Evaluation of patients' perceptions of the communication behavior of nursing staff: design and validation in the Mexican population

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Original article

ABSTRACT

Background

Nurse-patient communication has been established as a key component of professional healthcare. The present study examines patients' perceptions of the verbal and non-verbal communication skills of nurses. Although the Caring Assessment Tool (CAT) stands among the instruments available to evaluate these communication skills, cultural and educational characteristics limit its direct applicability to the Mexican context.

Objective

The aim of this study was to design and validate an instrument on patient-recorded Nurse Communication Behavior (CECOP, for its acronym in Spanish) based on the Mexican patient's experience.

Method

A first draft of the CECOP was designed based on exploratory interviews with 29 patients. The instrument was validated by independent expert judges and after the elimination of two items, it was used with 150 patients. The validity was assessed by a factor analysis extraction through Principal Component Analysis and Varimax Rotation. Convergent validity was established between the CAT and the CECOP and between the CECOP and numeric scales that evaluate empathy and patient satisfaction.

Results

Construct Validity reduced the CECOP to 10 items in two factors (empathy and respect) with statistically significant KMO (Kaiser-Meyer-Olkin) and Bartlett's Test (p≤.001). The explained variation was 54.58%. The correlation between the CECOP score (10 items) and the CAT was .459. Between the CECOP and the empathy scale and between the CECOP and the satisfaction scale, the correlations were .419 and .495, respectively. All correlations were statistically significant (p≤.001).

Discussion and conclusion

The CECOP can be used to evaluate the human dimension of professional care from the patient perspective and to suggest improvements in nurses' communication.

Key words: Nurse-patient communication, patient perception, nurse-patient relations.

RESUMEN

Antecedentes

La comunicación enfermera-paciente es fundamental para la aplicación de los cuidados en salud. El presente estudio aborda la percepción de pacientes sobre la comunicación verbal y no verbal con sus enfermeras. Entre los instrumentos para su evaluación destaca la Herramienta para la Evaluación del Cuidado (CAT por sus siglas en inglés), pero diferencias culturales y educativas de la población mexicana limitan su aplicabilidad en nuestro contexto.

Objetivo

Diseñar y validar un instrumento sobre la percepción de los pacientes sobre el comportamiento de comunicación de enfermeras (denominado CECOP), en función de lo que observan pacientes mexicanos.

Método

Con base en una entrevista exploratoria a 29 pacientes, se diseñó el CECOP con 25 reactivos, se estableció validez de contenido con jueces expertos (eliminando dos reactivos) y se aplicó a 150 pacientes. Se empleó análisis factorial con método de extracción de análisis de componentes principales y rotación Varimax. Se estableció la validez convergente entre el CECOP y el CAT y entre el CECOP y escalas numéricas que valoraron comprensión empática y satisfacción del paciente.

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Resultados

La validez de constructo lo redujo a diez reactivos en dos factores (empatía y respeto); con Kaiser-Meyer-Olkin (KMO) y prueba de Bartlett estadísticamente significativas (p≤.001). La varianza explicada fue de 54.58%. La correlación entre los puntajes totales del CECOP (10 reactivos) y el CAT fue .459, el CECOP y la escala de comprensión fue .419; el CECOP y la escala de satisfacción, .495; todas, estadísticamente significativas (p≤.001).

Discusión y conclusión

El CECOP permite evaluar los cuidados profesionales en su dimensión humana, desde la percepción de los pacientes, y sugerir propuestas para mejorar la comunicación de las enfermeras.

Palabras clave: Comunicación enfermera-paciente, percepción del paciente, relaciones enfermera-paciente.

BACKGROUND

Nurse-patient communication is the linchpin of nursing care. It is also the means by which they get to know and understand the patient, as well as a source of information to seek individualized care techniques which favor the patient's understanding and acceptance.[1]

Nurse communication* has been studied on the basis of descriptive studies of their personal interaction behaviors with patients. The results show that care implies a certain closeness with the patient, by means of verbal and non-verbal expressions which generate communication that favors the application of care techniques and results in the satisfaction of both patient and nurse.[2-6] Other studies have focused on the design and validation of instruments on nurse-patient interaction through the construction and evaluation of indicators of a person's care. Their content and construct validity have also been sought, as well as a measurement of the patients' satisfaction; an indicator of the quality of nurses' care.[7-13]

Also, changes derived from training designed to improve nurses' communication with patients in variables such as nurses' attitudes, the wellbeing of both, patients' perception of nurses' empathy, feelings of trust, stress reduction, and patients' increase in satisfaction with care have also been analyzed. However, not all of these have achieved statistically significant differences.[14-19] Studies in Mexico are very scarce and based around indicators of quality *humane treatment*,[20,21] with the exception of one article which has reported that training in nurse-patient interaction lies in the wellbeing perceived by the nurse and on some indicators of clinical recovery.[15]

The therapeutic effect of communication by the nurse who cares for the hospitalized patient,[22-26] as well as the possibility of developing communication skills in ongoing training programs for nurses,[22,23,26,27] support the need for better indicators of communication skills which affect the patient recovery and the perceived quality of healthcare services.

º In this article the term nurse or nurses is employed by convention, for being a predominantly female group. Nevertheless, at any time, it is excluding the professionals of infirmary of masculine gender.

In an early stage of the present study, instruments were sought which measured nurse-patient interaction, and which were sufficiently sensitive to assess interventions in communication skills. Initially an instrument designed by Duffy[9,10,27] was selected, made up of 36 items with eight factors, four of which were related to empathy and one with respect. However, during the pilot there were difficulties in understanding the item, very likely due to cultural differences, level of education, or conceptions derived from verbal and non-verbal language in the Mexican context. On the other hand, the length of the instrument may also have been a factor in tiring the patients. The above brought about the need to design and validate an instrument of nurses' verbal and non-verbal communication behaviors observed by patients (called the CECOP) in the cultural context of Mexico.

The preparation of the instrument was guided by the creation of a catalog of behaviors described by López and Torres.[28] The authors proposed a systematic procedure in designing this type of instrument, as well as warning of the difficulty in identifying and defining the categories of behaviors, definition of constructs and components, definition of the study sample within the framework of the population of reference, determining the sample size, the narrative recording of behaviors, and the characteristics of episodes and scenarios.

The present study considered the procedure guidelines referred to by the authors to obtain the categories by means of patient interviews, due to the impossibility of making direct observations of the nurse-patient interaction in participating institutions.

In Mexico, nurse-patient interaction has been measured through the indicator of *humane treatment*[20,21] proposed in assessing the quality of Health Secretary public health services,[29] which can be complemented by other indicators to identify specific skills with training capacity to improve the quality of services in terms of personal interaction. As such, the design of an instrument that provides information for the operation of strategies that increase the quality of services may be a useful contribution to Mexican hospitals.

The construct that motivates the design and validation of this instrument is based on the following theoretical contexts: 1. Interpersonal communication has two forms of expression: verbal and non-verbal.[24,30,31] 2. Communication

or interaction between nurse and patient has a therapeutic effect.[22-26] 3. Empathy and respect are conditions which facilitate the therapeutic relationship and the patient's collaboration. The first is defined as the ability to correctly understand what the other person is experiencing, not just by understanding their words, but also the feelings and emotions behind them, precisely evaluating their concerns and problems, and thereby gaining their trust. As such, respect implies positive acceptance, availability of both time and energy, and seeing the patient as a unique person with qualities and resources that may be blocked by their illness, their education, or which haven't been stimulated.[24,30] Finally, 4. Listening and effective communication are fundamental skills for a good therapeutic relationship.[32]

The use of the construct of "nurse-patient communication" is based on the therapeutic effect of the interaction which occurs when the nurse cares for or treats the hospitalized patient,[24,26] which takes place outside of the patient's usual environment.[33,34] The selection of the subsets of analysis or components of "empathy" (understanding) and "respect" is based on the observations made by patients of the verbal and non-verbal forms of communication by the nurses treating them. Relevance is as the patient assigns during their stay in hospital - it seeks to define behaviors that may be the specific object of treatment.

METHOD

Based on the guidelines in López and Torres' catalog,[28] as well as the theoretical assumptions related to the process of nurse-patient communication, we started designing an instrument for nurse behavior around their ways of communicating with the hospitalized patient.

A guide was prepared for a semi-structured interview of patients who met the following criteria: adults, conscious, oriented, no behavioral alterations, with chronic-degenerative illnesses, hospitalized in a third level public healthcare institution in the urban area of Mexico City receiving service users who are not beneficiaries of local and national welfare. The guide focused on the conditions which facilitate the therapeutic relationship: empathy and respect,[30] examined starting from forms of verbal and non-verbal communication. It was made up of five sections:

1. The first section explored the patient's general perception of the Understanding (Empathy) and Respect they received from the nurses caring for them. Four items were prepared: the first needed a binary response referring to the presence or absence of said behavior, and the second scored the quality attributed to the behavior in item by means of a visual analogous scale with values from. The questions were: Do you feel understood by the nurses treating you?, with a yes or no response; How would you rate the understanding you have received?

With a zero to ten response (from less to more); Do you feel respected by the nurses treating you?, with a yes or no response; and How would you rate the respect you have received?, with a response from zero to 10 (low to high).

2. The second section corresponded to questions: What makes you think that the nurse understands you?, What good behaviors do you see in them?, What makes you think that the nurse doesn't understand you?, What poor behaviors do you see in them?, What makes you think that the nurse respects you?, What good behaviors do you see in them?, What makes you think that the nurse doesn't respect you? and What poor behaviors do you see in them?

3. In order to avoid the exploration not flowing naturally, a list was prepared with types of verbal and non-verbal communication involved in empathy (understanding) and respect, including eye contact, physical contact, body posture, body movements, tone of voice, type of vocabulary, moments of silence during the conversation, supportive words, facial expressions, use of praise, a listening attitude, answering patient's questions, and giving information about the illness.

With the aim of facilitating the patient with identifying and recording the behavioral aspects of the care they received, the types of communication were represented using examples to allow the patient to place observable behaviors and thereby result in the particular expression of something they related to the content of the open question. To avoid inducing or biasing responses, special care was taken so that the examples of behavior were expressed neutrally, without positive or negative implications. Textual responses given by the patients were noted in all cases.

4. The fourth section gave an opportunity to make any comments or suggestions for nurses to improve the treatment or care of hospitalized patients, with the aim of gathering information which could feed back behavioral aspects related to interpersonal communication.

5. Finally, sociodemographic data was collected such as age, gender, civil status, and education, with the aim of characterizing the population which was the object of this diagnostic exploration.

Procedure

Based on the guide, and subject to evaluation by the Research and Ethics Committee of the Hospital Institution selected, and the consent of the patients (in accordance with the Regulations of the General Law on Health in terms of health research, in the Second Title of Ethical Aspects for research on human beings,[17,20,23] 16 in-depth interviews were conducted with eight male and eight female adult patients. In accordance with the application proposal, the sample

size responded to the criteria of repeated findings, in other words, when the information from the interviews no longer provides different information.[35] The time per interview was 30-45 minutes.

Validation

Responses were categorized according to their content, and were converted into questions. The questions obtained were submitted to a second pilot test with 13 more patients from the same hospital, with the aim of verifying their clarity, making the necessary adjustments, and encouraging patient trust.

The instrument obtained was subjected to judgment by six experts with the aim of establishing the content validity per question (CVR) and general content validity (CVI) according to Lawshe[36] and Tristán.[37] The analysis and validation was carried out by six experts who met the following criteria: specialists in psychology with a focus on cognitive behavioral therapy (CBT) and training in social skills, nurses, or having experience with nurses.

For the construct validity, a pilot test of the instrument was run with 150 patients who were adult, conscious, with no behavioral alterations, with chronic-degenerative illnesses, and hospitalized in a third level public healthcare institution; similar to the initial explorations. Duffy's[9] CAT instrument (*Caring Assessment Tool*) was also applied, with theoretical and empirical consistency, structured with eight factors and 36 items (post analysis of primary components with Varimax and Equamax rotation). Four factors were related with empathy, and one with respect.[9]

In order to identify the weight of the patient's emotional state as a variable related to personal interaction, the HADS, or *Hospital Anxiety and Depression Scale* was applied. Designed by Zigmond and Snaith, this evaluates physically ill hospitalized patients with 14 items; seven for anxiety and seven for depression (through scores from 0 to 3). The instrument was used and validated in Mexico by Robles,[38] who reported coefficients of internal consistency (Cronbach's alpha) of 0.81 for anxiety and 0.82 for depression, with a coefficient of correlation for the subscale of anxiety with the State-Trait Anxiety Scale of 0.71 and a coefficient of correlation for the subscale of depression with the Beck depression Inventory of 0.74. In these, the highest number of points was 21, and scores over 10 indicate morbidity. Scores between eight and 10 are interpreted as borderline, and those under eight are interpreted as normal.

The data was analyzed with the following procedures: *cluster* dendrograms to identify groupings of items, Spearman's correlation to obtain concurrent validity between instruments, and factor analysis, with the aim of supporting the reduction of items and construct validity; all of this was done using the R Psych and SPSS Version 15 programs for Windows.

RESULTS

Sample description: the average age of the group studied was 45.1 (SD 14.46), with a mode of 48. In terms of gender, 57.3% were women and the rest men. In terms of civil status, 77.7% were married. Almost a third only had an elementary or incomplete elementary level of education (29.6%), and 33.8% had complete or incomplete secondary studies. Some 20.7% had high school or technical-professional education, and 15.9% had degrees or higher levels of education.

The instrument CECOP was made up of 25 items representing observable behaviors, which are responded to on a scale of five Likert-type response options ranging from *always* to *never*. Nurses' behaviors observed by patients during interactions included some simple questions about a non-verbal behavior, such as *smiling*. Other questions referred to relatively complex behaviors made up of verbal and non-verbal behaviors, such as *they indulge me*.

The subsequent tests applied to 13 patients during the second pilot led to suggested modifications in the drafting of some of the questions. By way of example, in the first test, there were textual phrases such as: a) "*they criticize you*", which was altered to say "*they respect your way of thinking*"; b) "*they give orders without explanations*", which was changed for "*they give explanations about the treatment they carry out*"; and c) "*they tell you off when you don't want to eat*", was altered to read "*they get irritated when you don't want to eat*".

The responses by the expert judges were analyzed with the coefficient of CVI which resulted in .83, and with the coefficient of CVR which ranged between .50 and 1.00. To conform to the criteria suggested by Tristán,[37] according to which, items scored with coefficients less than .58 are eliminated, two items were excluded: "*they seem bothered by having to touch your skin directly*" and "*they seem unsettled when they have a lot of work*", which had values of .50.

Some 23 items were retained; their CVI was .86. The items maintained heterogeneous characteristics around simplicity or complexity, according to the classification made by Caballo[39] in terms of instruments which measure social skills.

After the expert content analysis came the test of the instrument to establish its construct validity through applying it to 150 hospitalized patients (table 1).

Cluster analysis was used to identify the grouping of the items, maintaining the conceptual congruence of the *cluster*. Next came the progressive elimination of items which fell into any of the following criteria: factorial loads less than .50, isolated in the *clusters*, with correlations lower than .40 and with CVR lower than .83 (figure 1).

Ten items were maintained, still considering their structure and conceptual aspect.[24,30,32] Later, a factor analysis was conducted to examine the structure of the instrument with the method of extraction of analysis of primary components with Varimax rotation. The determining value of the matrix

Table 1. Instrument: CECOP (23 items)

The nurses...	Always or almost always	Very often	Sometimes	Occasionally	Rarely or never
1. Smile at you.					
2. Are irritated when you don't want to eat.*					
3. Are irritated when you don't want to bathe.*					
4. Get irritated when you accidentally wet the bed.					
5. Come close to you to say hello.*					
6. Use friendly words when talking to you.					
7. Find time to talk to you.					
8. Call you by your name.					
9. Use "technical" words that you don't know.					
10. Use cheerful words to motivate you.*					
11. Introduce themselves by name.					
12. Take a long time to bring you something when you ask for it.					
13. Joke around with you to build confidence.					
14. Explain the care they are providing for you.*					
15. Come across as calm.*					
16. Talk to you as they are taking your blood pressure.*					
17. Respect your way of thinking.					
18. Talk to you when they are giving you your medication.*					
19. Listen to you although they have a lot of work.*					
20. Get irritated when you complain about something.					
21. Indulge you ("lo apapachan") to cheer you up.*					
22. Explain the reasons for the treatment you are given.					
23. Ask you how you're feeling.					

* Items which also appear in the brief CECOP (10 items).

of correlations was .30, p≤.001, which indicates that the variables functioned in a related way. The KMO measure of sampling adequacy was .791, p≤.001, which indicates that there is homogeneity between the variables of each factor and heterogeneity between variables of other factors. Finally, the Bartlett test also showed statistical significance (p≤.001), which reveals that the factorial model is adequate to explain the data.

The results obtained produced two factors with an explained variance of 54.58%. The first, with eight items related to empathy or empathic understanding, explores physical closeness, communication during technical procedures (such as recording vital signs and administering medication), listening, explaining the care being given, and showing cheerfulness, trustworthiness, and care by the nurse to the patient.

The second factor was made up of two items related to respect which explore nurses' behavior when dealing with patients' resistance to complying with habits related to biological functions, such as eating and going to the bathroom. Although this factor only has two items, their factorial load was very high and showed an independent identity (table 2).

The instrument included three more items that look into patients' impressions of the understanding and respect showed by nurses. These aspects were scored with analogous-visual scales from 1-10. A similar scale also measured the level of satisfaction experienced by patients when they receive nursing care during their stay in hospital.

Convergent validity was examined in the two versions of the CECOP, both the extended (23 items) and brief versions (10 items), with the aim of keeping both instruments to develop later studies with wider and more diverse populations.

The convergent analysis by means of the correlation of total CECOP (with 23 items) and CAT (2007) scores, which assess personal interaction, showed a Spearman's correlation of .544 (p≤.001). The correlation between the total CE-
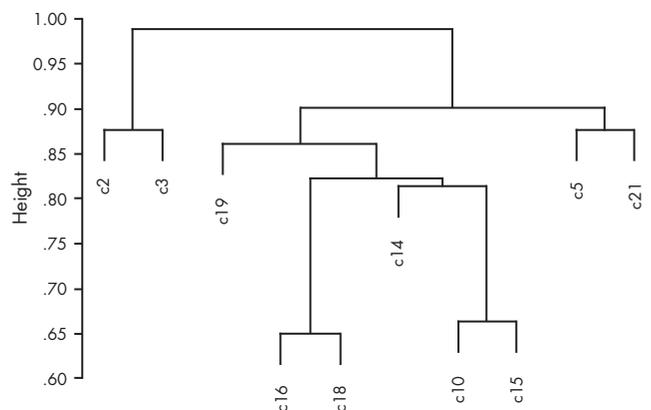
Figure 1. *Dendogram.* Image of the grouping of the questions which make up the instrument with 23 items; c2 and c3 correspond to the factor of respect, and the rest to empathy. The missing questions did not form clusters.

Table 2. Factorial loads of the retained items

Factor	Factor load
Factor 1 Empathy	
Item 16	0.748
Item 15	0.703
Item 10	0.689
Item 18	0.671
Item 14	0.565
Item 19	0.540
Item 5	0.516
Item 21	0.512
Factor 2 Respect	
Item 2	0.825
Item 3	0.810

COP scores and the visual analogous scale on understanding was .457 (p≤.001), while the correlation of the CECOP scores with the respect scale was .277 (p≤.001). Finally, the correlation of the CECOP-23 with the satisfaction scale was .520 (p≤.001). It was not possible to establish the divergent correlation between the CECOP and the HADS due to the low prevalence of both factors in the group studied.

The convergent analysis through correlation of the brief, version of the CECOP with the CAT was .459 (p≤.001). The correlation of the CECOP-10 with the visual analogous understanding scale was .419 (p≤.001). There was no significant correlation with the respect scale. The correlation of the CECOP-10 with the visual analogous satisfaction scale was .495 (p≤.001).

The level of internal consistency of the extended CECOP (23 items) was .812; the reduced scale of 10 items kept a high coefficient of Cronbach's alpha (.801); the factor 1 items (empathic understanding) showed a Cronbach's alpha of .817, and the factor 2 items (respect) showed .780.

DISCUSSION AND CONCLUSION

The design and validation of an instrument stemming from exploration with hospitalized patients offers a tool to allow measurements that are more aligned with the national reality, in that it comes from patient observations of nurses' behavior and the effect it has on them as an inpatient.

The selection of constructs such as empathic understanding and respect is reinforced in the thesis by Cormier and Cormier,[30] who consider that these two elements are facilitators in the therapeutic relationship. The role of nurses is based on caring treatment of predominantly biological needs and technical care of alterations caused by illnesses and conditions, and both have their foundations on human care or interpersonal relationships.

Even when there were differences between the values of the correlations established with the brief and extended CECOP, just as with Cronbach's alpha, the differences are small, and the brief version has a better factorial structure. It also offers advantages due to its length, as it can be applied quickly in research studies with broad samples or in those where other variables are also evaluated.

Patient interaction is fundamental in the performance of the profession, and indeed it is the nucleus of providing care, bringing together biological, technical, and caring elements.[26] It is also the source of information to evaluate the help required to individually tailor the application of technical and personal care.[1,15]

These findings stem from a context in which the majority of instruments are translations, or have little sensitivity to the conditions which are relevant to a patient hospitalized in Mexico, due to which they usually show *ceiling effects* in evaluating healthcare services.[29,40] During the present study, when the translated Duffy instrument[9] was used, for example, participants were observed to tire and they had difficulty in understanding certain questions.

The patient interview procedure during their hospitalization, and validation by experts allowed the inclusion of questions which approached elements of quality in the interpersonal relationship as indicators of understanding and respect, both from the theoretical point of view as well as starting from the language and perception of Mexican patients. This was made possible by using precision in drafting the questions with words used by patients themselves. It should be noted that in some cases, the patients had difficulty in recognizing that unfavorable attitudes towards them by nurses was possible - a fact which suggests a predominance of positive experiences, the influence of expectations, or social desirability.[41]

The final gathering of the factors was gradual and staggered, and was supported by various statistical tests. The factors obtained showed congruence with the concepts selected[24,30] and with the validation of content by the expert judges, with the exception of one question. This was classified as respect and the factor analysis derived from the 150 surveys of hospitalized patients classified it under empathic understanding. This difference could be explained by the interaction that takes place between the two facilitating elements of the therapeutic relationship.[30]

The eight items kept in factor 1 (empathy or empathic understanding) were positively correlated with the general evaluation of the analogous visual scale on understanding and patient satisfaction. This convergent validity is another parameter which supports the quality of the CECOP's measurement of the interpersonal relationship.

The two items grouped in factor 2, related to respect or positive acceptance, produced important loads, showed high correlations, and were clearly isolated in the dendrogram. However, it had a modest correlation with the validity of the analogous visual scale on respect.

The above denotes the need to seek more clearly recognizable behaviors as expressions of respect. On the other hand, the questions on empathy were varied and identifi-

able, which may denote an important cultural difference in its expression in Mexico. For this reason, instruments designed in other cultures often show insensitivity or are not very clear.

The positive correlation between the total scores on the CECOP and the CAT,[9] applied simultaneously to the 150 patients, showed another positive side of the validation. Both instruments were designed to measure nurse-patient interaction. In the case of the CAT, in its first applications, eight factors were obtained in 36 items, 9 of which four referred to empathic understanding and one to respect. In later studies, 26 items were retained and only one factor was found to be generally identified as nurse-patient interaction.[10]

With authorization by the author, the application of the CAT in Mexico adhered to the recommendations of the World Health Organization on the procedures for adapting and translating instruments. Although this application in particular did not completely respond to the central proposal of the present study, there was a parallel measurement of some constructs between the CAT and the CECOP. In both instruments, the majority of patients tended to score nurse interaction positively.

Based on the factor analysis of the CECOP, with 23 items distributed in the dimensions of empathic understanding and respect, greater retention was observed in those oriented towards empathic understanding, conceivably more relevant, or at least more identifiable. This highlights the importance of training nurses in communication skills such as listening, responding to others' feelings, expressing affection, and expressing encouragement or cheerfulness, among others.[42] Skills can be improved through training and awareness programs, and it is hoped that in being practiced by the nurses, these skills will increase the scores obtained on the CECOP.

As a primary limitation, it is recognized that even though the CECOP offers useful values, it needs to be applied to larger and more diverse samples in order to improve its usefulness. It will also be important to consider new questions which firm up evaluation of the factor of respect.

Empathic understanding was the most notable factor in this population. Culturally, this is about relevant behaviors for treatment and care in Mexicans and in patients from similar cultures with characteristics analogous to the sample of this study. Consistency in culturally-rooted terms such as *apapacho* [translated here as 'indulge'] is notable, which is not seen in other instruments.

As such, evaluation of the human dimension of professional care is possible from the point of view of the patients, with the aim of identifying elements that can be improved and interventions that provide conditions for clinical recovery, stimulated by providing humane treatment that gives comfort and favors communication between patients and nurses.

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