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Translation into Spanish and Cultural Adaptation of the Critical-Care Pain Observation Tool

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Abstract

Background—The Critical-Care Pain Observation Tool (CPOT) is recommended for evaluating pain behaviors in patients in the intensive care unit who are unable to report pain. The source of the only published Spanish version of the CPOT does not verify that it underwent a formal translation process.

Objective—To describe the translation into Spanish and cultural adaptation of the original French version of the CPOT.

Methods—Key persons in the translation process included one with a master’s degree in translation, a critical care physician, nurse faculty members with vast experience in intensive care units, and the instrument’s developer. This team followed the Principles of Good Practice for the Translation and Cultural Adaptation Process for Patient-Reported Outcomes Measures as a guide to translate and culturally adapt the CPOT.

Results—The first Spanish-language version was back translated to French and was also compared with the English version. Revisions necessitated a second version, which was submitted to experts in critical care. Their modifications required a third version, which was back translated to French and discussed with the CPOT developer, after which a fourth version was created. Finally, a linguistic expert proofread the tool, and the translation leaders incorporated the recommendations, thereby obtaining a final Spanish version.

Conclusion—The Spanish version is ready to undergo validation with patients in the intensive care unit, which is the next step toward its use in assessing pain behaviors among patients in

intensive care units where Spanish is spoken. (*American Journal of Critical Care*. 2020;29:226–232)

Patients are exposed to situations that provoke pain during their stay in an intensive care unit (ICU). Although some patients in the ICU can report their pain, many are unable to do so because of communication barriers. The International Association for the Study of Pain has stated that “the inability to communicate verbally does not negate the possibility that an individual is experiencing pain and is in need of appropriate pain-relieving treatment.”¹

Several tools have been developed to assess specific pain behaviors in order to evaluate pain among patients in the ICU who are unable to report it.^{2–6} The Critical-Care Pain Observational Tool (CPOT) is one of these tools.³ Its robust validity and reliability, as demonstrated in psychometric analyses, make its use recommended.⁷

The CPOT was originally developed in French and has been translated into several languages.^{8–17} To our knowledge, however, the only Spanish version of the CPOT has not undergone a formal translation process.^{18,19} We describe here the process of translating into the target language—Spanish—and culturally adapting the original French version of the CPOT. For this process we used the Principles of Good Practice for the Translation and Cultural Adaptation Process for Patient-Reported Outcomes Measures (PGP-PRO) as a guide.²⁰

Methods

Instrument Description

The CPOT includes 4 indicators related to behavioral pain responses: facial expression, body movements, muscle tension, and compliance with mechanical ventilation (for intubated patients) or with vocalization (for extubated patients). Each of these behavioral responses has categorical descriptions that can be scored from 0 to 2, for a total score ranging from 0 to 8. The CPOT also includes a brief description of each behavior and an instruction section.²¹ A score higher than 2 has good specificity and sensitivity during nociceptive exposure,^{22,23} and clinical practice guidelines from 2013 note such scores as representing substantial pain.²⁴

Translation and Cultural Adaptation

The PGP-PRO recommend 10 steps: (1) preparation, (2) forward translation, (3) reconciliation, (4) back translation, (5) review of the back translation, (6) harmonization, (7) cognitive debriefing, (8) review of cognitive debriefing results and finalization, (9) proofreading, and (10) final report. This process was developed through rigorous methods by a translation and cultural adaptation task force from the International Society for Pharmacoeconomics and Outcomes Research.²⁰ Those who translated the CPOT to Finnish,¹⁰ Swedish,¹² and Norwegian¹⁷ also used the PGP-PRO.

Results

Preparation

Two critical care nurse educators with experience in the ICU (C.M.A.-N. and M.I.F.-R.) had used the English version of the CPOT in other research; they led this translation project. The developer of the instrument (C.G.) granted us permission to translate into Spanish and culturally adapt the original French version. We invited her to participate in the process so she could clarify any ambiguities or inconsistencies in the translation and the meaning of concepts. During this step, we also invited translators for both the original (French) and target (Spanish) languages to participate, along with revisers and a Spanish linguistics expert. Table 1 lists the name, initials, credentials, and role/contributions of each member of the translation project team.

Forward Translation

Although the PGP-PRO suggest that this step use 2 translators, we used only 1 because the CPOT does not use complex language and instructions. A native Spanish speaker (A.M.T.-R.) with education in the French language and a master's degree in translation (from French and Spanish to English, and from French and English to Spanish) forward translated the original tool (in French) to the target language (Spanish). Although she does not have a medical or clinical background, she has participated in several seminars focused on translating medical journal texts.

Reconciliation

Because only 1 translation was conducted, we modified this step. A critical care physician (D.D.) who is a native Spanish speaker and has knowledge of French, and who had no previous knowledge of the CPOT, reviewed and compared the first translated Spanish version with the original French version. He found the Spanish translation to be adequate; therefore we made no modifications to the translation.

Back Translation

This step ensures that the translation to the target language did not change the conceptual meaning of any text within the instrument. An ICU nurse (C.E.-B.) who has a master's degree conducted the back translation from the first Spanish version to the original French language. C.E.-B. is a native French speaker with knowledge of Spanish and had been a graduate student under the CPOT developer (C.G.).

Back-Translation Review

In this step, C.G. (the CPOT developer and a native French speaker) compared both French-language versions (ie, the original and the back-translated versions) and certified that both versions were accurate. This comparison ensured the conceptual equivalence of the first Spanish version.

Harmonization

To identify discrepancies and ensure intertranslation validity, Wild et al²⁰ recommend comparing multiple language versions during harmonization. Thus we compared the first Spanish version (translated from the original French-language CPOT) with the English version of the tool. The translation project leaders (C.M.A.-N. and M.I.F.-R.), who are native Spanish speakers with knowledge of English, performed this revision. The first Spanish version (translated from the original French) had more descriptions for the *grimacing* and *protection* items than the English version. These descriptions did not alter the conceptual meaning of the items; instead they provided more examples for clarification. The protection item, however, contained 2 descriptions—*decorticate* and *decerebrate*—that are not included in the English version; this concerned the translation project leaders, because these behavior responses are related to the severity of brain injury and are not commonly used for assessing pain. After consultation with the CPOT developer (C.G.), we decided to remove both terms from the first Spanish version. Thus a second Spanish version was created.

Cognitive Debriefing

Wild et al²⁰ suggest that the purpose of this step is to assess the comprehensibility and cognitive equivalence of the translation and to identify any items that may be inappropriate or confusing. A panel of 4 experts, all from the target population (nurses) and all of whom are native Spanish speakers, conducted this step: the 2 translation project coleaders (C.M.A.-N. and M.I.F.-R.) and 2 faculty members from the University of Puerto Rico, Medical Sciences Campus, School of Nursing (M.A.-A. and V.T.-R.), both of whom have ICU experience. In this step, the panel revised the Spanish translation with a focus on 3 areas: (1) word and sentence (ie, description) clarity, (2) quality of sentence wording, and (3) ease of understanding words/sentences and their appropriateness for the Puerto Rican culture. The experts evaluated each of these characteristics of the second Spanish version of the CPOT using a 3-point descriptive scale (good, acceptable, or poor). Each expert independently evaluated the instrument, and then they discussed the findings as a group. When an expert had selected “acceptable” or “poor,” the word or sentence (i.e., description) was reevaluated; decisions to modify a word or sentence were made through consensus. Table 2 describes the word- and sentence-level modifications made during the translation process.

Review of Cognitive Debriefing

The team made some modifications to the translation during the cognitive debriefing, taking the local ICU culture into consideration. With these modifications, a third Spanish version was created (Table 2). Modifications for this third version were sent to C.E.-B. for back-translation into French. The CPOT developer (C.G.) was again involved in this step; she agreed with all the modifications except for changing the original word *gime* (moans) to *se queja* (complains). The word *gime* is not regularly used in the ICU context in Puerto Rico. Because its meaning is known, however, and because the experts graded it as acceptable during the cognitive debriefing, we decided to keep the original word *gime* (moans). Thus a fourth version was created.

Proofreading

As a quality control step, a Spanish linguistics expert (M.C.H.) proofread the tool to evaluate syntax. The translation project leaders (C.M.A.-N. and M.I.F.-R.) revised the tool on the basis of the recommendations from M.C.H., and they accepted and incorporated minor modifications that did not represent semantic changes. These changes resulted in the fifth and final version of the Spanish-language CPOT.

Final Report

The translation project leaders (C.M.A.-N. and M.I.F.-R.) and the CPOT developer (C.G.) oversaw the entire translation and cultural adaptation process, which is reported here. Table 3 provides the final version of the Spanish-language CPOT.

Discussion

We translated the original French version of the CPOT into Spanish and included key persons in the translation process. We followed a formal translation process as a guide²⁰; this process has been used to translate the English version of the CPOT to other languages including Finnish.¹⁰ A formal translation and cross-cultural adaptation process ensures semantic and conceptual equivalence between the original version and the target version.^{20,25}

We decided to modify the second (forward translation) and third (reconciliation) steps, which suggest conducting 2 translations with 2 translators and then reconciling both translations. Instead, we forward translated the instrument once, and then a person with knowledge of both languages contrasted the first translated version against the original version. This could be a limitation of the process, but we encountered no major difficulties.

Upon reviewing this process, we recommend performing the cognitive debriefing, which involves members of the target population (in this case, critical care nurses), in parallel with the reconciliation. Because the members of the target population assess comprehension and conceptual equivalence during the cognitive debriefing, it would have been helpful to obtain their recommendations and incorporate them before back translating the instrument.

Conclusion

This is, to our knowledge, the only Spanish version of the CPOT that has been translated and culturally adapted through a formal process. Although we culturally adapted the instrument to Puerto Rico, because of its relatively simple wording it could probably be used in most Spanish-speaking countries. This Spanish version is ready to undergo validation with patients in ICUs, which is the next step toward using it to assess pain behaviors among patients in ICUs where Spanish is spoken.

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MA, (freelance translator); and María C. Hernández, PhD, University of Puerto Rico, Rio Piedras Campus, for their contributions to the translation process.

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Table 1

Translation project team and member contributions

Names	Initials	Credentials/role	Translation step	Role/contributions
Carmen Mabel Arroyo-Novoa	C.M.A.-N.	PhD, RN Former critical care nurse educator and researcher	Preparation Cognitive debriefing Review of cognitive debriefing Harmonization	Coleader of translation project Evaluated comprehensibility and cognitive equivalence
Milagros I. Figueroa-Ramos	M.I.F.-R.	PhD, RN Former critical care nurse educator and researcher	Preparation Cognitive debriefing Review of cognitive debriefing Harmonization	Coleader of translation project Evaluated comprehensibility and cognitive equivalence
Céline Gélinas	C.G.	PhD, RN Former critical care nurse educator and researcher	Preparation Back-translation review Harmonization Review of cognitive debriefing	Gave permission to translate the CPOT Compared the 2 French versions Revised the modifications made during cognitive debriefing
Adlyn M. Torres-Rivera	A.M.T.-R.	Master's degree in translation	Forward translation	Translated CPOT from French to Spanish
Donald Dexter	D.D.	MD Pneumologist and critical care physician	Reconciliation	Compared first Spanish version with the original French version
Christine Echeagaray-Benites	C.E.-B.	MScA, RN Critical care nurse	Back translation Review of cognitive debriefing	Translated the first Spanish version to French Back translated to French the modifications made during cognitive debriefing
Melany Alicea-Ávila	M.A.-A.	MSN, RN Former critical care nurse, current nurse educator	Cognitive debriefing	Evaluated comprehensibility and cognitive equivalence
Viviana Torres-Reyes	V.T.-R.	MSN, RN Former critical care nurse, current nurse educator	Cognitive debriefing	Evaluated comprehensibility and cognitive equivalence
María C. Hernández	M.C.H.	Spanish linguistic expert	Proofreading	Evaluated syntax

Abbreviation: CPOT, Critical-Care Pain Observation Tool.

Table 2

Summary of modifications during the translation process

Instrument area	Forward translation		Cognitive debriefing		Review of cognitive debriefing and proofreading	
Title	Herramienta de observación para dolor de cuidado crítico	Tool of observation for pain of critical care	Herramienta para la observación de dolor en cuidado crítico	Tool for observation of pain in critical care	Instrumento para la observación del dolor en cuidado crítico	Instrument for observation of pain in critical care
Score (facial expression)	Neutral	Neutral	Word was deleted		NA	NA
Description (facial expression)	Carece de tensión muscular observable en su rostro	Lacks observable muscle tension in his face	Tensión muscular ausente	Muscular tension absent	No se observa tensión muscular	No muscle tension is observed
	Cejas reducidas (bajas)	Downward brows (down)	NA	NA	Frunce el ceño	Frowns
	Leve fruncir nasolabial	Slight nasolabial wrinkle	NA	NA	Frunce levemente el área nasolabial	Slightly wrinkles the nasolabial area
	Frunce las cejas o arruga las líneas subnasales	Downward brows or wrinkle subnasal folds	NA	NA	Frunce el ceño, frunce el área nasolabial	Frowns, wrinkles the nasolabial area
	Ojos cerrados y apretados	Closed and tight eyes	NA	NA	Ojos cerrados y párpados bien apretados	Closed eyes and tight eyelids
	Posible boca abierta	Possible open mouth	La boca puede estar abierta	The mouth may be open	NA	NA
Description (body movements)	Prudentes	Prudent	Cautelosos	Cautious	NA	NA
Indicator (ventilator)	Interacción con el ventilador	Interaction with the ventilator	Respuesta al ventilador	Response to ventilator	NA	NA
Score (ventilator)	Combate	Combative	Lucha	Fights	NA	NA
Description (ventilator)	Alarmas inactivas	Inactive alarm	Las alarmas no se activan	Alarms are not activated	NA	NA
	Bloquea su respiración	Blocks breathing	Bloquea la ventilación	Blocks ventilation	NA	NA
Score (vocalization)	Gime	Moans	Se queja	Complains	Gime	Moans

Abbreviation: NA, not applicable.

Table 3

Critical-Care Pain Observation Tool (CPOT) translated into Spanish^a

Instrumento para la Observación del Dolor en Cuidado Crítico		
Indicador	Puntuación (0 a 8)	Descripción
Expresión facial	0	No se observa tensión muscular
	1	Frunce el ceño Frunce levemente el área nasolabial Párpados apretados Cualquier otro cambio de expresión facial (ej. abre los ojos de repente, presenta lágrimas durante la movilización)
	2	Frunce el ceño, frunce el área nasolabial Ojos cerrados y párpados bien apretados La boca puede estar abierta El paciente puede morder el tubo endotraqueal
Movimientos corporales	0	Inmóvil, no se mueve (no significa necesariamente ausencia de dolor) Posición normal (movimientos no dirigidos al área que le duele ni realizados a fin de protegerse del dolor)
	1	Movimientos lentos, cautelosos Toca o frota el área que le duele Se dirige al área que le duele, a los tubos Toca los tubos Llama la atención pateando o manoteando
	2	Hala los tubos Intenta sentarse en la cama Se mueve constantemente No colabora Rechaza al personal Intenta sobrepasar las barreras de la cama
Respuesta al ventilador (paciente intubado)	0	Las alarmas no se activan, se deja ventilar
	1	Tose pero se deja ventilar, las alarmas pueden activarse, pero se detienen espontáneamente
	2	Asincronía: bloquea la ventilación, las alarmas se activan constantemente
Vocalización	0	Se expresa con normalidad, silencioso
	1	Gime, suspira
	2	Grita, llora
Tensión muscular (evaluación por medio de la flexión y extensión pasiva de las extremidades superiores en descanso)	0	No ofrece resistencia a los movimientos, tono muscular normal
	1	Se resiste a los movimientos
	2	Muy tenso, rígido o se retuerce mucho Dificultad o incapacidad para realizar los movimientos Apretá los puños

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⁴ Versión español traducida de la versión original en francés (Spanish version translated from the original French version): Carmen Mabel Arroyo-Novoa, PhD, RN, and Milagros I. Figueroa-Ramos, PhD, RN.