Original Article

Validity of nursing diagnoses/outcomes and interventions for people with heart failure

Validação de diagnósticos/resultados e intervenções de enfermagem à pessoa com insuficiência cardíaca

Validación de diagnósticos/resultados e intervenciones de enfermería de personas con insuficiencia cardíaca

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Abstract

Objective: To validate the content of nursing diagnosis/outcome and intervention statements for the care of people with heart failure.

Method: This is methodological study, according to the steps for building terminology subsets in Brazil. Survey conducted from 2019-2020. Statements and interventions were organized according to the mid-range theory for nursing in cardiovascular rehabilitation.

Results: a total of 58 experts participated in the study. A total of 39 nursing diagnoses/outcomes and 168 interventions were validated. The statements with the highest agreement were related to rehabilitation care followed by the supervised cardiovascular rehabilitation program.

Conclusion: The study validated the content of statements of a terminology subset for people with heart failure, and allowed the composition of a nursing language based on a classification system recognized worldwide.

Resumo

Objetivo: Validar o conteúdo dos enunciados de diagnósticos/resultados e intervenções de enfermagem para o cuidado à pessoa com insuficiência cardíaca.

Método: Estudo metodológico, de acordo com os passos para construção de Subconjuntos Terminológicos no Brasil. Pesquisa realizada de 2019-2020. Os enunciados e intervenções foram organizados conforme a teoria de médio alcance para enfermagem em reabilitação cardiovascular.

Resultados: Participaram do estudo 58 especialistas. Foram validados 39 diagnósticos/resultados e 168 intervenções. Os enunciados com maior concordância estiveram relacionados ao cuidado reabilitador seguido do programa de reabilitação cardiovascular supervisionado.

Conclusão: O estudo validou o conteúdo dos enunciados de um subconjunto terminológico para pessoas com insuficiência cardíaca e permitiu a composição de uma linguagem própria da enfermagem com base em um sistema de classificação reconhecido mundialmente.

Resumen

Objetivo: Validar el contenido de los enunciados de diagnósticos/resultados e intervenciones de enfermería para el cuidado de personas con insuficiencia cardíaca.

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Conflict of interest: nothing to declare.

Método: Estudio metodológico, de acuerdo con los pasos para la elaboración de subconjuntos terminológicos en Brasil. Investigación realizada de 2019 a 2020. Los enunciados e intervenciones fueron organizados según la teoría de rango medio en enfermería para rehabilitación cardiovascular.

Resultados: Participaron en el estudio 58 especialistas. Se validaron 39 diagnósticos/resultados y 168 intervenciones. Los enunciados con mayor concordancia se relacionaron con el cuidado rehabilitador, seguido por el programa de rehabilitación cardiovascular supervisado.

Conclusión: El estudio validó el contenido de los enunciados de un subconjunto terminológico para personas con insuficiencia cardíaca y permitió la elaboración de un lenguaje propio de enfermería basado en un sistema de clasificación reconocido mundialmente.

Introduction

Heart failure (HF) is a clinical syndrome at the systemic level, with cardiac dysfunction due to inadequate tissue blood supply, which may present systolic or diastolic dysfunction, which can cause pulmonary or systemic congestion.[1] It has a current prevalence greater than 64 million cases worldwide and an estimated economic burden of US$346.17 billion.[2] In Brazil, the mortality rate is 75.5 per 100,000 inhabitants, especially in those over 50 years of age, making it one of the main causes of hospitalization in the country.[3]

A person with HF needs systematic care, highlighting the Nursing Process (NP) method, which allows clinical reasoning and critical judgment to develop a therapeutic plan directed to each person's real needs, given the chronicity of the condition and need of ongoing care.[4]

The relevance of this article lies in the perspective of give continuity and, at the same time, expand another one,[5,6] which built the first terminology subset of the Brazilian Center for the International Classification for Nursing Practice (ICNP®), with nursing diagnosis/outcome and intervention statements - at the time ICNP® Catalog - for people with chronic HF, using ICNP® version 1.0 as a basis, organized through the referred clinical condition's pathophysiological model, which was not validated and without the propagation of a middle-range theory (MRT) and inductively classified by relevant clinical data, requiring, therefore, its refinement for application to practice and consolidation of knowledge.

With regard to cardiological nursing, the Nursing MRT for Cardiovascular Rehabilitation (Nur-MRT CVR) proposes to support the care process implemented for people after a cardiovascular event, who need to be encouraged to assume positive coping mechanisms for this process, demanding and promoting changes in health behaviors and care management by person and family, with nurses' and nursing's contributions so that they reach the goal of adapting to the new condition of life, comprehensively, with a view to their biopsychosocial rehabilitation, making them able to maintain everyday activities.[7]

Still, the literature recommends conducting content validity studies of these nursing diagnoses (ND), outcomes (NO) and/or interventions (NI), which focus on nurses in their daily practice in different services and for the most varied priorities of health,[8] as in the case of HF.

Therefore, an important shortcoming is the use of specialized terminologies in HF care focused on education/rehabilitation with interventions that are sensitive to the production of clinical indicators and that integrate software for NP in a cardiology service. By proposing to validate diagnoses/outcomes and interventions, it becomes feasible to implement this subset subsidized to an MRT. Therefore, the present study aims to validate the content of ND/NO and NI statements for the care of people with HF.

Methods

This is a methodological study based on the checklist SQUIRE 2.0 adaptation,[9] referring to a master's thesis from the Graduate Program in Nursing at the *Universidade Regional do Cariri* (2019-2020). The step adopted for the construction of terminology subsets in Brazil was validity of constructed statements.[10,11] The other steps prior to this one was published in national journals in the field.[12,13] In the present study, the contents of previously constructed statements were validated.

The study population consisted of Brazilian nurses who met the selection criteria, reaching a minimum total of four points.[14] The sample size of experts was defined using a statistical formula, in which the confidence level was 95%; the expected proportion of experts was 90%; and the difference in the acceptable proportion in relation to what would be expected was 10%.[15] Thus, the minimum number of 35 experts was determined.

To select the experts, the presentation of at least four points was considered based on the sum of the criteria:[14] Being a nurse (02 points); having a graduate degree in nursing or related areas (02 points for each); being an author, co-author or supervisor of studies on HF, its components and/or Nursing Classification Systems, in particular, ICNP® (02 points); having professional work/residency in health, with a minimum duration of two years, with nursing consultations for people with HF (03 points). This last criterion is related to the need for nurses' empirical knowledge in clinical practice, in a minimum amount of time to monitor service users.

Experts were identified through a search in bibliographical publications involving the subject in the search site itself and in the *Plataforma Lattes* of the Brazilian National Council for Scientific and Technological Development (CNPq - *Conselho Nacional de Desenvolvimento Científico e Tecnológico*) through the search by subject using keywords "Cardiovascular Nursing" and "heart failure" "ICNP". The electronic addresses were collected from scientific publications and those made available in the curriculum. Thus, 148 experts were invited to participate through formal contact, initially being sent an invitation letter, the research objectives and information regarding the time to return the response.

To carry out content analysis, an electronic questionnaire was created using Google Forms®, used in other validity studies of ICNP® terminology subsets.[14,16] The electronic questionnaire was constructed with the Informed Consent Form (ICF), containing: explanatory text about the study, its risks and benefits; participant characterization regarding personal (sex, age, federative unit of residence, maximum title, area and time of professional activity) and thematic variables (development of studies or participation in research groups involving HF/cardiovascular rehabilitation, ND/NO and NI and the ICNP®); and the content of ND/NO and NI statements to be assessed. This was sent to the e-mail of selected experts weekly, with the aim of greater feedback and participation.

Operational definitions were also built and included in the form from ND statements and tabulated in Excel for Windows®, and the statements and interventions were organized according to Nur-MRT CVR's concepts.

To assess the relevance of ND/NO and NI statements and operational definitions, the form was organized according to Nur-MRT CVR's concepts (Rehabilitation Care, Educational Process, Psychosocial Support For Patient And Family, Supervised Cardiovascular Rehabilitation Program And Therapy Based On Exercise).[7]

Rehabilitating care is determined after a cardiovascular event. It permeates the implementation of theory based on exercise, psychosocial support and an educational process for self-care. The educational process is the way to provide health education to people with cardiovascular disease. Psychosocial support is related to patient-family care aimed at psychosocial care. The program is a specialized, multidisciplinary service that assists patients after the event, and the therapy is supervised by a trained professional.[7]

Experts' assessment was expressed with "AGREE" or "DO NOT AGREE" with each statement presented, making it possible to score suggestions and/or changes at the end of each statement in a non-mandatory way. When considering the suggestions presented by experts, relevant aspects were added, extracted or revised according to relevance, being described in the body of results.

For data analysis regarding ND/NO and NI statements, the percentage of agreement was used, a method to calculate the pertinence of the phenomenon among experts, being the simplest measure of agreement.[17] Due to its limitations, the use of this method is recommended, considering the acceptable agreement rate of 90% among experts.[17]

The period for carrying out the content validity took place from August to October in 2019. At the

end of this process, a compilation of valid ND/NO and NI statements was carried out, organized in tables, according to the absolute (F) and relative (%) frequency of each variable of interest.

The study was approved by the Research Ethics Committee of the *Universidade Regional do Cariri* (URCA) (CAAE (*Certificado de Apresentação para Apreciação Ética* - Certificate of Presentation for Ethical Consideration) 95228818.9.0000.5055/ Opinion 2.906.881).

Results

Content validity involved 58 experts aged between 24 and 33 years (63.8%), and mean age of 34.1 years (SD ± 9.8). Experts from 12 states participated, especially from the Northeast, 47 (81%), such as and Ceará, 38 (65.5%), and 41 (70.7%) are professors. As for length of experience, it ranged from 2 to 35 years, with an average of 9.9 (SD ± 9.9), with 7 (11.8%) having two years of experience and a master's degree 21 (36.2%). As for production in the area, 39 presentations (67.2%), 28 articles (48.3%), 20 dissertations (34.5%) and 9 theses on cardiovascular health (15.5%) were presented. With regard to ICNP® use in their professional activities (care, teaching or as service or curricular internship supervisor), 26 (44.8%) answered that they use it or have already used it. As for the content of this subset submitted to the validity process, Table 1 stands out, referring to ND/NO and NI statements and the percentage of agreement obtained, based on their percentage.

Of the total of 42 ND/NO statements submitted to the validity process, 39 were validated (92.9%); 34 addressed real needs; and five related to potential ones, respectively, with seven statements validated with absolute agreement (100%). Of these, four are considered real needs and two potential needs. It is emphasized that the present statements belong to all five concepts used in the organization of statements.

The three ND/NO statements that obtained low agreement for validity were classified within the Rehabilitating Care concepts, such as "Pain (Specify Type)", "Decreased Body Mass Index" and "Deficient Food Intake".

Of the total of 179 NI statements submitted to the validity process, 168 (94%) obtained 90% or more agreement and, of these, 43 with absolute agreement (100%). Thus, of the 11 statements that obtained low agreement, seven were classified in the Rehabilitating Care concept, two in the Psychosocial Support to Patient and Family concept, and two in the Supervised Cardiovascular Rehabilitation Program concept.

Of the validated NI statements, 56 were deleted and/or were joined to other statements for being considered repetitive/similar, totaling 112 NI statements at the end. Thus, the deleted validated NI statements were characterized by 25 in the Rehabilitating Care concept, 12 in the Educational Process concept, seven in the Psychosocial Support to Patient and Family concept, nine in the Supervised Cardiovascular Rehabilitation Program concept and three in the Therapy Based On Exercise concept.

Experts' recommendation not to use two different verbs or aspects in the same intervention was accepted. Thus, "Check nasogastric catheter residues and irrigate nasogastric catheter according to routine during continuous feeding and before intermittent feeding" and "Evaluate cough, nausea and ability to swallow" were divided into "Check nasogastric catheter residues", "Irrigate nasogastric catheter according to routine during Continuous Feeding and Before Intermittent Feeding". "Evaluate nausea" and "Evaluate cough (sputum, secretion, color, frequency, intensity, murmurs and noise)" were deployed in new interventions.

Interventions in the Rehabilitative Care concept "Assess oral cavity condition" and "Evaluate oral problems that impair feeding and chewing (prosthesis, injury)" were integrated into "Evaluate oral cavity condition (prosthesis, injury, teeth, pain)". In the Educational Process concept, "Strengthen communication about the disease and treatment" and "Inform side effects of medication" were integrated into "Guide person/family/caregiver about the disease, therapeutic regime and side effect of

Table 1. Validity of nursing diagnosis/outcome and intervention statements for heart failure

Rehabilitative care	
ND/NO* statement	**(%) §**
Dyspnoea (Specify Type)	100
Oedema (Specify Degree)	100
Cough	100
Risk For Cardiogenic Shock	100
Decreased Cardiac Output	98.3
Nausea	98.3
Ineffective Peripheral Tissue Perfusion	98.3
Ineffective Tissue Perfusion	98.3
Risk For Deep Vein Thrombosis	98.3
Increased Liquid Volume	96.6
Risk For Infection	96.6
Pressure Injury (Specify Stage)	93.1
Risk For Aspiration	91.4
NI statement †	**(%)**
Evaluate fiber food intake	100
Evaluate the presence of flatus	100
Monitor fluid balance (or water balance) as per routine	100
Prevent injury during transfer technique	100
Evaluate intestinal eliminations (feces frequency, quantity, aspects)	100
Assess upper and lower limbs (temperature, color, pulse rate, ankle-arm index)	100
Evaluate past pain experiences, including individual and family history of chronic pain or resulting disability	100
Monitor urinary output (frequency, quantity, color, pain and foul odor)	100
Prevent accidental extubation (fix artificial airway)	100
Assess discomfort (type, location, intensity, triggering factors)	98.4
Suction airway, as appropriate	98.3
Auscultate breathing noises before and after Aspiration, as per routine	98.3
Assess person's level of consciousness	98.3
Evaluate the function and integrity of the urinary catheter	98.3
Assess response to fluid (or hydration) therapy	98.3
Determine degree of jugular vein distention, as appropriate	98.3
Investigate person's food preferences	98.3
Lateralize person's head, according to the risk for aspiration of vomit	98.3
Keep via area unobstructed	98.3
Monitor mobility in bed	98.3
Monitor electrolyte balance as per routine	98.3
Position person in bed with the headboard elevated (30º, 45º or 60º), as appropriate	98.3
Provide change of position, according to person's routine and hemodynamic state	98.3
Record sleep pattern in hours	98.3
change dressing	98.3
Auscultate heart rhythm, paying attention to the presence of the 3rd heart sound	98.3
Assess nausea	98.3
Assess vital signs (heart rate, respiratory rate, blood pressure, pulse rate, temperature, and pain)	98.3
Assess skin (color, temperature, pain, swelling, perfusion, tenderness, moisture, texture, and signs of infection)	98.3
Assess signs of dehydration (decreased skin turgor, dry mucosa)	98.3
Monitor blood oxygen saturation using pulse oximetry as per routine	98.3
Supervise the insertion site of invasive devices (temperature, color, pain, secretion)	98.3
Administer oxygen therapy, as appropriate	96.6
Administer nutritional supplement, as appropriate	96.6
Auscultate bowel sounds as per routine	96.6
Identify cause of impaired sleep	96.6
Restrict/offer fluids, as appropriate	96.6
Check body temperature of lower limbs	96.6
Assess central venous pressure or right atrial pressure, as appropriate	96.6
Assess oral cavity condition (prosthesis, injury, teeth, pain)	96.6
Evaluate the type of dyspnea (nocturnal, intermittent, lying down, resting, others)	96.6
Assess nutritional status	94.8
Evaluate pain with scales (verbal, facies, visual, numeric) about the place, beginning, duration, intensity, triggering/relieving factors	94.8
Catheterize urinary bladder, if necessary	94.8

Continue...

Continuation.

NI statement †	(%)
Install non-invasive artificial airway	94.8
Evaluate cough (sputum, secretion, color, frequency, intensity, murmurs and noises)	93.3
Evaluate shift of pain/discomfort to other locations	93.1
Assess weight as per routine	93.1
Evaluate person's acid-base balance through arterial blood gases	93.1
Monitor person's response to sedation	93.1
Offer oral or parenteral liquid, as appropriate	93.1
Identify signs of pulmonary congestion (breathing rate, heart rate, peripheral oxygen saturation, expectoration, murmurs, noises, others)	93.1
Irrigate nasogastric catheter during continuous feeding and before intermittent feeding, as per routine	93.1
Check nasogastric catheter residues (volume, color)	93.1
Evaluate the lesion (degree, cause, dimensions, location, color, secretion, fetid odor, pain, temperature)	91.4
Educational Process	
ND/NO statement	**(%)**
Impaired Self Care	96.6
Conflicting Attitude Toward Medication Management	93.1
NI statement	**(%)**
Guide the family/caregiver on the importance of encouraging person's self-care	100
Explain to person/family/caregiver the causes of fatigue	100
Encourage person's autonomy in self-care, according to the degree of capacity	98.3
Guide the family member/caregiver about post-discharge care in disease management	98.3
Advise on procedures and sensations that person may experience	98.3
Facilitate communication with person about conflicts in medication management	96.6
Psychosocial Support For Patient And Family	
ND/NO statement	**(%)**
Hopelessness	100
Spiritual Distress	98.3
Anxiety	98.3
Impaired Ability Of Caregiver To Perform Caretaking	98.3
Conflicted Spiritual Belief	96.6
Fear	96.6
Situational Low Self Esteem	94.8
Unfavorable Religious Coping	94.8
Lack Of Family Support	94.8
NI statement	**(%)**
Help person identify situations that trigger anxiety	100
Help person identify situations that cause hopelessness	100
Help person identify situations that provoke fear	100
Identify barriers to effective communication with person	100
Identify person's spiritual beliefs	100
Identify factors that cause low self-esteem	100
Encourage the family/caregiver to participate in the care plan	100
Encourage effective family communication	100
Guide person about techniques to reduce anxiety (relaxation, rest, reading, music therapy, others)	100
Provide activities that increase person's self-esteem (hygiene, reading, music therapy, others)	100
Provide a suitable environment for meals	98.3
Offer an adapted and obstacle-free environment	98.3
Assess person's anxiety level (using scales)	98.3
Observe feelings of sadness, irritability, fear, anxiety and loneliness, seeking to offer support in communication	98.3
Provide adequate environment for person (comfortable bed, noise and odor control, lighting and temperature)	98.3
Provide alternative techniques for relieving anxiety (image building, relaxation, others)	98.3
Provide techniques to perform spirituality (reading, music therapy, others)	98.3
Provide visits by religious entities with the person's consent	98.3
Support person in accepting their health condition	96.6
Facilitate communication with person about needs related to self-esteem	96.6
Facilitate communication with person about needs related to spiritual demands	96.6
Facilitate communication with person about needs related to care management	96.6
Facilitate communication with person/family/caregiver about feelings related to hospitalization	96.6
Provide privacy for spiritual/religious behavior	96.6
Respect person's spiritual/religious beliefs	96.6
Provide distraction technique (dialogue, reading, music therapy)	91.4

Continue...

Continuation.

Supervised Cardiovascular Rehabilitation Program	
ND/NO statement	**(%)**
Impaired Skin Integrity	100
Risk For Impaired Skin Integrity	100
Decreased Bowel Motility	96.6
Risk For Pressure Injury	94.8
Impaired Sleep And Rest‡	94.8
Impaired Mobility In Bed	94.8
Increased Body Weight	94.8
Increased Nocturnal Urinary Frequency	94.8
Decreased Bladder Volume	94.8
Discomfort (Specify Location)	93.1
Altered Blood Pressure	93.1
Decreased Risk For Bowel Motility	93.1
NI statement	**(%)**
Help a person to eat	100
Assist person in finding a comfortable body position	100
Help person to get dressed in bed	100
Evaluate the need for assistance in self-care	100
Determine person's degree of dependency	100
Keep person's skin clean, dry and moisturized	100
Identify factors that trigger dyspnea	100
Monitor person's degree of ability to perform self-care	100
Protect regions over bony prominences with cushions allowing adequate tissue perfusion	100
Assist person to bathe in bed/toilet	98.3
Help person to better position themselves to eat in bed	98.3
Stimulate person's autonomy in self-care, according to the degree of capacity	98.3
Offer help until person is able to perform autonomous self-care	98.3
Use a special mattress (pneumatic, pyramidal, foam, other)	98.3
Maintain a sodium-restricted diet	96.6
Assist person in oral hygiene, according to routine	94.8
Provide intimate hygiene	94.8
Apply elastic stockings for compression therapy, as appropriate	94.8
Therapy Based On Exercise	
ND/NO statement	**(%)**
Fatigue	100
Activity Intolerance ‡	96.6
Impaired Physical Mobility	94.8
NI statement	**(%)**
Assist person to stand and walk	100
Assist person to sit up in bed for postural management	100
Identify factors that cause fatigue	100
Guide on light to moderate exercise after discharge, as appropriate	100
Provide passive exercise therapy (range movements, standing) if indicated	100
Monitor activity tolerance	98.3
Provide active exercise therapy (ambulation) if indicated	96.6

*ND/NO - nursing diagnosis/outcome statements; †NI - nursing interventions; ‡statement with suggestion of title change by experts; §% - relative frequency of expert agreement.

medication". In the Psychosocial Support to Patient and Family concept, "Provide privacy for spiritual behavior" and "Provide privacy for religious behavior" were integrated into "Provide privacy for spiritual/religious behavior". "Respect person's religious beliefs" and "Respect person's spiritual beliefs" were integrated into "Respect person's spiritual/religious beliefs". In the Supervised Cardiovascular Rehabilitation Program concept, "Keep skin clean and dry" and "Keep skin hydrated" were integrated into "Keep skin clean, dry and hydrated".

Interventions of the Rehabilitative Care concept such as "Wash hands before and after each care for person", "Use antimicrobial soap for hand hygiene, as appropriate", "Rotation of the puncture site" and "Use aseptic techniques in procedures" were considered by the experts as good nursing practices, being suppressed from the in-

tervention statements, which should be intrinsic to nursing care.

Discussion

This research revealed the occurrence of 39 valid diagnoses/outcomes for the care of people with HF. This number is similar to previous studies that validated ICNP® terminology subsets, such as a study that elaborated and validated 28 diagnoses and 211 interventions for the care of alcoholics.[18] Another study carried out content validity of 50 ND/NO and 350 NI for breastfeeding care.[19]

There is also research that validated 52 diagnostic statements for people with metabolic syndrome[20] as well as a study that validated 56 ND, 99 NO and 411 NI for people with vasculogenic ulcers,[21] and research that brings the elaboration of 74 ND/NO and 213 NI for the application of NP during breastfeeding.[22]

With regard to HF, research developed in 2013 with the objective of constructing ND and NI statements for patients with functional class III of the New York Heart Association (NYHA) scale, constructed 66 diagnoses and 234 interventions. However, the elaboration was not based on a theoretical model and there was no validity process, and the authors affirm the need for a content validity process by expert nurses in the area.[6]

Furthermore, the fact that these statements were developed based on ICNP's current version, based on its seven axes, stands out. Carrying out the study on screen allows the debate on the care needs of people with HF, in addition to promoting the advancement of scientific knowledge through the clarification of ND/NO, and NI.

Validity depends on the clarity in which the clinical situation of patients with vascular/cardiac complications is expressed, this is related to the applicability of that activity in individuals and the clinical repercussions of their health problem.[16,21]

Moreover, using a mid-range theory of nursing integrated to diagnoses/outcomes allows the standardization of language, expansion of knowledge and the possibility of generating health indicators. Thus, the current study's relevance stands out.

With regard to the terminology subset's clinical applicability, nurses perform nursing assessment. Thus, it identifies the needs of people with HF. The information arising from the evaluation will provide subsidies for clinical judgment and critical reasoning with subsequent decision-making for the planning and implementation of care that should modify the clinical picture and present satisfactory results. Therefore, the use of terminology subsets helps in the accurate perception and effectiveness of nursing actions.

The findings made it possible to list real and/or potential needs related to the care of people with HF, highlighting the concepts of Rehabilitating Care and Psychosocial Support for Patients and Family. Rehabilitative care is related to the occurrence of a cardiovascular event due to some clinical pathology, in turn, it is based on exercise therapy, psychosocial support for patient and family.[23]

People with HF demand care related to disease control for the prevention of damage and injuries and the rehabilitation of the person being cared for, knowing that such a systemic pathology directly impacts quality of life.[24] Regarding nursing care, care for patients with cardiovascular complications permeates the need for safe environments, preservation of quality of life and carrying out activities of daily living.[16]

Cough was also a statement with a high level of agreement among the experts in this study. Belonging to the focus axis, it is configured as a non-specific manifestation often found in these clients. It is estimated that 20.9% of adults affected by the disease have a cough.[25] Identifying the abnormal cough reflex in patients with HF allows for early action against cardiac phenomena that lead to arrhythmias, thereby improving clinical prognosis expectations in the rehabilitation process.[26]

Statements related to dyspnea and fatigue were also observed in this study with a high level of agreement. For people with HF as well as other cardiovascular diseases, the supply of oxygen is essential in order to avoid dyspnea and fatigue of accessory muscles.[27]

"Oedema (Specify Degree)" can also be observed as a statement strongly associated with HF, which is characterized as one of the most characteristic signs of the condition, however, becoming less specific than shortness of breath and orthopnea, for instance, with angioedema being an important complication due to angiotensin-converting enzyme overlap.[1]

"Risk For Cardiogenic Shock" presents important characteristics in the clinical course of HF, being addressed in this study. Shock in HF is already a term explored in the literature;[12] however, it is associated with failure of cardiac pump due to obstruction or malfunction, overloading the heart and generating significant impacts on patients' life that can lead to death.[24] Avoiding complications associated with the disease and promoting rehabilitative care is essential in both intra- and extra-hospital environments.

The largest number of diagnoses/outcomes with an agreement level greater than 0.90 are in rehabilitation care, including being the area of nursing theory used with the most linked statements. Rehabilitative care concerns the recovery of possible losses that patients had during a cardiac event; this concept is supported by psychosocial assumptions, rehabilitation programs, educational process and care management.[7]

Interventions classified with maximum agreement in the assessment of the study's experts were related to rehabilitation care (fiber intake, aspiration, tissue perfusion, presence of flatus, fluid balance, monitoring eliminations, evaluating limbs, pain and extubation) and educational (family guidance, therapeutic regime, illness and fatigue). These were also found in other studies.[16,18,19,21,28,29]

Some statements had low agreement for validity and were linked to general characteristics presented in various pathologies. Thus, pain can be observed in different clinical situations and is not a factor closely linked to failure, not determining a pathognomonic sign.[1]

On the other hand, pain represents a characteristic sign of cardiac patients. In acute myocardial infarction, it is an important identification sign, being essential in ICNP® terminology subsets, such as radiating pain and chest pain.[16] Likewise, in other vascular pathologies there are subsets with ischemic pain[21] and acute pain.[28]

Another diagnosis/outcome with significant expressiveness was "Hopelessness", reported as a deficiency in self-care that permeates the interpersonal relationships of human beings and how they develop their activities in society, with characteristics related to the scope of psychoeducation.[30] This diagnosis is found in the care and psychosocial support to the patient and family. The NI related to this care validated by the experts was social support (preventing psychological and communication problems). Similar studies also had this intervention prevalent in the care relationship with patients.[18,29]

Prominent statements with absolute agreement such as "Impaired Skin Integrity" and "Risk For Impaired Skin Integrity" cover important physiological, behavioral and safety aspects of individuals and are related to the supervised cardiovascular rehabilitation program. Integrity is considered the relationship between electrolyte control, acid-base ratio, drug control, skin/wounds, operative procedures, tissue perfusion, exercise, immobility, nutritional support, education and risk classification, and assessment of vital signs.[8] In rehabilitation care for HF, skin treatment can serve as a prognostic indicator in association with mortality.[31]

Interventions related to cardiovascular rehabilitation/exercise therapy were (return to activities of daily living such as eating, dressing, cleaning and staying hydrated). These interventions were also found in other ICNP® terminology subsets.[16,18,19,21,28,29]

Interventions related to good practices in health and nursing do not need to be explained in areas of expertise, and should be intrinsic to any and all care. Therefore, in addition to interventions for nursing practice, strategies that address patient safety should always be implemented by expanding the role of nurses within a multidisciplinary team, using a checklist and updating/improving standardized nursing languages.[8,32]

As limitations, the incipience of the number of diagnostic statements/outcomes related to exercise-based therapy and the educational process is

observed, this is due to the possibility of publications involving only clinical care without the perception of individuals' holistic needs. In this sense, nurses must pay attention to educational issues and the practice of rehabilitation, which still constitute gaps in scientific knowledge in HF.[33]

Conclusion

The present study made it possible to validate the content of 39 ND/NO and 168 NI for the care of people with HF in order to verify the adequacy of statements to the target audience while improving accuracy and reliability. Also, it contemplated the contribution to the composition of a nursing language based on a worldwide recognized classification system that can subsidize care, corroborating the fact that most nursing phenomena are covered in the national and international literature, but not in the form of ND/NO and NI for people with HF. In this way, validating ND/NO and NI content for the care of people with HF will contribute to the implementation of assistance based on scientific evidence and will strengthen nursing as a science as well as providing greater security, assertiveness and autonomy to professional nursing care. The study opens precedents for new research that guide the nursing phenomena presented together with the middle range theory of cardiovascular care with a view to strengthening and elucidating nursing care to the public under study.

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Collaborations

Nascimento MNR, Félix NDC, Cruz Neto J, Araújo MM, Rebouças CBA and Oliveira CJ declare that they contributed to the project design, data interpretation, relevant critical review of intellectual content and approval of the final version to be published.

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