

## ORIGINAL ARTICLE

# Validation of a nursing assessment for hospitalized individuals with infectious diseases

*Validação de um histórico de enfermagem para indivíduos hospitalizados com doenças infectocontagiosas*

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## ABSTRACT

To analyze the validity of empirical indicators of basic human needs contained in a nursing assessment for individuals hospitalized with infectious diseases. Methodological study developed in two stages: content analysis and clinical validation. A total of 37 specialist nurses participated in the first stage, and in the second stage there were 65 individuals admitted to the infectious disease clinics of two university hospitals. In the clinical validation, the presence and absence of empirical indicators were evaluated. In the content analysis, 14 empirical indicators were eliminated, considering the relevance criterion. Regarding the criteria of clarity and precision, 33 empirical indicators had their operational definitions reformulated, with Cronbach's alpha from 0.967 to 0.986. In clinical validation, adjustments were made to the final structure of the nursing assessment. It was concluded that the empirical indicators of the nursing assessment adequately represented the focus of interest and showed excellent internal consistency.

**Descriptors:** Nursing; Communicable Diseases; Nursing Records; Nursing Process; Validation Studies.

## RESUMO

Analisar a validade dos indicadores empíricos das necessidades humanas básicas contidos em um histórico de enfermagem para indivíduos hospitalizados com doenças infectocontagiosas. Pesquisa metodológica, desenvolvida em duas etapas: análise de conteúdo e validação clínica. Na primeira etapa participaram 37 enfermeiros especialistas e, da segunda, 65 indivíduos internados nas clínicas de doenças infectocontagiosas de dois hospitais universitários. Na validação clínica, foram avaliadas a presença e a ausência dos indicadores empíricos. Na análise de conteúdo, foram eliminados 14 indicadores empíricos, considerando o critério de relevância. Quanto aos critérios de clareza e precisão, 33 indicadores empíricos tiveram suas definições operacionais reformuladas, com alfa de Cronbach de 0,967 a 0,986. Na validação clínica, foram realizados ajustes para a estruturação final do histórico de enfermagem. Concluiu-se que os indicadores empíricos do histórico de enfermagem representaram adequadamente o foco de interesse e apresentaram excelente consistência interna.

**Descritores:** Enfermagem; Doenças Transmissíveis; Registros de Enfermagem; Processo de Enfermagem; Estudos de Validação.

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## INTRODUCTION

The re-emergence of diseases that were once under control and the identification of new microorganisms and their dissemination has highlighted infectious diseases among the morbidities that affect human beings. This is due to several factors, including the increase in global population, aging, urbanization and climate change<sup>(1)</sup>.

Efforts have been concentrated on improving the care provided to individuals with such diseases. The Ministry of Health has created strategies such as vaccination campaigns, implementation of the rapid tests network, construction of sentinel units agreed between states and municipalities, preparation of health care protocols and financial transfer of funds for the implementation of actions<sup>(2)</sup>.

In this context, within the practice of the nursing professional, as an agent of transformation in the health-disease process, is duty and responsibility in regard to services and structures of health care and surveillance<sup>(3)</sup>.

Visibility of care is conferred through documentation of the care provided<sup>(4)</sup>. It is estimated that nursing professionals should spend 15% of their working time with documentation, which is proof of the quantity and quality of care<sup>(5)</sup>. Although documentation is essential in the process of nursing care, there is still no universal standardization of registration, there is a lack of technological instruments that guide the documentation of care and a lack of validated tools that accurately represent the clinical phenomenon of interest<sup>(6,7)</sup>.

The use of technological instruments to record information related to the care process consists of the adoption of a guiding axis for care, since it enables the assessment of clinical behaviors and manifestations. It also directs clinical reasoning and decision making, thereby operationalizing implementation of the nursing process, in order to provide theoretical support and care effectiveness<sup>(8)</sup>. In this perspective, it is necessary to use validated instruments, considering that the validation process is a resource that verifies whether a set of items is comprehensive and represents the subject in focus<sup>(9)</sup>.

Moreover, recognizing the need to apply the knowledge base in practice, makes it necessary to use a nursing theory. In this study scenario, Horta's Theory of Basic Human Needs was used, because it is understood that the individual with an infectious disease does not only undergo physiological adaptations, due to exposure to etiological agents, but also social, emotional and spiritual adaptations, especially as a result of the feeling of stigma and prejudice.

In light of the above, researchers have increased interest in studies aimed at the construction and/or validation of instruments for different focuses of care documentation. The magnitude of infectious diseases is noteworthy, given that since the mid-1960s, with the advent of bacterial resistance to antimicrobials and the reappearance of old diseases and expansion of new diseases, there has been an epidemiological

polarization in developing countries. This occurred with the concomitant presence of high rates of morbidity and mortality from chronic non-communicable diseases, and the incidence and prevalence of infectious diseases, with high mortality rates in comparison with developed countries. However, there is an incipency of validated instruments for documentation of the nursing process in individuals affected by these diseases<sup>(10)</sup>.

Considering the nursing assessment of individuals with infectious diseases constructed in a previous study, the importance of its validation to improve content and accurately represent the phenomenon of interest is emphasized. Thus, the present study aimed to analyze the validity of empirical indicators of basic human needs contained in a nursing assessment for individuals hospitalized with infectious diseases.

## METHODS

This is a methodological study developed in two stages: content analysis with specialist nurses and clinical validation with individuals hospitalized with infectious diseases.

Considering that models used in the validation of nursing diagnoses<sup>(11-13)</sup> were not designed to validate other elements of care, such as history, interventions and nursing outcomes, adjustments and adaptations to the focus of interest are necessary, an aspect which is considered within the scope of the present study. Taking into account the particularities presented, some methodological steps proposed in a validation model<sup>(13)</sup> were used, specifically in the content analysis by specialists, carried out between August and November 2015.

In the content analysis, two searches were conducted on the *Lattes* Platform to identify the specialists. In search 1, "communicable diseases" was used as the subject and in search 2, "contagious diseases". Both searches were made on the bases for "doctors and other researchers", with "Brazilian" nationality and a filter related to the area of professional practice: broad area "health sciences", area "Nursing" and sub-area "Nursing of contagious diseases"; meeting the inclusion criteria of being a nurse with a minimum of master's degree, developing care activity in a hospital unit for infectious diseases for at least 1 year; or being a nurse with a minimum of master's degree and teaching a subject on the Graduate Course in Nursing focused on care given to individuals affected by infectious diseases for at least 1 year.

The population was defined in accordance with the total number of *Lattes* Curricula selected on said searches, removing repetitions, which resulted in 43 specialists. The calculation for finite population was used, at confidence interval of 95% and sampling error of 6%, with the support of a program in R language (Software R) to make the calculation, which, after execution, arrived at a sample of 37 individuals.

For content analysis, a data collection instrument divided into two parts was constructed. The first contained characterization data on the specialists, and the second, empirical indicators of the theory of basic human needs<sup>(14,15)</sup>, distributed across: psychobiological needs — oxygenation (19), hydration (3), nutrition (28), elimination (25), sleep and rest (6), physical activity (11), sexuality and reproduction (5), physical and environmental safety (13), body care (17), physical integrity (28), vascular regulation (17), thermal regulation (4), neurological regulation (18), sensory perception (6), therapy and prevention (9); psychosocial needs — communication (8), gregariousness (4), recreation and leisure (1), emotional safety (16); self-esteem, self-confidence and self-respect (9), health education and learning (6); psychospiritual needs — religiosity and spirituality (5); accounting for 258 empirical indicators.

The experts were asked to analyze the empirical indicators of basic human needs and their respective operational definitions, based on the criteria of relevance, clarity and precision. Relevance refers to the pertinence and the possibility of the indicator and definition being important; clarity was taken as the ability of the indicator and the definition to be intelligible, with short sentences; accuracy was understood as the ability of the indicator and the definition to have a defined position and be distinct from others<sup>(16)</sup>. For each criterion analyzed, the following response options were presented: zero, if inadequate (inappropriate, regarding the criterion under analysis); 1, if partially adequate (incomplete and insufficient, regarding the criterion under analysis); and 2, if adequate (appropriate and pertinent, regarding the criterion under analysis). If the specialist considered any indicator as zero or 1, they were asked to use the space indicated for justification and suggestions for modification.

In the analysis, proportion tests were used, considering minimum agreement of 80%, as well as the binomial test. To perform the binomial test, a three-point scale was recoded into two points, values equal to zero and one were categorized as inadequate, and values equal to two considered adequate, which was necessary due to the dichotomous nature of the test.

In the relevance criterion, the empirical indicators that failed to reach the minimum 80% agreement and presented a p-value above 0.05, and those that did not reach the minimum 80% agreement and presented a p-value below 0.05, considering the bilateralism of the binomial test, were eliminated. Regarding the criteria of clarity and precision, the operational definitions of the empirical indicators that failed to reach the minimum agreement of 80% and presented p-value above 0.05, and those that did not reach the minimum agreement of 80% and presented p-value below 0.05, considering the bilateralism of the binomial test, were modified. The modifications occurred according

to the consolidated suggestions presented by the specialists. Cronbach's alpha was used to measure the reliability of the test, and a reliability score between the values of 0.7 and 1 was considered acceptable<sup>(17)</sup>.

Regarding clinical validation, given the lack of methodological references relevant to the validation of nursing assessment, which is the object of the present analysis, specific criteria were adopted for the selection of hospitalized individuals to determine the sample and proceed with statistical treatment of the data.

The clinical validation stage was developed in infectious disease inpatient units of two university hospitals in the State of Paraíba, in the Northeast Region of Brazil. Individuals hospitalized during the data collection period, from February to April 2016, were included and those under 18 years of age and those not presenting infectious diseases were excluded.

The population was defined based on a survey of admissions to the locus units of the study. Thus, the mean number of hospitalizations in the months from February to April of 2014 and 2015 was defined. A total of 104 individuals were hospitalized. Finite population calculation, 95% confidence interval and sample error of 7.5% were used, and R-language program (Software R) was used to perform the calculation which, after being executed, arrived at a sample of 65.

In the clinical validation, the instrument analyzed in the previous stage by specialist nurses, consisting of empirical indicators of basic human needs was used. These indicators were assessed based on anamnesis and physical examination techniques and judged on presence or absence when applied to individuals hospitalized with infectious diseases.

Data collection was performed by the researcher with the assistance of collaborators. Before applying the instrument, the collaborators participated in training, during which aspects such as anamnesis and physical examination of the studied population were addressed, based on the operational definitions of the empirical indicators present in the nursing assessment.

In the clinical validation, the presence and absence of empirical indicators of basic human needs were evaluated, which supported the adjustments and the final presentation of the nursing assessment for individuals hospitalized with infectious/contagious diseases.

The research was approved by the Research Ethics Committee of the institution linked to the study, under approval protocol No. 1,663,005.

## RESULTS

In the content analysis stage, it was found that, among the specialist nurses, the majority were female (94.6%), from the Northeast Region (78.3%), with an average age of 41.08 ( $\pm 9.54$ ), with a master's degree (62.2%), and teaching

experience in the area of infectious diseases (58.7%), with an average of 11.22 ( $\pm 10.55$ ) years of experience.

Regarding the evaluation of empirical indicators by specialist nurses, 14 were eliminated, according to the criterion of relevance, and 33 had their operational definitions modified, according to the criteria of clarity and precision (Table 1).

To prove the internal consistency of the empirical indicators, according to the criteria mentioned, Cronbach's alpha was verified, as shown in Table 2.

Regarding the clinical validation with hospitalized individuals, it was found that the majority were male (53.8%), with a mean age of 44.5 ( $\pm 16.42$ ), single (41.5%), developed a home occupation as professional activity (21.5%), resided in the interior of the state (50.8%), presented HIV/AIDS as the main medical diagnosis (30.8%) and presented as main reasons for hospitalization: fever (17.1%), headache (7.7%), vomiting (6.1%); cough, diarrhea and myalgia, with 5.5%, each.

The survey of absent and present empirical indicators based on adjustments in the composition of the nursing assessment for individuals hospitalized with infectious diseases, is shown in Chart 1. As for the absentees, it was found that 27 empirical indicators were not identified: absent vesicular murmurs, use of tracheostomy, ascites, anasarca, use of closed nasogastric tube, anuria, oliguria, choluria, enterorrhagia, melena, pyuria, urinary retention, use of open nasogastric tube, sleep apnea, pediculosis, dehiscence, evisceration, cyanosis, hematoma, hemorrhage, decortication, unconscious, opisthotonos, anisocoric pupils, sardonic laughter, trismus and adverse effects.

## DISCUSSION

From the content analysis, expressiveness was found for the elimination of empirical indicators of the psychobiological need for oxygenation, such as nasal flaring, fluid expectoration and whimpering. The first was considered redundant because it is a clinical manifestation of dyspnea, a term already contemplated. Fluid sputum was judged not to be specific for individuals with infectious diseases, considering that individuals with pulmonary infection usually present purulent sputum<sup>(18)</sup>. Whimpering, on the other hand, is a very common sign in newborns and infants, whereas the nursing assessment is intended for those over 18 years of age.

Among infectious diseases, coughing with or without expectoration, hemoptysis and dyspnea are highlighted as needs in oxygenation in pulmonary tuberculosis<sup>(19)</sup>. These data were confirmed in a retrospective study developed with individuals with HIV/AIDS and tuberculosis comorbidities, pointing out that, of these, 38.3% had chronic cough<sup>(20)</sup>.

The large number of alterations in operational definitions of empirical indicators of the need for nutrition is noteworthy, especially regarding the use of propaedeutic methods for abdominal assessment.

Thus, in the distended abdomen, in addition to inspection, the propaedeutic percussion method was added, in order to evaluate the accumulation of gases, liquids and solids in the abdominal cavity. In the flaccid abdomen, the cause was added, as it is a result of muscle weakening, which reduces firmness and elasticity.

The definition of the globe-like abdomen was considered confusing with the voluminous abdomen, and thus, the first was considered as an increase in the anteroposterior diameter of the abdomen, and the second as an increase in its transverse diameter.

The definition of a massive abdomen was also modified, as it was not considered as an abdominal type in Semiotronics, but as an abdominal sound obtained by percussion of massive viscera.

Abdominal flaccidity can be perceived in people affected by HIV/AIDS as an adverse effect of antiretroviral therapy, due to lipodystrophy, classified as lipo-hypertrophy, when there is fat accumulation. Generally, the area of the body most affected by lipo-hypertrophy is the abdominal region<sup>(21)</sup>. This finding was observed in a study that related the highest rates of lipo-hypertrophy in overweight patients, which is possibly explained by the greater accumulation of fat in the abdominal region<sup>(22)</sup>.

The globe-like and voluminous abdomen are common in obese individuals with ascites, hepatomegaly and splenomegaly. A study has demonstrated that such clinical manifestations can be seen in individuals with tuberculosis, liver diseases, filariasis and alcoholism<sup>(23)</sup>.

In psychosocial needs, the elimination of empirical indicators of the need for self-esteem, self-confidence and self-respect was observed, such as desire for conquest and victory, and recognizing as deserving of love and happiness. These refer to positive attributes of the need, which are not always found in the hospitalized individual, due to the change in routine and family distance, which results in fragility, considering that the hospitalization process generates a bio-psychosocial and spiritual change in human beings<sup>(24)</sup>.

In psychospiritual needs, the operational definition of the empirical indicator for religion was changed, as it was restricted to the need to belong to a religious entity. Thus, it is believed that the relationship between religiosity and individuals diagnosed with diseases with no possibility of cure is important, because it requires the aggregation of different cultural parameters, moral concepts and specific ideals that give meaning to human existence<sup>(25)</sup>.

In clinical validation, it is inferred that the non-occurrence of some empirical indicators is due to the fact that certain

**Table 1.** Distribution of the empirical indicators of basic human needs according to specialist analysis. João Pessoa, PB, Brazil, 2016.

Empirical indicators of basic human needs	Relevance		Clarity		Accuracy	
	n (%)	p-value	n (%)	p-value	n (%)	p-value
Psychobiological needs						
Oxygenation						
Flaring of the nostrils	28 (75.7)	0.511	-	-	-	-
Dyspnea	32 (86.5)	0.324	18 (48.6)	0.000	19 (51.4)	0.000
Thick sputum	33 (89.2)	0.162	29 (78.4)	0.805	27 (73.0)	0.285
Fluid sputum	29 (78.4)	0.805	-	-	-	-
Whimpering	26 (70.3)	0.139	-	-	-	-
Vesicular murmurs absent	33 (89.2)	0.162	24 (64.9)	0.021	30 (81.1)	0.869
Nutrition						
Distended abdomen	34 (91.9)	0.071	21 (56.8)	0.000	25 (67.6)	0.059
Flaccid abdomen	30 (81.1)	0.869	23 (62.2)	0.007	25 (67.6)	0.059
Globe-like abdomen	33 (89.2)	0.162	27 (73.0)	0.285	27 (73.0)	0.285
Solid abdomen	33 (89.2)	0.162	30 (81.1)	0.869	29 (78.4)	0.805
Voluminous abdomen	30 (81.1)	0.869	27 (73.0)	0.285	29 (78.4)	0.805
Partial acceptance of the diet	35 (94.6)	0.026	27 (73.0)	0.285	26 (70.3)	0.139
Total acceptance of the diet	33 (89.2)	0.162	29 (78.4)	0.805	29 (78.4)	0.805
Anorexia	37 (100.0)	0.002	28 (75.7)	0.511	28 (75.7)	0.511
Decreased appetite	34 (91.9)	0.071	31 (83.8)	0.565	28 (75.7)	0.511
Splenomegaly	36 (97.3)	0.009	29 (78.4)	0.805	31 (83.8)	0.565
Does not accept oral diet	34 (91.9)	0.071	29 (78.4)	0.805	28 (75.7)	0.511
Food preferences	28 (75.7)	0.511	-	-	-	-
Singultus	29 (78.4)	0.805	-	-	-	-
Elimination						
Appearance of feces (odor)	33 (89.2)	0.162	28 (75.7)	0.511	30 (81.1)	0.869
Flatulence	32 (86.5)	0.324	28 (75.7)	0.511	31 (83.8)	0.565
Urinary incontinence	34 (91.9)	0.071	25 (67.6)	0.059	32 (86.5)	0.324
Urinary retention	36 (97.3)	0.009	28 (75.7)	0.511	33 (89.2)	0.162
Use of open nasogastric tube	34 (91.9)	0.071	29 (78.4)	0.805	31 (83.8)	0.565
Sleep and rest						
Satisfactory sleep	32 (86.5)	0.324	29 (78.4)	0.805	33 (89.2)	0.162
Physical Activity						
Muscle atrophy	34 (91.9)	0.071	27 (73.0)	0.285	27 (73.0)	0.285
Sexuality and reproduction						
Presence of sexually transmitted diseases	34 (91.9)	0.071	28 (75.7)	0.511	24 (64.9)	0.021
Body Care						
Dandruff	27 (73.0)	0.285	-	-	-	-
Use of orthodontic appliance	25 (67.6)	0.059	-	-	-	-

Continue...

**Table 1.** Continuation.

Empirical indicators of basic human needs	Relevance		Clarity		Accuracy	
	n (%)	p-value	n (%)	p-value	n (%)	p-value
Physical integrity						
Exanthema	36 (97.3)	0.009	29 (78.4)	0.805	31 (83.8)	0.565
Vascular regulation						
Tourniquet test	35 (94.6)	0.026	29 (78.4)	0.805	33 (89.2)	0.162
Thermal regulation						
Piloerection	27 (73.0)	0.285	-	-	-	-
Sensory perception						
Presents body expressions related to pain	34 (91.9)	0.071	29 (78.4)	0.805	29 (78.4)	0.805
Factors that increase pain	34 (91.9)	0.071	29 (78.4)	0.805	31 (83.8)	0.565
Therapy and prevention						
Updated Vaccination Card	36 (97.3)	0.009	27 (73.0)	0.285	30 (81.1)	0.869
Side effects	36 (97.3)	0.009	29 (78.4)	0.805	30 (81.1)	0.869
Physical and environmental safety						
Treated water	34 (91.9)	0.071	26 (70.3)	0.139	30 (81.1)	0.869
Waste disposal	34 (91.9)	0.071	32 (86.5)	0.324	29 (78.4)	0.805
Habit of sanitizing food	35 (94.6)	0.026	34 (91.9)	0.071	29 (78.4)	0.805
Psychosocial needs						
Communication						
Stuttering	29 (78.4)	0.805	-	-	-	-
Recreation and leisure						
Free time activity	29 (78.4)	0.805	-	-	-	-
Emotional security						
Frustration	29 (78.4)	0.805	-	-	-	-
Self-esteem, self-confidence and self-respect						
Attitudes related to own body	32 (86.5)	0.324	30 (81.1)	0.869	28 (75.7)	0.511
Desire for conquest and victory	29 (78.4)	0.805	-	-	-	-
Recognizes that they are deserving of love and happiness.	28 (75.7)	0.511	-	-	-	-
Fear of exposing ideas	28 (75.7)	0.511	-	-	-	-
Psycho-spiritual needs						
Religiosity and spirituality						
Religion	34 (91.9)	0.071	32 (86.5)	0.324	29 (78.4)	0.805

**Table 2.** Analysis of the reliability of empirical indicators. João Pessoa, Paraíba, Brazil, 2016.

Criteria	Empirical indicators	Cronbach's Alpha	95% interval
Relevance	258	0.986	0.979 a 0.992
	244	0.986	0.979 a 0.992
Clarity	244	0.967	0.951 a 0.981
Accuracy	244	0.979	0.968 a 0.987

**Chart 1.** Nursing assessment of individuals hospitalized with infectious diseases.

NURSING ASSESSMENT FOR HOSPITALIZED INDIVIDUALS WITH INFECTIOUS DISEASES		
IDENTIFICATION INFORMATION		
Date of attendance: ___/___/___ Date of admission: ___/___/___ Ward: _____ Bed: _____		
Name: _____		
Date of birth: ___/___/___	Sex: <input type="checkbox"/> M <input type="checkbox"/> F	Marital status: _____
Occupation: _____		Origin: _____
Reason for hospitalization: _____		
Medical diagnosis: _____		
VITAL SIGNS AND ANTHROPOCENTRIC DATA		
Axillary temperature: _____ °C	Pulse rate: _____ bpm	Heart rate: _____ bpm
Blood pressure: _____ mmHg	Respiratory rate: _____ irpm	Oxygen Saturation: _____ %
Weight: _____ kg	Height: _____ cm	Abdominal circumference: _____ cm
BASIC HUMAN NEEDS ASSESSMENT		
Psychobiological Needs		
Oxygenation		
<b>Respiration:</b> <input type="checkbox"/> superficial <input type="checkbox"/> deep <b>Cough:</b> <input type="checkbox"/> dry <input type="checkbox"/> productive <b>Sputum:</b> <input type="checkbox"/> thick <input type="checkbox"/> haemoptic <input type="checkbox"/> purulent <b>Vesicular murmurs</b> <input type="checkbox"/> present <input type="checkbox"/> absent <input type="checkbox"/> decreased, Location: _____ <b>Adventitious noises:</b> <input type="checkbox"/> snoring <input type="checkbox"/> wheezing <input type="checkbox"/> fine crepitus <input type="checkbox"/> coarse crepitus, Location: _____ <input type="checkbox"/> Use of tracheotomy <input type="checkbox"/> Dyspnea <input type="checkbox"/> Intercostal retraction		
Hydration		
<input type="checkbox"/> <b>Ascites</b> <input type="checkbox"/> <b>Edema:</b> <input type="checkbox"/> 1+ <input type="checkbox"/> 2+ <input type="checkbox"/> 3+ <input type="checkbox"/> 4+ Location: _____		
Nutrition		
<input type="checkbox"/> Nausea <input type="checkbox"/> Pyrosis <input type="checkbox"/> Dysphagia <input type="checkbox"/> Gastric reflux <input type="checkbox"/> Eructation <input type="checkbox"/> Splenomegaly <input type="checkbox"/> Hepatomegaly <b>Appetite:</b> <input type="checkbox"/> increased <input type="checkbox"/> decreased <input type="checkbox"/> normal <b>Acceptance of diet:</b> <input type="checkbox"/> total <input type="checkbox"/> partial ( <input type="checkbox"/> 25% <input type="checkbox"/> 50% <input type="checkbox"/> 75%) <input type="checkbox"/> does not accept oral diet <b>Use of probe:</b> <input type="checkbox"/> SNG <input type="checkbox"/> SNE <b>Abdomen:</b> <input type="checkbox"/> distended <input type="checkbox"/> flaccid <input type="checkbox"/> globe-like <input type="checkbox"/> voluminous <input type="checkbox"/> flat <b>Massiveness:</b> <input type="checkbox"/> UPQ <input type="checkbox"/> ULQ <input type="checkbox"/> LLQ <input type="checkbox"/> LRQ <b>Tympanism:</b> <input type="checkbox"/> UPQ <input type="checkbox"/> ULQ <input type="checkbox"/> LLQ <input type="checkbox"/> LRQ <input type="checkbox"/> Food intolerance, type: _____		
Elimination		
<input type="checkbox"/> Anuria <input type="checkbox"/> Oliguria <input type="checkbox"/> Polyuria <input type="checkbox"/> Choluria <input type="checkbox"/> Dysuria <input type="checkbox"/> Pyuria <input type="checkbox"/> Hematuria <input type="checkbox"/> Urinary incontinence <input type="checkbox"/> Urinary retention <input type="checkbox"/> Fecal <input type="checkbox"/> Diaper use incontinence <b>Use of probe:</b> <input type="checkbox"/> SVA <input type="checkbox"/> SVD <input type="checkbox"/> SNG open <input type="checkbox"/> Constipation <input type="checkbox"/> Diarrhea <input type="checkbox"/> Flatulence <input type="checkbox"/> Tenesmus <input type="checkbox"/> Vomiting <b>Urine:</b> <i>color</i> ( <input type="checkbox"/> transparent <input type="checkbox"/> amber <input type="checkbox"/> orange) <i>smell:</i> ( <input type="checkbox"/> characteristic <input type="checkbox"/> stench) <b>Feces:</b> <i>color</i> ( <input type="checkbox"/> brown, <input type="checkbox"/> yellow <input type="checkbox"/> white, <input type="checkbox"/> gray), <input type="checkbox"/> enterorrhagia <input type="checkbox"/> melena, <i>consistency:</i> ( <input type="checkbox"/> soft <input type="checkbox"/> liquid <input type="checkbox"/> hardened), <i>odor:</i> ( <input type="checkbox"/> characteristic <input type="checkbox"/> fetid ), <i>frequency of elimination:</i> _____ times a day		
Sleep and rest		
<b>Sleep and rest:</b> <input type="checkbox"/> satisfactory <input type="checkbox"/> impaired <input type="checkbox"/> Insomnia <input type="checkbox"/> Sleepiness Use of sleep aids, which: _____		

Continue...

Chart 1. Continuation.

Physical activity
<b>Walking:</b> <input type="checkbox"/> does not walk <input type="checkbox"/> alone <input type="checkbox"/> with help ( <input type="checkbox"/> third-party <input type="checkbox"/> cane <input type="checkbox"/> crutches) <input type="checkbox"/> Fatigue <input type="checkbox"/> Muscular atrophy <input type="checkbox"/> Paralysis <input type="checkbox"/> paresthesia <b>Body movement:</b> <input type="checkbox"/> decreased <input type="checkbox"/> increased <b>Motor strength:</b> <input type="checkbox"/> Grade 0 <input type="checkbox"/> Grade 1 <input type="checkbox"/> Grade 2 <input type="checkbox"/> Grade 3 <input type="checkbox"/> Grade 4 <input type="checkbox"/> Grade 5 Segments compromised: _____
Sexuality and reproduction
<input type="checkbox"/> Active sex life <b>Relationship:</b> <input type="checkbox"/> homosexual <input type="checkbox"/> bisexual <input type="checkbox"/> heterosexual <b>Use of contraceptive methods:</b> <input type="checkbox"/> condoms <input type="checkbox"/> pill <input type="checkbox"/> other, which: _____
Body Care
<b>Body hygiene:</b> <input type="checkbox"/> preserved <input type="checkbox"/> impaired <b>Intimate hygiene:</b> <input type="checkbox"/> preserved <input type="checkbox"/> impaired <b>Oral hygiene:</b> <input type="checkbox"/> preserved <input type="checkbox"/> impaired <input type="checkbox"/> Cavities <input type="checkbox"/> Teeth missing <input type="checkbox"/> Use of dental prosthesis <input type="checkbox"/> Halitosis <b>Dependence on self-care:</b> <input type="checkbox"/> total <input type="checkbox"/> partial ( <input type="checkbox"/> bathing <input type="checkbox"/> grooming <input type="checkbox"/> dressing <input type="checkbox"/> eating) <input type="checkbox"/> Seborrhea <input type="checkbox"/> Alopecia, Location: _____
Physical integrity
<b>Skin turgor/skin elasticity:</b> <input type="checkbox"/> preserved <input type="checkbox"/> diminished <input type="checkbox"/> Pruritus <input type="checkbox"/> Jaundice <input type="checkbox"/> Fistula <input type="checkbox"/> lesions, location: _____ <b>Exanthema:</b> ( <input type="checkbox"/> Petechiae <input type="checkbox"/> Macule <input type="checkbox"/> Papule <input type="checkbox"/> Vesicle <input type="checkbox"/> Pustule) <input type="checkbox"/> Crust <b>Stains:</b> <input type="checkbox"/> hyperchromic <input type="checkbox"/> hypochromic <input type="checkbox"/> hyperemia <b>Sensitivity of lesions:</b> <input type="checkbox"/> painful <input type="checkbox"/> tactile <input type="checkbox"/> thermal <b>Pressure injury:</b> <input type="checkbox"/> stage 1 <input type="checkbox"/> stage 2 <input type="checkbox"/> stage 3 <input type="checkbox"/> stage 4 <input type="checkbox"/> not classifiable <input type="checkbox"/> deep tissue <b>Evaluation of wounds:</b> <i>bed</i> ( <input type="checkbox"/> granulation <input type="checkbox"/> fibrin <input type="checkbox"/> necrosis of coagulation <input type="checkbox"/> necrosis of liquefaction) <i>edges</i> ( <input type="checkbox"/> distinct <input type="checkbox"/> indistinct <input type="checkbox"/> macerated) <i>healing phase</i> ( <input type="checkbox"/> inflammatory <input type="checkbox"/> proliferative <input type="checkbox"/> maturation) <i>exudate - coloration</i> ( <input type="checkbox"/> serum <input type="checkbox"/> hematic <input type="checkbox"/> serohematic <input type="checkbox"/> purulent) <i>odor</i> ( <input type="checkbox"/> characteristic <input type="checkbox"/> putrid <input type="checkbox"/> fetid) <i>quantity</i> ( <input type="checkbox"/> little <input type="checkbox"/> moderate <input type="checkbox"/> abundant) <b>Treatment:</b> cleaning: _____ and coverage: _____
Vascular regulation
<b>Pulse:</b> <input type="checkbox"/> full <input type="checkbox"/> thready <b>Peripheral perfusion:</b> <input type="checkbox"/> preserved <input type="checkbox"/> decreased <b>Heart rhythm:</b> <input type="checkbox"/> regular <input type="checkbox"/> irregular <b>Heart sounds:</b> <input type="checkbox"/> normal sounds <input type="checkbox"/> hypophonic <input type="checkbox"/> hyperphonic <i>(auscultated foci:</i> <input type="checkbox"/> lung <input type="checkbox"/> aortic <input type="checkbox"/> tricuspid <input type="checkbox"/> mitral) <input type="checkbox"/> Ecchymosis <input type="checkbox"/> Hematomas <input type="checkbox"/> Cyanosis <b>Tourniquet test:</b> <input type="checkbox"/> positive <input type="checkbox"/> negative <input type="checkbox"/> Blood loss, location: _____
Thermal regulation
<input type="checkbox"/> Cold skin <input type="checkbox"/> Sweaty chills <input type="checkbox"/> Sudoresis ( <input type="checkbox"/> morning <input type="checkbox"/> afternoon <input type="checkbox"/> night)
Neurological regulation
<b>Level of consciousness:</b> <i>score points</i> (ocular [ ] verbal[ ] motor[ ]) <input type="checkbox"/> disorientation <input type="checkbox"/> Agitation <input type="checkbox"/> Seizure crisis <input type="checkbox"/> decortication <b>Pupil assessment:</b> <input type="checkbox"/> photoreactive pupils <input type="checkbox"/> isocoric <input type="checkbox"/> anisocoric <b>Changes in reflexes:</b> <input type="checkbox"/> brachioradialis <input type="checkbox"/> biceps <input type="checkbox"/> triceps <input type="checkbox"/> patellar <b>Graduations:</b> <input type="checkbox"/> 0 <input type="checkbox"/> 1+ <input type="checkbox"/> 2+ <input type="checkbox"/> 3+ <input type="checkbox"/> 4+ <input type="checkbox"/> Photophobia <input type="checkbox"/> Nuchal rigidity <input type="checkbox"/> Brudzinski's sign <input type="checkbox"/> Kernig's sign <input type="checkbox"/> Sardoniac laughter <input type="checkbox"/> trismus <input type="checkbox"/> Opisthotonos

Continue...



Chart 1. Continuation.

<b>Sensory perception</b>
<input type="checkbox"/> Pain, location: _____
<b>Frequency:</b> <input type="checkbox"/> 1 to 5 times a day <input type="checkbox"/> more than 5 times <input type="checkbox"/> continuous
<b>Intensity:</b> <input type="checkbox"/> mild <input type="checkbox"/> moderate <input type="checkbox"/> intense
<b>Body expressions related to pain:</b> <input type="checkbox"/> frowned eyebrows <input type="checkbox"/> protection of an area <input type="checkbox"/> restlessness <input type="checkbox"/> crying
<b>Factors that relieve:</b> <input type="checkbox"/> pharmacological measures <input type="checkbox"/> non-pharmacological measures, which: _____
<b>Factors that increase:</b> <input type="checkbox"/> movement <input type="checkbox"/> walking <input type="checkbox"/> cold <input type="checkbox"/> manipulation during dressing
<b>Physical and environmental safety</b>
<input type="checkbox"/> <b>Use of treated water:</b> <input type="checkbox"/> filtered <input type="checkbox"/> boiled <input type="checkbox"/> chlorinated <input type="checkbox"/> mineral <input type="checkbox"/> from the supply company
<b>Housing conditions:</b> <input type="checkbox"/> masonry house <input type="checkbox"/> mud house <input type="checkbox"/> paved street <input type="checkbox"/> unpaved street
<b>Disposal of garbage:</b> <input type="checkbox"/> collection by the city council <input type="checkbox"/> sanitary landfill <input type="checkbox"/> burning <input type="checkbox"/> in the open air.
<input type="checkbox"/> Habit of hand washing <input type="checkbox"/> Habit of sanitizing food <input type="checkbox"/> Necessity to use masks for transport
<input type="checkbox"/> rearing of animals, which: _____
<input type="checkbox"/> Chemical dependence, type of dependence: _____
<input type="checkbox"/> Alcoholic, since when: _____ frequency of consumption per day: _____
<input type="checkbox"/> Smoker, from when: _____ frequency of consumption per day: _____
<b>Therapy and prevention</b>
<input type="checkbox"/> Allergic reactions <input type="checkbox"/> Side effects <input type="checkbox"/> Adverse effects, description: _____
<input type="checkbox"/> Chronic diseases, description: _____
<input type="checkbox"/> Phlogistic signs of catheter insertion
<input type="checkbox"/> Situations that interfere with treatment, description: _____
<b>Psychosocial Needs</b>
<b>Communication</b>
<input type="checkbox"/> Aphasia <input type="checkbox"/> Dysarthria
<b>Use of language:</b> <input type="checkbox"/> verbal <input type="checkbox"/> non-verbal <input type="checkbox"/> Disconnected answers
<b>Interaction with people:</b> <input type="checkbox"/> little communicative <input type="checkbox"/> communicative <input type="checkbox"/> Writing skills
<b>Gregariousness</b>
<b>Who lives in the house/apt.:</b> <input type="checkbox"/> lives alone <input type="checkbox"/> family <input type="checkbox"/> friends
Number of people with whom he or she lives: [    ]
<input type="checkbox"/> Desire to participate in daily activities
<b>Who most assists in treatment:</b> <input type="checkbox"/> family <input type="checkbox"/> friends
<b>Emotional security</b>
<input type="checkbox"/> Aggressiveness <input type="checkbox"/> Anguish <input type="checkbox"/> Anxiety <input type="checkbox"/> Apathy <input type="checkbox"/> Lack of Affection <input type="checkbox"/> Crying <input type="checkbox"/> Desire to isolate <input type="checkbox"/> Depression
<input type="checkbox"/> Desire to die <input type="checkbox"/> Mood inconsistency <input type="checkbox"/> Irritability <input type="checkbox"/> Feeling of stigma and prejudice <input type="checkbox"/> Sadness
Fear/phobia, description: _____
<b>Self-esteem, self-confidence and self-respect</b>
<input type="checkbox"/> Lack of self-confidence <input type="checkbox"/> Attitudes related to self-image: _____
Perceptions about self-image: _____ Sources of motivation: _____
Positive attributes in themselves: _____
<b>Health education and learning</b>
<b>Level of education:</b> <input type="checkbox"/> illiterate <input type="checkbox"/> elementary school <input type="checkbox"/> high school <input type="checkbox"/> undergraduate <input type="checkbox"/> graduate level
<b>Previous experiences:</b> <input type="checkbox"/> diseases <input type="checkbox"/> surgeries <input type="checkbox"/> treatments, description: _____
<b>Knowledge about health problem:</b> <input type="checkbox"/> none <input type="checkbox"/> diagnosis <input type="checkbox"/> how it was acquired <input type="checkbox"/> form of transmission
<input type="checkbox"/> signs and symptoms <input type="checkbox"/> action of medication
<b>What the family knows about the health problem:</b> <input type="checkbox"/> nothing <input type="checkbox"/> diagnosis <input type="checkbox"/> how it was acquired <input type="checkbox"/> form of transmission
<input type="checkbox"/> signs and symptoms <input type="checkbox"/> action of medication
<b>Psychospiritual Needs</b>
<b>Religiosity and spirituality</b>
<b>Beliefs:</b> <input type="checkbox"/> spiritual <input type="checkbox"/> religious <input type="checkbox"/> cultural <input type="checkbox"/> Need for the presence of a spiritual leader
<b>Religion:</b> <input type="checkbox"/> Catholic <input type="checkbox"/> Evangelical <input type="checkbox"/> Adventist <input type="checkbox"/> Jehovah's Witness <input type="checkbox"/> Candomblé <input type="checkbox"/> Other _____

UPQ: upper right quadrant; ULQ: upper left quadrant; LLQ: lower left quadrant; LRQ: lower right quadrant.

clinical manifestations are specific to diseases that were not identified in the study participants, such as, for example, viral hepatitis and accidental tetanus.

The limits of the study were related to the specificity of the clinical manifestations of hospitalized individuals during the period of data collection. This fact is attributed to the established temporal cut-off, which included rainy months, since seasonality influences the profile of infectious disease hospitalizations. Thus, it is recommended that other clinical validations be prepared using temporal cut-offs with drought, and clinical validation in other contexts and locations, due to the endemicity of infectious diseases.

## CONCLUSION

The empirical indicators of nursing assessment for individuals hospitalized with infectious diseases adequately represented the focus of interest. In addition, there was excellent internal consistency, which indicates that, with these values of reliability, there is greater confidence in the final presentation of the nursing assessment.

Despite recognizing the advance of the digital era in Nursing, it was decided to construct the nursing assessment in the form of a check list. This choice is justified by the incipency of validated instruments for nursing documentation in the area of infectious diseases in the national literature. In addition, the results of this study may support the construction of information technologies through the development of software.

It is important to highlight the relevance of the validation of instruments that support nursing documentation, especially tools for the initial assessment, such as the nursing assessment, which supports the implementation of the other stages of the nursing process. In addition, the use of validated resources provides representativeness of the phenomenon of interest to a set of items. Thus, the findings of this research will strengthen clinical practice, teaching and the scientific community of nursing in infectious diseases.

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