long time and specific experience across multiple patient/family encounters (Herdman & Kamitsuru, 2017). To identify a HF self-care deficit may be especially critical for novice nurses or for nurses experienced in other fields who have recently started dealing with HF. By providing focused, evidence-based defining characteristics and describing critical risk factors, this nursing diagnosis can thus support also general nurses to improve their professional action toward HF patients.

CONCLUSIONS

The new diagnosis allows nursing professionals to chart patients' self-care in daily clinical practice through a standard nursing terminology, by naming this health problem, describing its etiology and populations at risk, and by documenting its clinical manifestations. These are important elements that can provide educators, students, and practitioners with theoretical support to diagnose accurately and select the most appropriate interventions to achieve better outcomes.

The next step will be to define nursing outcomes and interventions related to the diagnosis. Accuracy analysis and clinical validation of defined clinical indicators in different healthcare settings should be performed to complete the diagnosis validation process.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Authors GS, EV, BR, and FD made substantial contributions to conception and design, acquisition of data, analysis, and interpretation of data; GS, EV, CTL, BR, FD were involved in drafting the manuscript or revising it critically for important intellectual content; All authors gave final approval of the version to be published. Each author participated sufficiently in the work to take public responsibility for appropriate portions of the content; all authors agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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