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Puggina, Ana Cláudia; Paes da Silva, Maria Júlia

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# Interpersonal Communication Competence Scale: Brazilian translation, validation and cultural adaptation

Validação e adaptação cultural para o português da  
*Interpersonal Communication Competence Scale*

Ana Cláudia Puggina<sup>1,3</sup>

Maria Júlia Paes da Silva<sup>2</sup>

## Keywords

Communication; Validation studies;  
Nursing research, Nursing, practical;  
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## Descritores

Comunicação; Estudos de validação;  
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## Abstract

**Objective:** To validate and culturally adapt the Interpersonal Communication Competence Scale to Brazilian Portuguese, bringing about a new tool that can be used by healthcare professionals.

**Methods:** A descriptive and cross-sectional validation study using a quantitative and qualitative approach. Factor analysis, principal components analysis with flag 40 and an evaluation of internal correlation through Cronbach's alpha were performed.

**Results:** The final version of the scale was named *Escala de Competência em Comunicação Interpessoal* and consisted of 17 items and five domains. The Cronbach's alpha across the five domains was 0.71 and between the items it was 0.82.

**Conclusion:** The scale was validated and adapted in relation to the content and the construct with a good correlation index between the domains and items.

## Resumo

**Objetivo:** Validar e adaptar culturalmente a *Interpersonal Communication Competence Scale* para o português, trazendo uma nova ferramenta que possa ser utilizada pelos profissionais da área da saúde.

**Métodos:** Estudo de validação descritivo e transversal com abordagem quanti-qualitativa. Foi realizada análise fatorial, análise de componentes principais com flag de 40 e avaliação da correlação interna por meio do Alpha de Cronbach.

**Resultados:** A versão final da escala foi nomeada *Escala de Competência em Comunicação Interpessoal* e compôs-se por 17 itens e 5 domínios. O Alpha de Cronbach entre os cinco domínios foi de 0,71 e entre os itens foi de 0,82.

**Conclusão:** A escala foi validada e adaptada em relação ao conteúdo e ao constructo com um bom índice de correlação entre os domínios e os itens.

## Corresponding author

Ana Cláudia Puggina  
Tereza Cristina square, 88, Guarulhos,  
SP, Brazil. Zip Code: 07023-070  
apuggina@prof.ung.br

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<sup>1</sup>Faculdade de Medicina de Jundiaí, Jundiaí, SP, Brazil.

<sup>2</sup>Escola de Enfermagem, Universidade de São Paulo, São Paulo, SP, Brazil.

<sup>3</sup>Universidade de Guarulhos, Guarulhos, SP, Brazil.

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## Introduction

The *Interpersonal Communication Competence Scale* is a self-administered instrument that assesses ten dimensions of interpersonal communication competence (self-disclosure, empathy, social relaxation, assertiveness, altercentrism, interaction management, expressiveness, supportiveness, immediacy, and environmental control).<sup>(1)</sup>

Competence is the ability that an individual has to express a value judgment about something that is well known; the sum total of knowledge or skills. Interpersonal competence skills are important for effective communication and can be improved through instruction and changed over time.<sup>(1)</sup>

The analysis of internal reliability of the scale with 60 items obtained a total alpha coefficient of 0.77 and items with low correlations were removed. The scale was reduced to 30 items with a total alpha coefficient of 0.86 applied to 247 students. Items must be applied randomly and renumbered without the names of the skills. The scale used in the original was a five-point Likert scale.<sup>(1)</sup>

The scale has 24 positive and six negative (reverse code) items. The reverse codes need to be recoded before the final score. Thus, for example, in an item with a reverse code, a rating of five would receive a rating of one on the final score (4=2, 3=3, 2=4, 1=5), and so on. The total score ranges from 30 to 150, with an average of 90 points.<sup>(1)</sup>

Considering the need for assessment tools in interpersonal communication and the limited availability of these instruments in the Portuguese language, this study aimed to validate and culturally adapt the *Interpersonal Communication Competence Scale* to Brazilian Portuguese, bringing about a new tool that can be used by nursing professionals.

## Methods

This is a descriptive and cross-sectional validation study developed in two phases: the first phase included translating the instrument, which was performed by English language and communication experts, who also formed the panel of judges, and a

qualitative evaluation of the pre-test version of the scale, performed by 13 professors; in the second phase, 177 undergraduate nursing students quantitatively answered the pre-final test of the scale.

Cultural adaptation was a process that comprised five internationally recommended stages, in which the evaluation of semantic, idiomatic, cultural and conceptual equivalences between the original and translated versions was performed, searching for content validity and the construct of the instrument.<sup>(2)</sup>

In the first stage, two independent bilingual translators, one who knew about the scale subject and another who did not know translated the scale, producing translations T1 and T2. In the second stage, a third bilingual professional, knowledgeable about Brazilian culture and proficient in Brazilian Portuguese as well as in English, composed a final version (synthesis T12) of the two translations working with the original instrument and the two initial translations.

In the third stage, the participating translators had been born and educated in the country of the original scale, i.e., they were both North American. They had no access to the original instrument at this point, and only worked with the T12 synthesis to develop the back-translations (BT1 and BT2).

In the fourth stage, a panel of judges composed of nine bilingual members (three translators, one linguist, one undergraduate student and four specialists in communication) reviewed all the versions. The author of the scale made important contributions based on the back-translations.

In the panel of judges, members received all versions of the scale and were asked to point out any identified issues and propose solutions. They also received the instructions for the application of the scale, as well as guidelines for calculating the score. In this stage, the judges evaluated the semantic, idiomatic, conceptual and cultural equivalences of the instrument and proposed the pre-test version.

In the fifth stage, the pre-test version was evaluated qualitatively and the pre-final version was evaluated quantitatively. In the pretest, 13

professors answered the scale items and were then interviewed to determine whether there was any difficulty in understanding the items. The interviews were conducted using the following guiding questions: (1) In general, did you have any difficulty in understanding and completing the items in the scale?; (2) Could you point out and justify which items you had more difficulty with or had to read more than once to understand what was being proposed?; and (3) What did you think of the scale applied? The qualitative data were transcribed and analyzed individually in order to improve the understanding of the instrument. The pre-final version was drafted.

The calculation of the minimum sample for validation of the instrument was obtained following the recommended criterion of five subjects per item from the original scale being validated, i.e., it should have at least 150 participants.<sup>(3)</sup>

To confirm the domains of the pre-final version, a confirmatory factor analysis was performed, with the selection criterion for the amount of domains being the method of eigenvalue > 1, and the selection of variables was the flag 40. As the fields were not confirmed, a new selection of variables with a study of the correlation by Cronbach's Alpha ( $\alpha$ ) and by the method of principal component analysis with a flag 40 was performed. Next, the selected variables were studied again by comparative factorial analysis with determination of the amount of domains using the same method (eigenvalue) and of variables by flag 40, and internal consistency through  $\alpha$ .

The study development followed the national and international standards of ethics in human research.

## Results

Regarding the convenience sample of the 177 undergraduate nursing students, the mean age was 21.51 (sd  $\pm$  3.59) years, and the majority of participants were female (n=164, 92.66%), single (n=173, 97.74%) and had never taken a communication course (n=165, 93.22%). As to the year of the nurs-

ing students' graduation studies, 33.90% (n=60) of students were attending the third year, 27.12% (n=48) the first year, 23.16% (n=41) the second year and 15.82% (n=28) were in their fourth year of studies.

In the construct validation of the instrument, the  $\alpha$  of the 30 items of the scale was 0.80; however, in the factor analysis, the domains were not confirmed from the original scale and four items were eliminated due to low correlation; even so, the  $\alpha$  between the domains was 0.64. Therefore, the analysis was performed considering the principal components with flag 40. Accordingly, 13 items were deleted. A new factor analysis of the remaining 17 items revealed 5 domains with an  $\alpha$  of 0.71 between them and an  $\alpha$  of 0.82 between the items.

For the 19 missing data in the instrument, the imputation method of missing data was assumed for the greatest absolute frequency of each question between the possible responses.

The final version of the scale was named *Escala de Competência em Comunicação Interpessoal* and consisted of 17 items and five domains. The  $\alpha$  for each domain and their respective items are presented in table 1. Considering the  $\alpha$  in each domain, we do not recommend the use of domains as subscales.

**Table 1.** Domains, items and Cronbach's Alpha

Domains	Items	$\alpha$
Environmental control	It is difficult to find the right words to express myself. I accomplish my communication goals. I can persuade others to my position. I express myself well verbally..	0.71
Self-disclosure	Others would describe me as warm. I reveal how I feel to others. I tell people when I feel close to them. Other people think that I understand them.	0.69
Assertiveness	When I've been wronged, I confront the person who wronged me. I take charge of conversations I'm in by negotiating what topics we talk about. I have trouble standing up for myself. I stand up for my rights.	0.68
Interaction management	I let others know that I understand what they say. In conversations with friends, I perceive not only what they say, but also what they do not say	0.59
Immediacy	I allow friends to see who I really am. My friends truly believe that I care about them. I try to look others in the eye when I speak with them.	0.53

( $\alpha$ ) Cronbach's Alpha

## Discussion

The purpose of the validated scale is to assess competence in interpersonal communication. Competence in interpersonal communication is understood as an ability or skill that an individual has in being able to exchange information between two or more people, expressing themselves and interpreting other's communication codes, which may be verbal or non-verbal.

Interpersonal competence can be defined as the ability to relate effectively with others, as appropriate to the needs of each one and the requirements of the situation. It is a process that achieves the goal of communicators, it assumes a basic knowledge of communication, verbal and non-verbal awareness in interactions, clarity and objectivity, as well as promoting self-knowledge.<sup>(3)</sup>

An individual's interpersonal communication skills can be influenced by the environment and situation in which the interaction occurs, as well as the individual's ability to demonstrate his or her feelings, be proactive, give feedback and be available in the relationship.

The Environmental Control domain demonstrates the ability of the person in being suited to the environment to achieve their goals. If this suitability exists, the individual is able to express himself/herself more appropriately and persuade others finding the words and more appropriate behavior in that environment and situation.

This dimension implicitly shows the influence of space and environment in the individuals' expression, perception and persuasion of individuals. The spaces are constructed by individuals, and the individuals are shaped by the space and environment around them, i.e., the better the adaptability of the individual to an environment, the better and faster this individual is able to communicate effectively.<sup>(4)</sup>

The Self-Disclosure domain presents a person's ability to demonstrate their thoughts, ideas and feelings through communication. Only through self-disclosure can interpersonal relationships (not just "contacts") be established, and this should be appropriate for the person and the situation.

Behaviors, such as positive nodding, direct and frequent eye-contact, pushing the chest out, touching when appropriate, besides correct and empathetic words, showing acceptance, affection, closeness and trust, as well as the feelings of the individual in the interaction.<sup>(4-6)</sup>

The Assertiveness domain involves the proactive ability to stand for their rights without denying the rights of others, demonstrating security, decision and firmness in attitudes and words. A proactive person thinks and acts in advance defending his or her view in arguments, facts and reasons. Being assertive also involves the way people interpret events in their lives, attributing life events to themselves could facilitate assertive behavior.

The Interaction Management domain involves the issue of providing feedback in a bidirectional manner, both in terms of demonstrating comprehension and in relation to perceiving what others feel through non-verbal communication. Interpersonal relationships are dynamic and bidirectional, with individuals constantly interacting by giving and receiving feedback.

Feedback is the information that the sender obtains from the receiver's reaction to their message, and it is used to evaluate the results of the transmission. If the person is attentive to the feedback of others, they will be able to understand what the other person is feeling, and to adequately demonstrate their own feelings.

Realizing what people feel without them saying constitutes an important communication skill, because people rarely use words to tell us exactly how they feel. The ability to capture these subtle communications relies on basic skills, primarily self perception and self-control.<sup>(7)</sup>

The Immediacy domain indicates that people who are available can demonstrate to others that they are accessible and open to interpersonal communication. To deepen a relationship, a certain degree of willingness on both sides is necessary, as there is a need for exposure as well as perception of and attention to others.

In this dimension, the importance of looking at the process of communication appears. To show oneself as available and paying attention, the indi-



vidual needs, at least, to look at the other person. Looking can be considered a person's first sign of being interested.<sup>(4)</sup>

The measurement scale that should be used is the same as the original scale. To obtain the total score, the items "*I have trouble defending myself*" and "*It's hard to find the right words to express myself*" are reverse coded and need to be recoded. The total score ranges from 17 to 35. The higher the score, the higher the skill in interpersonal communication. Items must be randomly applied.

The panel of judges made a general consideration of the difficulty of thinking about the competence in interpersonal communication, without a specific context; therefore, it is suggested that the research participant think of a situation of interaction when answering the questionnaire. When collecting data with students, they were asked to focus on the interaction between themselves in the classroom environment. The scale can be used to analyze competence in interpersonal communication in different interactions and situations, such as between classmates, between co-workers, between family members, between teacher and student, and between professional and patient.

Interpersonal communication is a complex issue and difficult to assess, and there are few instruments that have been validated and adapted to Brazilian culture.<sup>(8-10)</sup>

Furthermore, there are a number of limitations in instruments that aim at evaluating the communication; due to their not offering an exhaustive review of the communicative aspects as well as to their not aiming at evaluating the factors that can directly or indirectly influence interpersonal communication, such as cognitive, and attention deficits, impaired visual and spatial perception, as well as memory.<sup>(10)</sup> However, having a direct and objective instrument for assessing interpersonal communication in different contexts may indicate critical points in relationships.

Validity can be understood as the degree to which instruments measure what they should be measuring, i.e., the results of a measurement cor-

respond to the true state of the phenomenon being measured. The validity of an instrument can be obtained at three levels of evidence: validity of content, construct and criterion.<sup>(11)</sup>

Content validity refers to the degree to which an instrument reflects a specific content domain; construct validity refers to how the measurement is related internally in a consistent and reliable manner; criterion validity refers to the degree to which the instrument, compared to other external criteria, measures the same concept.<sup>(11)</sup>

In this study, content validity was obtained by comparing the translations and back-translations, as well as with the consensus of the panel of judges. Construct validity was obtained using the  $\alpha$ , factor analysis and principal component analysis, which is probably considered the most important stage from the scientific point of view. Criterion validity was not possible to be obtained due to the lack of instruments that measure the studied variable.

Factor Analysis and Principal Component Analysis are statistical procedures that have been widely used in the preparation and validation of psychological instruments, and can be conceptualized as statistical techniques aimed at representing a multivariate random process through the creation of new variables, derived from the original variables, in fewer number and which best represent a group.<sup>(12,13)</sup>

Factor analysis of the *Escala de Competência em Comunicação Interpessoal* has not confirmed the areas proposed in the original scale, probably because the domains of the original scale were produced by a semantic and subjective approach and not by statistical methods.

The  $\alpha$ , measures the covariance degree of a number of items and ranges from 0 to 1, the higher the score, the higher the reliability of the instrument. Acceptable reliability is assigned to values minimum value  $\geq 0.7$ . An instrument's reliability refers to the degree to which it produces consistent and coherent results from the scores obtained.

To ensure reliability, the number of items on the scale was reduced from 30 to 17, with a good correlation index ( $\alpha = 0.71$ ) among the five domains. Despite this large reduction of items, because of the

low initial correlation between the domains, the validated scale meets the basic requirements for competent interpersonal communication skills and addresses skills related to both the expression and perception of communication signals in relationships.

The *Escala de Competência em Comunicação Interpessoal* can be used to assess competence in interpersonal communication as well as to strengthen these communication skills in groups or individuals, as they can be improved through education and modified over time. Furthermore, this instrument can be used to improve understanding of the communication process.

Interpersonal communication is complex and this instrument may be important in different situations and provide guidelines for individual or group interventions with the aim of improving relationships and well-being in that context, as well as reflecting on the theme from an educational perspective. Nevertheless, to assess interpersonal communication as a whole, using different tools and techniques may be necessary, such as observing interactions, group dynamics, recording and interpreting nonverbal communication etc.

## Conclusion

The *Escala de Competência em Comunicação Interpessoal* was validated and adapted in relation to the content and the construct with a good correlation index between the domains and items.

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## Collaborations

Puggina AC contributed to the conception and design, execution of the research, analysis and interpretation of the data, drafting of the article and the critical review of the relevant intellectual content. Silva MJ contributed to the critical review of the relevant intellectual content and the final approval of the version to be published.

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## Appendix - Validated and adapted version of the ICCS scale to Brazilian Portuguese

### Escala de Competência EM Comunicação Interpessoal (ECI)

**INSTRUÇÕES:** aqui estão algumas afirmações sobre como as pessoas interagem entre si. Para cada afirmação, circule a resposta que melhor reflete SUA comunicação com os outros. Seja honesto em suas respostas e reflita, com muito cuidado, sobre o seu comportamento de comunicação. Marque só uma alternativa em cada item. Não deixe nenhuma questão em branco.

Especifique a interação que será analisada:

- ( ) entre colegas de classe;
- ( ) entre colegas de trabalho;
- ( ) entre os membros da família;
- ( ) entre professor e aluno;
- ( ) entre profissional e paciente;
- ( ) outra (qual?): \_\_\_\_\_

Se você quase sempre interage desta maneira, circule 5.  
 Se você geralmente se comunica desta maneira, circule 4.  
 Se você às vezes se comporta desta maneira, circule 3.  
 Se você interage assim raramente, circule 2.  
 Se você quase nunca se comporta desta maneira, circule 1.

1	Defendo meus direitos.	5 4 3 2 1
2	Em conversas com amigos, percebo não apenas o que eles dizem, mas o que não dizem.	5 4 3 2 1
3	Consigo persuadir os outros quanto à minha opinião.	5 4 3 2 1
4	Revelo como me sinto para os outros.	5 4 3 2 1
5	Assumo o controle das conversas em que estou envolvido, negociando os tópicos sobre os quais falaremos.	5 4 3 2 1
6	Digo às pessoas quando me sinto próxima delas.	5 4 3 2 1
7	Atinjo meus objetivos de comunicação.	5 4 3 2 1
8	Tenho dificuldade em me defender.	5 4 3 2 1
9	Deixo que os outros saibam que compreendo o que eles dizem.	5 4 3 2 1
10	Meus amigos realmente acreditam que me preocupo com eles.	5 4 3 2 1
11	Permito que os amigos vejam quem realmente sou.	5 4 3 2 1
12	Outros me descreveriam como caloroso, ou seja, afetuoso.	5 4 3 2 1
13	Expresso-me bem verbalmente.	5 4 3 2 1
14	Tento olhar os outros nos olhos quando falo com eles.	5 4 3 2 1
15	Quando sou injustiçado, confronto a pessoa que me injustiçou.	5 4 3 2 1
16	Outras pessoas acham que eu as entendo.	5 4 3 2 1
17	É difícil encontrar as palavras certas para me expressar.	5 4 3 2 1