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Content analysis of nursing diagnoses related to urinary incontinence*

Análise de conteúdo dos diagnósticos de enfermagem relacionados à incontinência urinária

Análisis de contenido de los diagnósticos de enfermería relacionados con la incontinencia urinaria

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ABSTRACT

Objective: To analyze the content of nursing diagnoses related to urinary incontinence according to NANDA International and others identified in the literature. **Method:** Methodological study conducted with judges who were experts in urinary dysfunctions and nursing diagnosis. The analysis included diagnoses of Stress Urinary Incontinence, Urgency Urinary Incontinence, Functional Urinary Incontinence, Urinary Incontinence due to Neurogenic Detrusor Overactivity (previously denominated Reflex Urinary Incontinence in NANDA International's taxonomy), Mixed Urinary Incontinence, and Transient Urinary Incontinence. Wilcoxon test was applied and Content Validity Index ≥ 0.85 was considered appropriate. **Results:** Fifty-one judges participated in this study. The judges recommended modifications in elements of all diagnoses (inclusion, exclusion or change of previous element type). **Conclusion:** The four diagnoses analyzed in NANDA International's taxonomy are recommended to be maintained with modifications; inclusion of nursing diagnoses Mixed and Transient Urinary Incontinence is also recommended.

DESCRIPTORS

Urinary Incontinence; Nursing Diagnosis; Classification; Terminology; Validation Studies.

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INTRODUCTION

Urinary Incontinence (UI) is a high-prevalence condition. According to the study European Prospective Investigation into Cancer and Nutrition (EPIC), around 420 million people worldwide were estimated to have UI in 2018, out of which 24 million were in Latin America[1].

There are different types of UI which may bring negative outcomes for the quality of life of individuals and their families. UI is still considered to be underreported due to difficulties concerning spontaneous reporting of this problem and assistance-seeking. Due identification of this condition enables choosing more appropriate interventions, as well as achieving more efficient results, supporting measures for its prevention and public policy implementation.

Diagnosis validation studies are recommended, since they offer resources for a better comprehension of the studied phenomenon and its domain[2]. Nonetheless, many of these studies account for just some elements of the diagnosis, frequently their defining features, which leaves gaps in the comprehension of the diagnosis in its entirety. The importance of this kind of study lies in its potential to enable diagnoses to be incorporated into and/or removed from the taxonomies used in nursing to assist nurses' decision-making in their care practice.

In NANDA International's (NANDA-I) Nursing Diagnosis (ND) taxonomy version 2018-2020, other than defining characteristics and related factors, two other elements were introduced: diagnosis associated conditions (medical diagnosis, lesions, procedures and medical devices or pharmaceutical agents not independently modifiable by the nurse) and at risk population (groups of people with some vulnerability to a certain human response)[3]. Nursing diagnoses related to UI in NANDA-I's taxonomy are included in Domain 3 – Elimination/Exchange, Class 1-Urinary Function.

This research's objective was to analyze the content of nursing diagnoses related to NANDA-I's UI and other two identified in a literature review conducted in a previous study[4].

METHOD

Study type

This is a methodological study employing content analysis to six nursing diagnoses regarding urinary elimination. Content analysis of four UI-related diagnoses based on NANDA-I version 2018-2020 were performed: Stress UI, Urgency UI, Functional UI and UI due to Neurogenic Detrusor Overactivity (denominated Reflex UI in NANDA-I's taxonomy), and UI due to Neurogenic Detrusor Overactivity (denominated Reflex UI in NANDA-I's taxonomy). Mixed and Transient UI were included in the analysis; those were identified by an integrative review conducted in a previous study[4].

Population

The population comprised nurses with clinical expertise in the theme of the study who were experts in the nursing diagnosis area, with publications on urinary dysfunctions.

For subject selection, different strategies were employed: active search for professionals who were experts in urinary dysfunction in *Plataforma Lattes* (academic CV platform), by the National Council for Scientific and Technological Development (CNPq – *Conselho Nacional do Desenvolvimento Científico e Tecnológico*); invitation to UI experts participating in a scientific event about this theme; invitation to employees of a rehabilitation center which provides services to people with urinary dysfunctions; and indication or recommendation of experts by research participants.

Participants must hold a *stricto-sensu* postgraduate degree with at least a master's title or specialization in this area with a minimum experience of five years.

Data collection

The experts were informed about the research and invited to participate by email. This email contained a link to the research form and an attached document containing conceptual and operational definitions of the elements to be validated. This was a support material for consultation in case the judge needed further explanation of a term. The data collection period lasted 60 days (December/2018 to January/2019).

Data treatment and analysis

The judges' expertise classification was established after Benner's proposal[5], which comprises five levels: novice, advanced beginner, competent, proficient and expert. Expertise level was measured by the simple mean of score obtained in the following criteria: time of practice, time in research group and scientific knowledge. Scientific knowledge corresponded to the sum of the judges' titles, thesis/dissertation, and scientific production on nursing diagnoses and/or UI.

A two-part data-collection instrument was assembled through a tool in Google Forms. The first part encompassed identification data and professional experience, whereas the second covered data regarding an analysis of the six studied nursing diagnoses, including all its elements (title, definition, defining characteristics, related factors, associated conditions, and at risk population). The elements of nursing diagnoses Mixed UI and Transient UI were identified by a literature review conducted in a previous study[4] and classified for each group (defining characteristics, related factors, associated conditions and at risk population) by the researchers, based on the literature and their clinical and research experience in this area. Each judge was requested to define whether the proposed element was representative of the diagnosis at issue and what was its relevance to the diagnosis on a one to five scale; score one represented an irrelevant category, whereas five indicated it was very relevant for that diagnosis. These values were reparametrized to a scale from zero to one as follows: the original

value 1 was reparametrized to 0; value 2, to 0.25; value 3, to 0.5; value 4, to 0.75 and value 5, to 1. Content Validity Index (CVI) was established by the median of these values weighted by each evaluator's expertise level.

During element analysis for each diagnosis, values attributed by judges were first submitted to verification of whether they adhered to normal distribution using the Shapiro-Wilk (W) test. If none of these values adhered to normal distribution, median weighted by expertise level would be employed, as well as its confidence interval, to represent CVI. Also, Wilcoxon test would be applied to the null hypothesis whether the evaluation's weighted median was equal or higher than 0.85. P-values below 0.05 would indicate rejection of the null hypothesis, in which case the element should be excluded.

Ethical aspects

The research was approved by the Ethics Committees of Universidade Estadual de Campinas and the Rehabilitation Center from which part of the sample was recruited in Opinions n. 2.903.352 and 3.103.968, both in 2018, in agreement with Resolution 466/2012, by the National Health Council, for research involving human beings. The Informed Consent Form was attached to the study form sent by email.

RESULTS

Out of the seventy-one invited nurses, 72% (51) participated in this study. Mean participant age was 42.9 years-old (SD 8.9), mean time of education was 16.91 years (SD 8.7) and mean time of activity in research groups in the area was 4.9 years (SD 3.55). Around 59% of judges were masters and 34% were doctors. Also, 92% had professional experience with nursing diagnoses and 90% worked in the UI area; 42% had didactic experience with nursing diagnoses, 34% had experience with research in the nursing diagnoses area and UI and 20% had care experience in the nursing diagnoses area and UI. Most judges (73%) were advanced beginner[5] and 15% were proficient in the study object.

Shapiro-Wilk test showed that the values attributed by the judges do not follow normal distribution. Therefore, median weighted by expertise level and confidence interval were employed for representing CVI (Tables 1 to 5).

Most nursing diagnoses elements were considered relevant by the judges; those presenting relevance below 90% were noteworthy: UI due to Neurogenic Detrusor Overactivity - Defining Characteristics (DC) - 78.7%, Related Factors (RF) - 89.4% and At Risk Population (RP) - 68.1%; Functional UI - title and definition - 89.4% and At Risk Population (RP) - 87.2%; Transient UI - Associated Conditions (AC) - 89.4%. The judges evaluated 150 elements of the nursing diagnoses, out of which 41 were excluded from the study. Regarding the analyzed elements, the judges provided suggestions that, after discussion among authors and new literature research, were incorporated or discarded. CVI for the studied elements of nursing diagnoses and the results for Wilcoxon test are shown in Tables 1 to 5.

Table 1 – Content Validity Index for Nursing Diagnosis Stress Urinary Incontinence – Campinas, SP, Brazil, 2019.

Item	CVI	CI 95%	Wilcoxon Test	
			V	p-value
Stress Urinary Incontinence				
DC: Urine loss with effort (exclusively or predominantly)	1.000	1.000-1.000	4095	1.000
DC: Absent or small residue after urination	0.500	0.500-0.625	253	<0.001
DC: Urine loss with no symptoms of bladder storage	0.750	0.625-0.750	666	<0.001
DC: Loss of small amounts of urine	0.750	0.625-0.750	741	<0.001
RF: Pelvic floor muscle weakness or less effective pelvic floor muscle contraction	1.000	1.000-1.000	3741	0.998
RF: Any factor leading to higher intra-abdominal pressure associated to some physiological abnormality (muscle or nerves)	0.875	0.875-1.000	2556	0.141
RF: Muscle trauma or lesion due to denervation	0.875	0.875-0.875	2080	0.005
RF: Medication side-effects	0.750	0.750-0.750	406	<0.001
AC: Weakness or damage in muscles and connective tissue of the pelvic floor	1.000	1.000-1.000	4095	1.000
AC: Non-neurogenic causes of pelvic floor or urethral sphincter lesion	0.875	0.875-0.875	2016	0.003
AC: Urethral sphincter weakness or relaxation due to lesion or neurologic disease	0.875	0.875-0.875	1830	<0.001
AC: Vaginal or vulvar atrophy	0.750	0.750-0.750	703	<0.001
RP: Men ≥ 60 years-old	1.000	1.000-1.000	4465	1.000
RP: Women who had vaginal birth	0.875	0.750-0.875	1596	<0.001
RP: Multiparous	0.875	0.875-0.875	1953	0.001
RP: Men after prostatectomy	1.000	0.875-1.000	2926	0.549

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Item	CVI	CI 95%	Wilcoxon Test	
			V	p-value
RP: People with excess body weight	0.875	0.750-0.875	1035	<0.001
RP: White women	0.500	0.500-0.625	171	<0.001
RP: Men with abdominal obesity	0.750	0.625-0.750	435	<0.001
RP: People with a history of previous pelvic surgery	0.750	0.750-0.750	703	<0.001

Legend: DC: Defining Characteristic; RF: Related Factor; AC: Associated Condition; RP: At Risk Population; CVI: Content Validity Index; V: Wilcoxon Test; CI: Confidence Interval.

Table 2 – Content Validity Index for Nursing Diagnosis Urgency Urinary Incontinence – Campinas, SP, Brazil, 2019.

Item	CVI	CI 95%	Wilcoxon Test	
			V	p-value
Urgency Urinary Incontinence				
DC: Urgency	1.000	1.000-1.000	4656	1.000
DC: Urine loss between varied amounts of urination, associated with urgency	0.875	0.750-0.875	1540	<0.001
DC: Increased Urinary frequency	0.875	0.750-0.875	1431	<0.001
DC: Nocturia	0.750	0.750-0.875	946	<0.001
DC: Decreased bladder capacity	0.875	0.750-0.875	1326	<0.001
DC: Small or absent residual after urination	0.625	0.500-0.625	231	<0.001
DC: Presents adaptive behavior due to urgency	0.750	0.750-0.750	595	<0.001
DC: Urgency sensation triggered by stimuli	0.875	0.875-0.875	1830	<0.001
RF: Pelvic floor weakness	0.875	0.875-0.875	2145	0.009
RF: Tobacco usage	0.625	0.500-0.625	210	<0.001
RF: Restricted/impaired mobility	0.750	0.625-0.750	561	<0.001
RF: Adverse effects from medication (polyuria): diuretics, especially rapid action agents	0.875	0.750-0.875	903	<0.001
RF: Chronic constipation	0.750	0.625-0.750	300	<0.001
RF: Pelvic organs prolapse	0.875	0.875-0.875	1378	<0.001
RF: Bladder overactivity syndrome	1.000	1.000-1.000	3828	0.999
RF: Excessive ingestion of liquids	0.750	0.625-0.750	630	<0.001
RF: Consumption of alcohol, caffeine, and carbonated beverages	0.750	0.750-0.875	903	<0.001
RF: Constraints on ingestion of liquids	0.500	0.375-0.500	210	<0.001
AC: Diminished capability to deal with afferent signals in the brain and abnormal increased afferent signals from bladder and/or urethra	0.875	0.875-0.875	2145	0.009
AC: Bladder abnormality or inflammation (such as tumors, calculi, interstitial cystitis, painful bladder syndrome, infections or after radiotherapy)	1.000	0.875-1.000	3081	0.736
AC: Vascular insufficiency and cardiac disease (congestive cardiac insufficiency)	0.625	0.625-0.750	171	<0.001
AC: Estrogen deficiency with vaginal or vulvar atrophy	0.750	0.750-0.750	351	<0.001
AC: Altered mental health (anxiety, depression, postpartum depression, sexual, physical, and emotional abuse)	0.750	0.750-0.875	820	<0.001
AC: Diabetes	0.875	0.750-0.875	1225	<0.001
AC: Infravesical obstruction	0.750	0.750-0.875	1081	<0.001
AC: Medication side-effects: Cholinesterase inhibitors	0.875	0.750-0.875	903	<0.001
AC: Impaired bladder emptying	0.875	0.750-0.875	1128	<0.001
AC: Sleep disorders (sleep apnea, periodic leg movements)	0.500	0.500-0.625	120	<0.001
RP: Elderly individuals and increased age	1.000	0.875-1.000	2926	0.549
RP: Race/ethnicity	0.625	0.500-0.625	276	<0.001
RP: Female gender: reproductive factors	0.875	0.875-0.875	1485	<0.001
RP: Obese people	0.750	0.750-0.875	820	<0.001

Legend: DC: Defining Characteristic; RF: Related Factor; AC: Associated Condition; RP: At Risk Population; CVI: Content Validity Index; V: Wilcoxon Test; CI: Confidence Interval.

Table 3 – Content Validity Index for Nursing Diagnoses Urinary Incontinence due to Neurogenic Detrusor Overactivity – Campinas, SP, Brazil, 2019.

Item	CVI	CI 95%	Wilcoxon Test	
			V	p-value
Urinary Incontinence Due to Neurogenic Detrusor Overactivity				
DC: Reflex Urination	1.000	0.875-1.000	2926	0.549
DC: Prophylactic Urination	0.750	0.625-0.750	666	<0.001
DC: Looking for a toilet immediately when arriving at a new place	0.625	0.500-0.625	351	<0.001
DC: Drinking less liquid due to bladder control problems	0.750	0.750-0.750	1035	<0.001
DC: Choosing clothes that do not show urine loss	0.625	0.500-0.625	231	<0.001
DC: Avoiding sexual intimacy	0.625	0.625-0.750	231	<0.001
DC: Urination induced by electrical stimulation of sacral roots or catheterization	0.875	0.750-0.875	2145	0.009
DC: Frequent loss of small amounts of urine	0.875	0.875-0.875	2145	0.009
RF: Neurogenic Detrusor Overactivity	1.000	1.000-1.000	4656	1.000
RF: Detrusor Sphincter Dyssynergia	1.000	0.875-1.000	3403	0.955
RF: Bladder hypersensitivity	0.875	0.875-1.000	2628	0.199
RF: Decreased bladder compliance	0.875	0.875-1.000	2701	0.272
RF: Consumption of alcohol, caffeine, and carbonated beverages	0.750	0.625-0.750	561	<0.001
RF: Excessive ingestion of liquids	0.625	0.500-0.625	435	<0.001
RF: Constraints on ingestion of liquids	0.500	0.500-0.625	300	<0.001
RF: Chronic constipation	0.625	0.500-0.625	300	<0.001
RF: Obesity	0.625	0.500-0.625	253	<0.001
RF: Vitamin C, calcium	0.500	0.375-0.500	10	<0.001
RF: Tobacco dependence	0.625	0.500-0.625	45	<0.001
AC: Suprapontine lesions	1.000	0.875-1.000	3003	0.646
AC: Pontine lesions	0.875	0.875-1.000	2850	0.450
AC: Supra-sacral medullary lesions	1.000	0.875-1.000	3240	0.876
AC: Urological complications: Recurrent urinary tract infection, Kidney and/or vesical calculi, Vesicoureteral reflux, Hydronephrosis, Kidney insufficiency	0.875	0.750-0.875	1653	<0.001
RP: Obese women	0.625	0.500-0.625	190	<0.001
RP: Elderly	0.750	0.750-0.875	1225	<0.001

Legend: DC: Defining Characteristic; RF: Related Factor; AC: Associated Condition; RP: At Risk Population; CVI: Content Validity Index; V: Wilcoxon Test; CI: Confidence Interval.

Table 4 – Content Validity Index for Nursing Diagnosis Disability Associated Urinary Incontinence – Campinas, SP, Brazil, 2019.

Item	CVI	CI 95%	Wilcoxon Test	
			V	p-value
Disability Associated Urinary Incontinence				
DC: Restricted/impaired mobility	0.875	0.875-1.000	2701	0.272
DC: Lack of preoccupation with going to the toilet or incontinence itself	0.750	0.625-0.750	741	<0.001
DC: Not knowing how to find the toilet	0.750	0.750-0.875	1275	<0.001
DC: Postponing urination	0.875	0.750-0.875	1540	<0.001
DC: Reduced urinary frequency	0.625	0.625-0.750	741	<0.001
DC: Urinary urgency	0.750	0.750-0.875	903	<0.001
DC: Employing strategies for urine contention	0.875	0.750-0.875	1275	<0.001
DC: Restriction on liquids	0.625	0.500-0.750	351	<0.001
DF: Adaptive behavior to avoid urine loss	0.750	0.750-0.875	1275	<0.001
RF: Avoids anti-hygienic toilets	0.750	0.750-0.875	1540	<0.001

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Item	CVI	CI 95%	Wilcoxon Test	
			V	p-value
RF: Avoids going to the toilet in social situations due to embarrassment	0.875	0.750-0.875	1830	<0.001
RF: Oppositional and provocative behavior	0.750	0.625-0.750	630	<0.001
RF: Pleasant sensations associated to excessively distended bladder or rectum	0.625	0.500-0.625	351	<0.001
RF: Getting used to the habit of postponing urination	0.875	0.875-0.875	1891	0.001
RF: Constipation or fecal impaction	0.750	0.625-0.750	595	<0.001
RF: Problems due to vesical training or psychological difficulty	0.875	0.875-0.875	2016	0.003
RF: Environmental factors that interfere with continence	0.875	0.875-1.000	2556	0.141
RF: Increased liquid consumption	0.875	0.750-0.875	1035	<0.001
RF: Liquid retention	0.625	0.625-0.750	435	<0.001
RF: Use of diuretics	0.875	0.875-0.875	1953	0.001
AC: Cognitive impairment	1.000	1.000-1.000	3916	1.000
AC: Motivational issues	0.875	0.875-1.000	2485	0.097
AC: Overall intellectual disability	1.000	0.875-1.000	3240	0.876
AC: Use of medication that alters urinary tract function or cause sedation or confusion	0.875	0.875-0.875	1770	<0.001
AC: Compromised mobility/coordination/hand dexterity	1.000	1.000-1.000	3741	0.998
AC: Health clinical conditions (osteoarticular, cardiac and urinary tract diseases)	0.875	0.750-0.875	2016	0.003
RP: Female children	0.625	0.625-0.750	595	<0.001
RP: Fragile elderly women	0.875	0.875-1.000	2775	0.356
RP: Fragile elderly	1.000	0.875-1.000	2926	0.549
RP: Children	0.750	0.750-0.875	1035	<0.001

Legend: DC: Defining Characteristics; RF: Related Factor; AC: Associated Condition; RP: At Risk Population; CVI: Content Validity Index; V: Wilcoxon Test; CI: Confidence Interval.

Table 5 – Content Validity Index for Nursing Diagnosis Mixed and Transient Urinary Incontinence – Campinas, SP, Brazil, 2019.

Item	CVI	CI 95%	Wilcoxon Test	
			V	p-value
Mixed Urinary Incontinence				
DC: Urgency	1.000	1.000-1.000	3741	0.998
DC: Urine loss preceded by urgency sensation	1.000	1.000-1.000	3570	0.988
DC: Urine loss with effort, cough, sneeze, or laughter	1.000	1.000-1.000	3741	0.998
DC: Nocturia	0.750	0.750-0.875	1225	<0.001
DC: Sensation of incomplete bladder emptying	0.750	0.750-0.875	1378	<0.001
RF: Flaccid/weak anterior vaginal wall and/or atrophy of striated muscles	1.000	1.000-1.000	3486	0.976
RF: Urethral sphincter and bladder neck incompetence	1.000	1.000-1.000	3570	0.988
AC: Estrogen deficiency	0.875	0.875-0.875	1711	<0.001
AC: Menopause	0.875	0.875-0.875	2278	0.025
AC: Obesity	0.875	0.750-0.875	1770	<0.001
AC: Pelvic organ prolapse	0.875	0.875-1.000	2775	0.356
AC: Diabetes	0.875	0.750-0.875	1891	0.001
AC: Chronic cough or tobacco use	0.875	0.875-0.875	1891	0.001
RP: People who already have one type of urinary incontinence	0.875	0.875-1.000	2775	0.356
RP: People with functional mobility difficulties	0.875	0.750-0.875	1596	<0.001
RP: People with advanced age	0.875	0.875-0.875	2278	0.025

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RP: Race	0.625	0.500-0.625	153	<0.001
RP: Multiparous	0.875	0.750-0.875	1275	<0.001
RP: People with long-lasting presence of one type of urinary incontinence	0.875	0.875-0.875	1953	0.001
RP: Trauma in urethral muscles or pelvic floor	1.000	1.000-1.000	3570	0.988
Transient Urinary Incontinence				
DC: Loss of urine caused by reversible or transient factors	1.000	0.875-1.000	3321	0.923
DC: Sudden urine loss	1.000	0.875-1.000	2926	0.549
DC: Signs and symptoms of urine loss persist for less than six months	1.000	0.875-1.000	3403	0.955
RF: Delirium	0.750	0.750-0.875	990	<0.001
RF: Infection/urinary tract infection	0.875	0.875-1.000	2775	0.356
RF: Atrophic vaginitis	0.875	0.750-0.875	903	<0.001
RF: Use of medications that alter normal neurotransmitter levels in the lower urinary tract	0.875	0.875-1.000	2485	0.096
RF: Psychological condition (anxiety, depression, postpartum depression, sexual, physical, and emotional abuse)	1.000	0.875-1.000	2926	0.549
RF: Excess urine production	0.750	0.750-0.875	903	<0.001
RF: Restricted/impaired mobility	0.875	0.875-0.875	1953	0.001
RF: Fecal impaction/intestinal constipation	0.750	0.750-0.875	1035	<0.001
RF: Dehydration	0.625	0.500-0.625	253	<0.001
RF: Consumption of dietary irritants	0.750	0.750-0.875	820	<0.001
AC: Age-related urinary tract changes	0.750	0.625-0.875	1035	<0.001
AC: Conditions that alter the position or innervation of bladder and sphincter	0.875	0.750-0.875	2016	0.003
AC: Conditions that result in the reduction of vesical compliance	0.875	0.875-1.000	2346	0.040
AC: Infravesical obstruction	0.875	0.875-0.875	2211	0.015
AC: Pregnancy and postpartum	0.875	0.875-1.000	2775	0.356
RP: Elderly	0.875	0.750-0.875	1711	<0.001
RP: People with some acute disease which may influence continence or urine production	1.000	0.875-1.000	3403	0.955

Legend: DC: Defining Characteristic; RF: Related Factor; AC: Associated Condition; RP: At Risk Population; CVI: Content Validity Index; V: Wilcoxon Test; CI: Confidence Interval.

DISCUSSION

Nursing diagnoses validation is considered an essential phase for the construction of knowledge for clinical practice, since it supplies a support for improving available nursing diagnoses and establishing new ones[6]; also, their analysis enables a better comprehension of the studied nursing diagnoses[2]. Considering that it is aimed at improving diagnosis structure, validation is recommended for all diagnosis components, i.e., title, definition, characteristics, related factors[2], as well as elements recently incorporated by NANDA-I: associated conditions and at risk population, for which there is scarcity of studies on UI-related diagnoses[3]. Validation is based on opinions of experts or judges on the degree of how much each element indicates a certain nursing diagnosis[6].

Time of clinical work is currently employed as an experience indicator due to its influence in decision-making[6]. Although most judges (73%) were advanced beginner[5], the mean experience was 16 years (with a five year minimum) and hence they may be considered experienced evaluators[7].

Evaluation involved six different types of nursing diagnoses related to UI, demanding from the judge some specific knowledge regarding the theme and the studied taxonomy. Although most judges had professional experience with nursing diagnoses or UI, only one third or less had experience with both themes. Previous studies reported similar difficulties in judge selection[6], since there is a reduced number of nurses with expertise on the diagnosis being validated or nurses using it for clinical practice[8].

As for points related to diagnosis content analysis, although most elements of the nursing diagnoses were considered relevant by the judges (90% or more), some presented smaller relevance.

For the establishment of nursing diagnosis Transient UI, two factors are essential: time of persistence of urine loss signs/symptoms and reversibility of its cause. Frequently this nursing diagnosis can only be identified retrospectively; on the other hand, when signs and symptoms persist for more than six months, this nursing diagnosis must be reconsidered. Also, many of its associated conditions and at risk populations are also elements of other nursing

diagnoses related to UI and, in these cases, analysis of all elements is necessary for proper inference. Thus, nursing diagnosis Transient UI has been modified in almost all elements to make it more appropriate. The judges' suggestions incorporated into the study to improve appropriateness of this nursing diagnosis consisted of altering some of the related factors such as "infection", "delirium", "medication use" (altered to "use of medication that alters normal neurotransmitter levels in the lower urinary tract"), and "atrophic vaginitis" for associated conditions, and including as at risk population "pregnant and puerperal women"[9], "multiparous women who had vaginal birth"[10-11], "elderly people hospitalized with acute conditions" and "institutionalized people"[12]; "mother's Body Mass Index (BMI) and baby birth weight higher or equal to 3.7 Kg"[10]; "second stage of prolonged labor" and "presence of UI during gestation"[13]. Although the CVI of some of these elements was smaller than 0.85, the following elements were chosen to remain due to their relevance to diagnosis inference, since the confidence interval encompasses this value: delirium; atrophic vaginitis; excess urine production; fecal impaction/intestinal constipation; use of dietary irritants; age-related changes to the urinary tract; elderly.

Concerning nursing diagnosis Functional UI, some judges suggested its title be altered; the rationale was that it does not accurately portray the elements of this nursing diagnosis, which makes inference difficult. Since the International Continence Society suggests the diagnosis Disability Associated Incontinence[14], this title seems to better describe Nursing Diagnosis Functional UI, since its definition includes factors external to urinary tract that interfere in urination control. Some elements with CVI smaller than 0.85 were kept due to being considered important to diagnosis inference, since the confidence interval encompasses this value. These elements were: not knowing how to get to the toilet; postponing urination; urinary urgency; use of strategies for urine control; adaptive behavior to avoid urine loss (defining characteristics); avoids going to anti-hygienic toilets; avoids going to the toilet in social situations due to embarrassment; increased liquid ingestion (related factors); use of certain medications (altered to "use of medications that alter urinary tract function or cause sedation or confusion"); medical conditions (altered to "clinical health conditions (osteoarticular, cardiac and urinary tract diseases)") (associated conditions); and children (at risk population).

Nursing diagnosis Mixed UI is a prevalent diagnosis[1] that shares elements from nursing diagnoses Stress UI and Urgency UI, but it is not defined simply by concomitant presence of signs and symptoms of both these diagnoses. This is speculated to be a different phenomenon, presenting a particular etiology which derives from interaction between factors related to urgency and stress[15]. Thus, although judges suggested that all elements present in nursing diagnoses Stress UI and Urgency UI were added to this nursing diagnosis, literature does not corroborate this suggestion. However, suggestions of alteration were accepted for the position of elements such as: "obesity", from related factor to at risk population; "pelvic organ prolapse (POP)", from associated condition to related factor; and "urethral muscles or pelvic floor trauma", from at risk population to associated condition. POP is a condition able to receive independent nursing interventions and is hence framed as a related factor. The following were also added to at risk population: "Women who had vaginal birth" and "surgery for correction of Stress UI and POP"[16] as an associated condition. The elements "nocturia" and "sensation of incomplete bladder emptying", "diabetes", "motor and functional difficulties", although with CVI smaller than 0.85, were kept, since the confidence interval encompasses this value and they constitute important elements for a better comprehension of nursing diagnoses.

The title of the nursing diagnosis Reflex UI was substituted with UI due to Neurogenic Detrusor Overactivity, since the main condition associated to this Diagnosis is neurogenic detrusor overactivity. For this diagnosis, the judges suggested that the following defining characteristic be added: altered bladder sensitivity, which may be increased, decreased, absent or unspecified[14], use of devices to store/control urinary loss (diapers, absorbent)[17] and increased residual volume[17]. Elements previously identified as related factors, such as neurogenic detrusor overactivity[18-20], detrusor sphincter dyssynergia[21], bladder hypersensitivity[19], reduced bladder compliance[20] are indeed associated conditions, since they are not conditions that may receive independent nursing interventions, rather being an aid in the process of diagnosis inference. The identification of associated conditions such as neurological dysfunction, and/or tissue damage, such as irradiation, surgery and infection, support diagnosis inference and its differentiation, since their signs and symptoms are similar to those of another nursing diagnosis, the Urgency UI. Although its CVI was smaller than 0.85, "elderly" was kept as a at risk population, since they are one of the groups more often cited in the researched literature. The following were included as at risk population due to judges' suggestions: chronic degenerative diseases and traumatic and non-traumatic encephalic and medullary lesions. As an associated condition, diabetes mellitus was included[17] from judges' suggestions. However, since none of the proposed related factors were maintained, similarly to other nursing diagnoses contained in NANDA-I taxonomy, there is a clear need for the development of new studies to identify factors related to this diagnosis.

Although there are some similarities between nursing diagnosis Urgency UI and UI due to Neurogenic Detrusor Overactivity, in the Urgency UI reviewed in this study, differentiation of common elements (especially defining characteristics and associated conditions) was sought, while presenting some specific related factors, such as detrusor overactivity syndrome, which is idiopathic and common in people with this diagnosis; it is also responsible for most of the described signs/symptoms. Some judges suggested the removal of associated condition "impaired bladder emptying", although it has presented appropriate CVI. The suggestion was partially accepted: the term was substituted with "impaired bladder contractility", due to this being clearer

and facilitating diagnosis inference. Also, associated condition "recurrent urinary tract infection" was added[1], since signs/symptoms such as frequent urination, dysuria, urinary urgency and urine loss may be associated to infection. Some elements of nursing diagnoses were maintained, since their confidence interval encompassed the value 0.85: urinary loss between varied urinary volume, increased urinary frequency, nocturia, reduced bladder capacity, medication adverse effects (polyuria): diuretics (considered in this study an associated condition), consumption of alcoholic beverage, caffeine and carbonated beverages, altered mental health (anxiety, depression, post-partum depression, sexual, physical and emotional abuse), diabetes, infravesical obstruction, medication side-effects - cholinesterase inhibitors, feminine gender - reproductive factors, obesity (considered in this study as at risk population: "obese people").

Nursing diagnosis Stress UI, due to the judges' suggestions, was maintained as having only one defining characteristic: loss of urine with effort (exclusive or predominantly), which unites essential attributes for the elaboration of this nursing diagnosis. Another suggestion was adding pelvic organ prolapse[22-23] as a related factor, since it can occur due to excessive and repetitive effort associated to some abnormality in muscle or pelvic floor nerves[12], menopause[1] as an associated condition and people who perform high-intensity physical exercise[24] as at risk population, especially those practicing sports involving weightlifting and young and middle-aged women[1].

This study's strong point is providing all the elements of UI-related nursing diagnoses, clarifying them with the specialized literature while subsidizing the establishment of relations among them, which was not observed in the literature researched until this moment. Also, it subsidizes the advancement of knowledge on the nursing diagnoses and urinary disfunctions areas, facilitating the identification and differentiation of urinary incontinence types which may be used for assistance, research, and teaching. However, this study is limited by the fact that these elements were not clinically validated in a specific population to confirm the findings presented here.

CONCLUSION

Maintenance is suggested for the four nursing diagnoses analyzed in NANDA-I's taxonomy: Urgency UI, Stress UI, Disability Associated UI (denominated Functional UI in NANDA-I's taxonomy, version 2018-2020) and UI due to Neurogenic Detrusor Overactivity (denominated Reflex UI in NANDA-I's taxonomy, version 2018-2020). The inclusion of two nursing diagnoses is also recommended: Mixed UI and Transient UI. The analysis of the elements of the nursing diagnoses related to UI has led to a better understanding of this condition, as well as of the relations between the elements that constitute it, making the diagnosis structure clearer and more precise, which may thus facilitate diagnosis inference.

RESUMO

Objetivo: Analisar o conteúdo dos diagnósticos de enfermagem relacionados à incontinência urinária da NANDA *International* e outros identificados na literatura. **Método:** Estudo metodológico realizado com juízes expertos em disfunções miccionais e diagnósticos de enfermagem. Analisaram-se os diagnósticos de Incontinência Urinária de Esforço, Incontinência Urinária de Urgência, Incontinência Urinária Funcional e Incontinência Urinária por Hiperatividade Detrusora Neurogênica (antes denominado Incontinência Urinária Reflexa, na taxonomia da NANDA *International*) e Incontinência Urinária Mista e Incontinência Urinária Transitória. Aplicou-se o teste de Wilcoxon e considerou-se adequado o Índice de Validade de Conteúdo ≥0,85. **Resultados:** Participaram 51 juízes. Os juízes sugeriram modificações nos elementos de todos os diagnósticos (inclusão, exclusão ou alteração no tipo de elemento previamente classificado). **Conclusão:** Sugerem-se a manutenção dos quatro diagnósticos analisados na taxonomia da NANDA *International*, com modificações, e a inclusão dos diagnósticos de enfermagem Incontinência Urinária Mista e Transitória.

DESCRITORES

Incontinência Urinária; Diagnóstico de Enfermagem; Classificação; Enfermagem; Terminologia; Estudos de Validação.

RESUMEN

Objetivo: Analizar el contenido de los diagnósticos de enfermería relacionados con la incontinencia urinaria en NANDA *International* y otros identificados en la literatura. **Método:** Estudio metodológico realizado con jueces expertos en disfunciones urinarias y diagnósticos de enfermería. Se analizaron los diagnósticos de Incontinencia Urinaria de Esfuerzo, Incontinencia Urinaria de Urgencia, Incontinencia Urinaria Funcional e Incontinencia Urinaria de Hiperactividad Neurogénica del Detrusor (anteriormente llamada Incontinencia Urinaria Refleja en la taxonomía de NANDA *International*) e Incontinencia Urinaria Mixta e Incontinencia Urinaria Transitoria. Se aplicó la prueba de Wilcoxon y se consideró adecuado el Índice de Validez del Contenido ≥ 0,85. **Resultados:** Cincuenta y uno jueces participaron. Los jueces sugirieron modificaciones en los elementos de todos los diagnósticos (inclusión, exclusión o cambio en el tipo de elemento previamente clasificado). **Conclusión:** Se sugiere el mantenimiento de los cuatro diagnósticos de la taxonomía de NANDA *International* con modificaciones y la inclusión de los diagnósticos de enfermería Incontinencia Urinaria Mixta y Transitoria.

DESCRIPTORES

Incontinencia Urinaria; Diagnóstico de Enfermería; Clasificación; Terminología; Estudios de Validación.

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