



ORIGINALES

Facial validation of Nursing Activities Score in three intensive care units in Bogota, Colombia

Validación facial de la escala Nursing Activities Score en tres unidades de cuidado intensivo en Bogotá, Colombia

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ABSTRACT

Introduction: The measurement of workloads in nursing is essential to objectify the nurse-patient relationship. It is assumed that the greater complexity of patients, the greater the time commitment of a nurse providing direct care.

Method: Cross-cultural adaptation of the scale Nursing Activities Score (NAS) to Spanish, includes 23 items that measure clinical and administrative tasks of nurses in ICU use. The instrument to an expert opinion be submitted using the Delphi method two rounds to corroborate the content validity of the instrument. The ratio of content validity (RVC) and content validity index (CVI) to establish the usefulness of each item will apply. The ratio of content validity (RVC) and content validity index (CVI) to establish the usefulness of each item will apply. Subsequently, the device should be applied to a sample of nursing professionals three polyvalent intensive care units, applying the same statistical test.

Results: significant RVC data were obtained for most items, in the round of experts and professionals sampling. Although there are some items that did not obtain the minimum score to be considered valid, the global index IVC in the sample of experts and professionals is considered satisfactory, so the scale is considered to be valid with amendments

Keywords: Professional role; nursing care; reproducibility of results; workload

RESUMEN

Introducción: La medición de cargas de trabajo en enfermería es fundamental para objetivar la relación enfermera-paciente. Se asume que a mayor complejidad de los pacientes, es mayor el tiempo

de dedicación de una enfermera a la provisión de cuidados directos

Método: Se usará la adaptación transcultural de la escala Nursing Activities Score (NAS) al español, compuesta por 23 ítems que miden tareas clínicas y administrativas de enfermeras en UCI. Se someterá el instrumento a un juicio de expertos usando el método delphi de dos rondas para corroborar la validez de contenido del instrumento. Se aplicará la razón de validez de contenido (RVC) y el índice de validez de contenido (IVC) para establecer la utilidad de cada uno de los ítems. Posteriormente, se aplicará el instrumento a una muestra de profesionales de enfermería de tres unidades de cuidado intensivo polivalentes, aplicando los mismos estadísticos de prueba.

Resultados: Se obtuvieron datos de RVC significativos para la mayoría de los ítems, tanto en la ronda de expertos como en el muestreo con profesionales. Aunque hay algunos ítems que no obtuvieron el puntaje mínimo para que se consideren válidos, el índice global IVC en la muestra de expertos y profesionales se considera satisfactorio, por lo que se considera que la escala puede ser válida con modificaciones.

Palabras clave: Rol profesional; atención de enfermería; validez de las pruebas; carga de trabajo.

INTRODUCTION

Nursing: professional role and workloads in Intensive Care Units

Intensive care units are a fundamental part of the health care model, and they provide the highest quality care with the necessary infrastructure and personnel to meet the demand for care that increases comparatively in relationship with other hospital services ⁽¹⁾. In this context, given the clinical conditions of the patients derived from the critical condition, the time, knowledges and training are required to provide quality care, being determinant the nurse-patient relationship in terms of quality and satisfaction of the demand for care ⁽²⁾. There is no consensus to determine the number of nurses needed in an intensive care unit. However, it is generally accepted that, if the tasks of a nurse increase, also increase the risk of not complying with them, or decrease the efficiency and final quality. Some reports said that for each additional patient assigned to a nurse, simultaneously with the percentage of mortality, or performance problems including Burnout syndrome, job dissatisfaction, decreased teamwork, among others. ⁽³⁾

The clinical condition of the patients (this is, the diagnostic factors and disease prognoses) has been related to the amount and time of nursing required to meet the demands for care. For this, some evaluation instruments have been designed to establish reasonably the number of nurses necessary in the intensive area, under the premise that, if the complexity of a patient is bigger, at the same time the need for required care increases, and thus the nurse's time dedicated to providing them. The measurement scales TISS-28 ⁽⁴⁾ or Nursing Activities Score ⁽⁵⁾ are part of the efforts to evaluate nursing needs in relation to the type of patients attended. For excellence, the TISS-28, created with Cullen et al., has been in Colombia the most widespread instrument to measure the time required by a nurse in the care of patients, because from the clinical needs of patients can be abstracted the relationships of the nurses required ⁽⁶⁾. However, this scale doesn't involve another set of tasks that nurses fulfill and are not strictly clinical, but related to the management and administration of nursing services. Thus appears the Nursing Activities Score scale, published by Miranda et al. In 2003, as a tool to include and analyze nursing time for both clinical care and management of nursing services ⁽⁵⁾

Quality of care and nursing care

A definition of quality in care is understood as "that which is expected to provide the user with maximum and complete well-being after assessing the balance of gains and losses that can accompany the process in all its parts" ⁽⁷⁾. However, the increase in complex and care's demands, makes the term "quality" has become more complex. Indeed, the concept varies according to who uses it and consequently the idea of quality will be different for users, being different for health professionals, hospital managers or government entities.

Donabedian identifies three components of the quality of care. First, the technical component, which is the application of science and technology in the management of a problem of a person in a way that yields the maximum benefit without increasing its risks. Second, the interpersonal component, based on the postulate that the relationship between people must follow the norms and social values that govern the interaction of individuals in general (modified in part by the ethical dictates of professionals and the expectations and aspirations of each person individual). Finally, the third component consists of the comfort aspects, which are all those elements of the user's environment that provide him with more comfortable attention ⁽⁸⁾. Nursing interventions should be evaluated using sensitive quality indicators based on the intensity and complexity of the care required of each patient ⁽⁹⁾, not forgetting that it is part of a multidisciplinary team. In addition, the duties of the nurse include non-clinical activities, but inherent to care, such as management and other administrative tasks ⁽¹⁰⁾.

Measuring Scores of nursing workloads

To demonstrate the cost-benefit ratio of the intensive care unit (ICU), a variety of tools have been designed to measure not only the severity of the patient's illness, but also to capture the true cost of the nursing workloads. It's a challenge to find an effective workload measurement tool for nursing, that is operative and effective to measuring the loads in reference to the critical patient, as well as being able to quantify the necessary human resources ⁽¹¹⁾. Attempts have been made to use methods of direct measurement of workloads, such as real-time measurements of the Research Nursing Project (PRN) or Time-Oriented Scoring System (TOSS), which showed its difficult application by consumption Excessive time in its application and for not being, in the case of PRN, designed for ICU. Cullen (1974) described the Therapeutic Intervention Scoring System (TISS), initially designed as a system for classifying patients per the severity of their disease and quantifying nursing workloads in relation to severity ^(4, 12). Later, the TISS-76 is redesigned and validated by the TISS-28, which is converted into a tool considered to be effective in quantifying nursing workloads in relation to critical patient severity in intensive care units ⁽¹³⁾. In the last 20 years, the criteria for admission, the complexity of nursing care and the technological progress related to the critical patient have revealed the need to review and update the systems for quantifying workloads.

Nursing Activities Score (NAS): process of validation and cross-cultural adaptation to Spanish

In 2003, the Nursing Activities Score (NAS) was published, with the purpose of determine the nursing activities that best describe the workloads in an intensive care unit and to attribute measures to these activities, so that the score obtained describes

the average time consumption, in the place of the severity of the illness ⁽¹⁴⁾. NAS items were selected and defined through a consensus-based multicenter study among 25 expert careers (15 physicians and 10 nurses) ⁽⁵⁾. A number of nursing activities were described; five global nursing interventions were identified and the mean time each activity was consumed was determined. The NAS was validated by an observational and later study of the results obtained by the simultaneous computation of TISS-28. The results of the NAS express, in percentage of time, the nursing charges that the attention to the critical patient entails. Subsequently the transcultural adaptation to the Castilian of the NAS was published. Using people specialized in translations into Spanish with the native English language, and translators of language with Spanish language mainly with a high level of English, in a separate way, a unique instrument and to validate their level of understanding to Castilian. The result was optimal for the investigators ⁽¹⁵⁾

METHOD

Descriptive study of psychometric cut, for the facial validation of the "Nursing Activities Score" scale in three intensive care units in Bogotá, from December 2014 to April 2015.

The scale used was the Spanish version of the NAS validated in 2012 by Arias et al ⁽¹⁵⁾. For the facial validation, was used the delphi methodology, and was include a expert's panel who evaluated the questionnaire and determined if the items were relevant to the local reality. Two rounds of evaluation were conducted, taking into account the preservation of confidentiality and independence of evaluators. Subsequently, the scale validated by the experts was applied to a sample of nursing professionals working in three multipurpose intensive care units.

Phase 1. Expert's panel.

To perform the facial validation of the instrument, a sample of 9 nursing professionals was chosen. The criteria for inclusion of experts were: professional nurse with experience of 2 years or more in the service of intensive care unit, and have specialization in the area.

Table 1. Description of criteria's inclusion of the expert's panel (n=9)

Total of experts	9
Average age (years)	30.7
Average experience (years)	3.9
With clinical postgraduate studies	100%

Source: Investigation Data

The scale was classified in terms of sufficiency, relevance, coherence and clarity, assigning values between 1 and 4 according as follows: 4- high level; 3: moderate level; 2: low level and 1 No level. In addition, it is requested to find each one of the three probabilities of answer namely: Essential, Useful but not necessary and Not

necessary. These results are calculated the content validity ratio with related items as essential. Once the first round was completed, the experts received feedback from the items that were considered problematic, that is, those that presented low levels of relevance or clarity.

The experts evaluated the items in their clarity ⁽¹⁶⁾, and evaluated the coherence, adequacy, relevance ⁽¹⁷⁾ and importance of the items ⁽¹⁸⁾. Nine experts were selected taking into account their academic and postgraduate training, and less than two years of experience in the specific area (ICU). Two panel rounds were conducted evaluating items that did not obtain a majority consensus in the second. In order to determine the degree of agreement between the judges regarding the categories evaluated for facial and content validity, the Content Validity Ratio (RVC) proposed by Lawshe (1975) was used for each item and subsequently calculating the Index of Validity of Content (IVC) for the whole instrument proposed by Lynn (1986) ⁽¹⁹⁾.

It is accepted that in the Lawshe model RVC minimum values are affected by the number of panelists, such that RVC is very demanding with few panelists (RVC = 1 with 5 panelists) and very lax with many Panelists (RVC = 0.29 with 40 panelists). Therefore, the model proposed by Tristán-López (2008) is adopted in which the model for the establishment of minimum RVC values is reviewed, considering acceptable values greater than 0.33, with an overall validity index of the instrument greater than 0,69, considering the total number of judges participating in the round of analysis ⁽²⁰⁾

To calculate the content validity ratio, the following formula ⁽¹⁹⁾ was considered:

$$RVC = \frac{n - N/2}{N/2}$$

n: number of experts tan considered the ítem as esential

N: Total of experts that have evaluated the item.

To calculate the content validity index, the average calculation of all the items, including those that did not reach the minimum value ⁽²⁰⁾, is considered.

Phase 2. Application of the NAS scale to nursing professionals.

After completing the second round of expert assessment, the instrument was applied to Nursing Professionals working all shifts (morning, afternoon and evening) in three multipurpose intensive care units. The essentiality that each observed in the different items of the questionnaire was evaluated. The same statistics (RVC and IVC) were used for all assessments, considering as a point of agreement global values higher than 0.59 given the number of participants ⁽²⁰⁾

A sample of 17 Nursing Professionals from Three Units of Intensive Care in Bogota, who attend critically ill adult patients, were obtained. These professionals worked in the three shifts for care: Morning, afternoon and night. Demographics of respondents are summarized in Table 2:

Table 2. Description of the sample: Nursing professionals

Total Professionals	17		
Gender	<i>Male</i>	<i>Female</i>	
	23 %	76%	
Average Age	29.41 years		
With postgraduate clinical studies	<i>Yes</i>	<i>No</i>	
	52%	48%	
Average time of work in ICU	2.48 years		
Shift	<i>Morning</i>	<i>Afternoon</i>	<i>Night</i>
	35%	35%	30%
Average patients assigned to each nurse	6.05		

Source: Investigation Data

The professionals received the instrument and were asked to answer each item with three probabilities of answer: Essential, useful but not necessary and not necessary. These last results were calculated the content validity ratio with the items considered as essential. (Table 4)

RESULTS

Table 3 summarizes the findings of evaluations performed by nursing experts. The results obtained by these experts showed disagreement in items 2, 4b, 4c, 6c, 7b, 8b, 8c, since they did not reach the minimum RVC value. These items were then presented in the second evaluative round, however, none of the experts modified their assessment over what they had initially done.

Considering the findings, it was possible to determine a Content Validity Index of 0.7777, which is the result of the items mean with a minimum RVC, which is considered acceptable to determine its reliability⁽²⁰⁾.

		Table 3. RVC results for NAS instrument according to nursing experts	RVC Content validity reason	
	N°	PROPOSED ITEM		
Daily NAS (Nursing Activities Score)	1	Monitoring and evaluation		
	1.a	Hourly vital signs, regular registration and calculation of fluid balance	1	
	1.b	Be present at the foot of the bed and continuous or active observation of 2 or more during a shift, for reasons of safety, gravity or therapy such as non-invasive mechanical ventilation, weaning procedures, restlessness, mental disorientation, prone position, donation procedures, preparation and administration of fluids or even medication, help in specific procedures	0,777	
	1.c	Be present at the foot of bed and active observation of 4 h or more during some shift, for reasons of security, gravity or therapy such as the examples of 1b	0,555	
	2	Performing laboratory, biochemical and microbiological procedures, including routinely	0,111	
	3	Administration of medication, including vasoactive drugs	0,555	
	4	Hygiene procedures		
	4.a	Performing hygienic procedures such as wound healing and intravascular catheters, patient care, changing of sheets, incontinence, vomiting, burns, wounds, complex surgical cure with irrigation and special procedures (for example: isolation measures, measures related to Cross-infection, room cleanliness, staff hygiene)	1	
	4.b	Performing these hygiene procedures for more than 2 hours in some shift	0,333	
	4.c	Performing these hygiene procedures for more than 4 hours in some shift	0,111	
	5.	Care of drains (all except gastric tube)	0,777	
	6	Mobilization and positioning		
		Including procedures such as: mobilization of the patient in bed, mobilization of the bed to the chair, use of a lifting crane or lifting the patient in equipment (for example: patient immobilization, traction, prone position)		
	6.a	Performing procedures up to 3 times in 24 hours	0,777	
	6.b	Realización de procedimientos más de 3 veces en 24 horas o con 2 enfermeras, con cualquier frecuencia	0,111	
	6.c	Performing procedures more than 3 times in 24 hours or with 2 nurses, with any frequency	0,333	
	7	Including procedures such as phone calls, interviews, counseling or guidance. At times, the support and care of family members or patients allows the staff to continue with other nursing activities (for example: communication with patients during hygiene procedures, communication with relatives while standing at bedside and observing the patient)		
	7.a	Support and care of family members or patients who require complete dedication for at least 1 hour in any of the shifts, such as complicating the clinical situation, trying to solve problems of pain or distress, difficult family circumstances	0,555	
	7.b	Support and care of relatives or patients who require full dedication for 3 hours or more in any of the shifts, such as death, demanding circumstances (fr example: large numbers of relatives, language problems, hostile families)	0,111	
	8	Administrative and organizational tasks		
	8.a	Routine tasks such as clinical data processing, request for testing, professional exchange of information (for example: counting part, round tables, clinical sessions, clinical visit)	0,555	
	8.b	Routine and organizational tasks that require full dedication for 2 hours in one of the shifts, such as research activities, protocol updates, income processing and patient discharge	0,333	
	8.c	Routine and organizational tasks requiring full dedication for 4 hours or more in one shift, such as coordination with other disciplines in the process of death or organ donation	-0,333	

Ventilatory support	9.	Respiratory support: any form of mechanical ventilation, assisted ventilation with or without PEEP with or without muscle relaxants, spontaneous breathing with or without PEEP with or without endotracheal tube. Oxygen supplementation with any method	0,777
	10	Care of the artificial airway: endotracheal tube or tracheostomy cannula	0,777
	11	Treatment to improve lung function: respiratory physiotherapy, incentive spirometry, inhalation therapy, endotracheal aspiration	0,555
Cardiovascular Support	12	Vasoactive medication. Regardless of type and dose	1
	13	Intravenous replacement of high doses of fluids. Administration of 3 l / m ² / d (\approx 6 l / 24 hours), regardless of the type of fluids administered	1
	14	Monitoring of the left atrium: pulmonary artery catheter with or without measurements of cardiac output	1
	15	Cardiopulmonary resuscitation after stopping in the last 24 hours (no precordial puncture)	0,777
	16	Hemofiltration techniques, dialysis techniques	0,777
	17	Quantitative measurements of urine for example: with bladder catheter)	0,777
Neurological support	18	Measurement of intracranial pressure	1
Metabolic support	19	Treatment of metabolic complications, only acidosis / alkalosis	0,555
	20	Parenteral Nutrition, > 40 kcal/kg/d	0,555
	21	Enteral feeding through gastric tube or other gastrointestinal route	0,555
Specific interventions	22	Specific interventions in the intensive care unit: endotracheal intubation, pacemaker insertion, cardioversion, endoscopy, emergency surgery in the last 24 hours, gastric lavage. Routine interventions are not included without direct consequences for the patient's clinical situation, such as: x-rays, ultrasound, electrocardiography, cures, or insertion of arterial or venous catheters.	0,777
	23	Specific interventions outside the intensive care unit: surgery or diagnostic procedures	0,555

Source: Investigation Data

		Table 4. RVC results for NAS instrument according to nursing professionals	RVC Content validity reason	
	Nº	PROPOSED ITEM		
Daily NAS (Nursing Activities Score)	1	Monitoring and evaluation		
	1.a	Hourly vital signs, regular registration and calculation of fluid balance	0,765	
	1.b	Be present at the foot of the bed and continuous or active observation of 2 or more during a shift, for reasons of safety, gravity or therapy such as non-invasive mechanical ventilation, weaning procedures, restlessness, mental disorientation, prone position, donation procedures, preparation and administration of fluids or even medication, help in specific procedures	0,529	
	1.c	Be present at the foot of bed and active observation of 4 h or more during some shift, for reasons of security, gravity or therapy such as the examples of 1b	-0,294	
	2	Performing laboratory, biochemical and microbiological procedures, including routinely	0,647	
	3	Administration of medication, including vasoactive drugs	0,529	
	4	Hygiene procedures		
	4.a	Performing hygienic procedures such as wound healing and intravascular catheters, patient care, changing of sheets, incontinence, vomiting, burns, wounds, complex surgical cure with irrigation and special procedures (for example: isolation measures, measures related to Cross-infection, room cleanliness, staff hygiene)	0,529	
	4.b	Performing these hygiene procedures for more than 2 hours in some shift	0,059	
	4.c	Performing these hygiene procedures for more than 4 hours in some shift	-0,176	
	5.	Care of drains (all except gastric tube)	0,529	
	6	Mobilization and positioning Including procedures such as: mobilization of the patient in bed, mobilization of the bed to the chair, use of a lifting crane or lifting the patient in equipment (for example: patient immobilization, traction, prone position)		
		6.a	Performing procedures up to 3 times in 24 hours	0,176
	6.b	Realización de procedimientos más de 3 veces en 24 horas o con 2 enfermeras, con cualquier frecuencia	0,176	
	6.c	Performing procedures more than 3 times in 24 hours or with 2 nurses, with any frequency	-0,412	
	7	Including procedures such as phone calls, interviews, counseling or guidance. At times, the support and care of family members or patients allows the staff to continue with other nursing activities (for example: communication with patients during hygiene procedures, communication with relatives while standing at bedside and observing the patient)		
	7.a	Support and care of family members or patients who require complete dedication for at least 1 hour in any of the shifts, such as complicating the clinical situation, trying to solve problems of pain or distress, difficult family circumstances	0,647	
	7.b	Support and care of relatives or patients who require full dedication for 3 hours or more in any of the shifts, such as death, demanding circumstances (fr example: large numbers of relatives, language problems, hostile families)	-0,059	
	8	Administrative and organizational tasks		
	8.a	Routine tasks such as clinical data processing, request for testing, professional exchange of information (for example: counting part, round tables, clinical sessions, clinical visit)	0,529	
	8.b	Routine and organizational tasks that require full dedication for 2 hours in one of the shifts, such as research activities, protocol updates, income processing and patient discharge	0,059	
	8.c	Routine and organizational tasks requiring full dedication for 4 hours or more in one shift, such as coordination with other disciplines in the process of death or organ donation	-0,412	
	Ventilatory support	9.	Respiratory support: any form of mechanical ventilation, assisted ventilation with or without PEEP with or without muscle relaxants, spontaneous breathing with or without PEEP with or without endotracheal tube. Oxygen supplementation with any method	0,765

<i>Ventilatory support</i>	10	Care of the artificial airway: endotracheal tube or tracheostomy cannula	0,777
	11	Treatment to improve lung function: respiratory physiotherapy, incentive spirometry, inhalation therapy, endotracheal aspiration	0,555
<i>Cardiovascular Support</i>	12	Vasoactive medication. Regardless of type and dose	1
	13	Intravenous replacement of high doses of fluids. Administration of 3 l / m ² / d (\approx 6 l / 24 hours), regardless of the type of fluids administered	1
	14	Monitoring of the left atrium: pulmonary artery catheter with or without measurements of cardiac output	1
	15	Cardiopulmonary resuscitation after stopping in the last 24 hours (no precordial puncture)	0,777
	16	Hemofiltration techniques, dialysis techniques	0,777
	17	Quantitative measurements of urine for example: with bladder catheter)	0,777
<i>Neurological support</i>	18	Measurement of intracranial pressure	1
<i>Metabolic support</i>	19	Treatment of metabolic complications, only acidosis / alkalosis	0,555
	20	Parenteral Nutrition, > 40 kcal/kg/d	0,555
	21	Enteral feeding through gastric tube or other gastrointestinal route	0,555
<i>Specific interventions</i>	22	Specific interventions in the intensive care unit: endotracheal intubation, pacemaker insertion, cardioversion, endoscopy, emergency surgery in the last 24 hours, gastric lavage. Routine interventions are not included without direct consequences for the patient's clinical situation, such as: x-rays, ultrasound, electrocardiography, cures, or insertion of arterial or venous catheters.	0,777
	23	Specific interventions outside the intensive care unit: surgery or diagnostic procedures	0,555

Source: Investigation Data

The results obtained by the professionals showed disagreement in items 1b, 4b, 4c, 6c, 7b, 8b, 8c, 10,11. These items did not reach the minimum RVC value.

Considering the findings, it was possible to determine a Content Validity Index of 0.596, which is considered acceptable to determine its reliability.

DISCUSSION

The analysis of the NAS must be done from the local perspective, because although the questionnaire was validated and adapted transculturally into Castilian, it is still unknown its application at the local level. One of the objectives of the present study was precisely to characterize if the items contained in the questionnaire were useful in the reality of three intensive care units in Bogotá.

By the results obtained when calculating the content validity ratio proposed in the Lawshe model for the present study, differences were found between the optics of the experts and the judgment of the professionals. The inclusion criteria for the experts who did the initial validation of the instrument differed from the sample of professionals, so it is assumed that the degree of expertise could influence the clarity and sufficiency with which certain items were evaluated. However, even with these interindividual differences there was general agreement on problematic items in general, which of course did not reach validity indexes of reliable contents to be considered.

In their assessments, the experts declared items 2, 4b, 4c, 6b, 6c, 7b, 8b and 8c to be non-essential, specifically related to:

- a. Laboratory, biochemical and microbiological procedures
- b. Carry out hygiene procedures with time between 2 and 4 hours

- c. Performing procedures more than 3 times in 24 hours or with 2 nurses
- d. Support and care of relatives or patients in matters such as death, demanding circumstances
- e. Research activities, updating of protocols, income and discharge of patients, or in organ donation processes

In the case of professionals, their assessments showed a behavior like that of the experts, however, some items not considered essential are added, such as:

- a. Be at the foot of patients' bed 4 hours or more
- b. Caring for the airway
- c. Physiotherapy or rehabilitation

Although other studies, using a similar methodology, weren't found, differences between evaluators of several items of the scale, especially those with various response options, may be described in the literature. Gonçalves (2007) found difference with the application in Brazil of items 1, 4, 6, 7 and 8 ⁽²¹⁾; the same described Carmona (2013) who found significant differences in items 1, 4, 6, 7, 8 and 14, most of which have a different score depending on the time spent ⁽²²⁾. They even had to propose annexes to the instrument to clarify the application and reduce the induced variability of the responses. It can then be concluded that there are specific items where the perception of the evaluator counts, and this perception is clearly influenced by the load and the characteristics of the work in each unit, hospital and region.

The tasks that must be performed in the intensive unit vary depending on the characterization of the patients. The units that participated in this study are polyvalent, and all exclude the care of coronary patients. They are also highly complex, so forecast scores are also varied. Patients with acute chronic, trauma or post-surgical conditions are usually treated generally for all three units. With these characteristics, it is inferred that the care patients require are diverse, and therefore, there must be a collaborative work.

In Colombia, to meet the demands of personnel, multiple tasks have been assigned to nursing techniques, depending on the type of ICU and complexity. Tasks such as hygiene and skin care have been delegated to some ICUs and no longer fall on the role of a nursing professional, as well as the participation of other professionals such as bacteriologists, physiotherapists, or roles of administrative nurses who assume some of the tasks described in the questionnaire. This entails interpreting some of the items as not necessary or relevant, but the nurse / patient relationship and its objective assessment of the scale must be accurately determined for each case.

Experts and practitioners agree that intensive care nurses do not get involved in time-consuming tasks. This can be explained due to the patient nurse relationship, which for the average case of the professionals surveyed is 6, which contrasts a little with the experts, who were assigned only 3 or 4. This means that tasks could be prioritized, leaving main therapeutic or clinical interventions and withdrawing others as functions of accompaniment, counseling, education or research. Although the present study is not able to statistically discern the relation between the number of patients assigned (workload) and the assessment of the items using the NAS instrument, it is inferred that if there is a high workload, tendency to structure care plans by clinical priorities. This could also influence the valuation of the items classified as essential and of the

non - necessary items. There is a risk of underestimating some of the items when I have a high workload, so that the nursing professionals should be careful when applying the scale, being rigorous in the method and not underestimating any of the items. Even with the observations of the participants, certain advantages have been found in the use of the instrument. It should not be forgotten that in a global way the valuations of experts and professionals classified the instrument as valid obtaining content validity global (IVC) of 0.77 and 0.596 respectively, which is accepted within the model. Analyzing this result with the advantages of the instrument, it could be said that ⁽¹⁴⁾:

- a. The NAS takes into account nursing activities described in the TISS-28
- b. Nursing activities not directly related to the critical patient, but related and necessary to ensure the continuity of nursing care have been included.
- c. The NAS is independent of the type of unit and patient to whom it is applied.
- d. The NAS can be used as a management tool, for calculating templates, for measuring time usage, for quantifying the number of tasks per shift, and for estimating costs.

Law 911 of 2004 (Colombia) regulated from a deontological point of view professional nursing practice. There, it is mentioned that the nurse can only answer for the direct care of nursing or for the administration of the care, when the ratio of the number of people assigned considers the complexity of the health situation of the people, and is such that Reduce possible risks, meet the quality standards and the opportunity for care. ⁽²³⁾ However, the law does not define the exact number of patients a nurse should attend to, so this aspect has been in practice dictated by service providers who, as employers, base workloads on supply and demand laws. demand. The National Court of Nursing Ethics emphasizes that in Colombia there are no studies that allow the establishment of objective criteria for the number of patients that can be cared for by a quality nurse, and points out that in other countries this item is already regulated ⁽²⁴⁾.

CONCLUSIONS

For the terms of the present study, the instrument was validated by both experts and professionals. However, for the Colombian case, there are items that should be suppressed or modified because they do not apply to the local context, because the characteristics of the units, the workloads in the country and the profile of the nurse of our country differ from those of the instrument. Since there is division of labor among other disciplines and technical roles, there is variation in the relevance or otherwise of the items of the instrument.

Clinically, the patient's condition is reflected with a greater amount of care and time required. Thus, severity criteria (under a scale accepted as Apache II or SAPS 2-3) have proportional relation with the NAS, being bidirectional. This means that from the data obtained from the scale can be inferred not only the staff required for a shift or guard, but also approximate the severity and complexity of patients, and with this assign the number of professionals in charge. The independence shown by the NAS with respect to the type of ICU and with respect to the type of patient, make it a useful tool to measure the nursing workloads in intensive units, however in the face of a high workload, it is finally established priorities in care, reflecting an underestimation of the least relevant items from the clinical point of view.

The work of nursing professionals is comprehensive and covers all dimensions of the human being. However, workloads directly impact the type of role assumed by the nurse, that is, that the resource is optimized prioritizing the physiological dimension and modifying or obviating others, such as social, spiritual or family. The recommendation is then, at the time of using the scale, not to underestimate items, but to objectively report scores to accurately determine the degree of needs of a unit.

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