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Brazilian version of the Pasero Opioid-Induced Sedation Scale: cross-cultural adaptation study

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Versão brasileira da Pasero Opioid-Induced Sedation Scale: estudo de adaptação transcultural

Versión brasileña de la escala Pasero Opioid-Induced Sedation Scale: estudio de adaptación transcultural

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ABSTRACT

Objective: Perform a cross-cultural adaptation of the Pasero Opioid-induced Sedation Scale to the Brazilian setting.

Method: This is a methodological study using Beaton's framework, which consists in six stages: translation, synthesis of translations, re-translation, expert committee, pre-test, and sending the adapted version of the instrument to the author of the original. The study was carried out from April to December 2021. The research was conducted in a private hospitalin the city of São Paulo, in the adult hospitalization and critical care units. It was approved by the research ethics committee.

Results: After translation, translation synthesis and back-translation steps, the version was evaluated by the expert committee, requiring two rounds to obtain acceptable CVI values above 0.80. In the pre-test phase, the scale was well understood, with a CVI of 0.98.

Conclusion: The scale was adapted for the Brazilian context; however, further studies will be needed to analyze validity and reliability evidence.

Descriptors: Analgesics, opioid. Deep sedation. Methods. Pain. Nursing care. Validation study.

RESUMO

Objetivo: Realizar adaptação transcultural da escala *Pasero Opioid-Induced Sedation* para o cenário brasileiro.

Método: Estudo metodológico, utilizado referencial de Beaton, composto por seis fases: tradução, síntese das traduções, retradução, comitê de especialistas, pré-teste e envio dos instrumentos adaptados ao autor do instrumento original. Estudo foi realizado de abril a dezembro de 2021. A pesquisa desenvolveu-se em um hospital privado, localizado no município de São Paulo, nas unidades de internação e críticas adultos. Recebeu aprovação do comitê de ética.

Resultados: Após as etapas de tradução, síntese de tradução e retrotradução a versão foi avaliada pelo comitê de especialistas, com duas rodadas para obtenção de valores aceitáveis de índice de validade de conteúdo acima de 0,80. Na fase de pré-teste a escala apresentou boa compreensão com score de 0,98.

Conclusão: A escala foi adaptada para o contexto brasileiro, no entanto, novos estudos serão necessários para análises de evidências de validade e confiabilidade.

Descritores: Analgésicos opioides. Sedação profunda. Métodos. Dor. Cuidados de enfermagem. Estudo de validação.

RESUMEN

Objetivo: Realizar la adaptación transcultural de la escala de *Pasero Opioid-induced Sedation Scale* para el contexto brasileño.

Método: Estudio metodológico, utilizando el marco de referencia de Beaton, que consta de seis fases: traducción, síntesis de traducciones, traducción inversa, comité de expertos, prueba previa, y envío del instrumento adaptado ala autora del instrumento original. El estudio se realizó de abril a diciembre de 2021, y a la investigación se condujo en un hospital privado, ubicado en la ciudad de São Paulo, en las unidades de hospitalización de adultos y cuidados críticos. Recibió la aprobación del comité de ética.

Resultados: Después de las etapas de traducción, síntesis de traducción y traducción inversa, la versión fue evaluada por un comité de expertos, con dos rondas para obtener valores aceptables de índice de validez de contenido superiores a 0,80. En la fase previa a la prueba, la escala mostró una buena comprensión, con una puntuación de 0,98.

Conclusión: La escala fue adaptada para el contexto brasileño, sin embargo, serán necesarios más estudios para analizar las evidencias de validez y confiabilidad.

Descriptores: Analgésicos opioides. Sedación profunda. Métodos. Dolor. Atención de enfermería. Estudio de validación.

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INTRODUCTION

Opioids are widely used in the treatment of pain and, although safe, they can contribute to adverse events, even when the user follows proper recommendations and dosages[1]. These events can vary from milder reactions, such as nausea, vomiting, and constipation, to severe complications, such as sedation and respiratory depression[2].

The liver is the organ responsible for metabolizing the opioids, which are later excreted in the renal and hepatic systems. Therefore, it is essential to pay close attention to the use of these medications, especially in older persons and those with liver or kidney problems, in addition to patients using other medication which can increase the risk of sedation. Other factors, such as administration route and resistance to opioids, can influence the action of the drug[2].

According to nursing directives regarding the monitoring of opioid-induced sedation or respiratory depression, produced by the American Society for Pain Management, there is a high risk involving patients who undergo these procedures when they present one of the following factors: age greater than 55 years, obesity, untreated obstructive sleep apnea, excessive daytime sleepiness, pre-existing pulmonary and cardiac disease or dysfunction, albumin level <30g, patients who depend on others for care, smokers, patients who have never used opioids, resistant patients who receive increased doses, patients undergoing thoracic surgery, simultaneous use of sedative medication, use of single dose neuraxial morphine, continuous infusion of opioids in patients who have not previously used the medication[3,4].

Sedation can take place at any time during the use of opioids, but it is more frequent in the beginning of therapy and when doses are adjusted[3,4].

In the United States of America (USA), the Joint Commission International (JCI), in 2012, encouraged hospitals to evaluate practices related to opioid use. By creating and implementing policies and procedures to monitor this population with systematized evaluations, the monitoring must be individualized according to the needs of the patient. Furthermore, the team must be educated regarding the evaluation of patients who use opioids and the planning of individual care[5], so they can mitigate adverse events which could be severe, in addition to helping reduce the length of long hospitalizations, considering that patients with complications increase health care costs. Therefore, recommendations suggest that evaluative tools should be used to prevent adverse events associated with opioid use[4].

JCI recommends using standardized tools that can help evaluate patients and identify and prevent signs of sedation and respiratory depression[5]. The Pasero Opioid-induced Sedation Scale (POSS) was developed in the American context by a nurse by the name of Chris Pasero, who founded and is the ex-president of the American Society for Pain Management, in order to provide high-quality pain care for hospitalized patients. This scale has been applied in several American hospitals, in clinical, surgical, oncological, pediatric, and intensive care settings, where it was shown to increase nurses' confidence in opioid administration, including their ability to avoid overdoses; it also has shown improvement in pain and sedation communication during care transfers[6].

This is the only scale developed to guide the decision making of nurses. It is considered to be reliable (α= 0.903) for the evaluation of unwanted sedation during the administration of opioids to control pain[7–9]. This instrument has no version in Portuguese, and no studies were developed to assess the evidence of its validity for the Brazilian context. Its advantages include the fact it gathers the most important information about the topic under study, in addition to being self-applicable.

Considering the importance of the instrument for clinical practice and the evaluation of the patient who is using opioids to manage pain, a transcultural adaptation of POSS is essential to evaluate the Brazilian population in future studies, contributing for the decision making of nurses when dealing with patients who are using opioids in the hospital setting and are at risk of sedation and respiratory depression. As a result, the following guiding question emerged: Would a cross-cultural adaptation of the POSS instrument be linguistically equivalent to the Brazilian context?

Therefore, the goal of this study was to describe the transcultural adaptation of the POSS scale into the Brazilian context.

METHOD

Type and place of study

Methodological study for the cross-cultural adaptation of the POSS scale to the Brazilian context. The adaptation of a measuring instrument into a different cultural context is more than just a simple translation. It must take into account all differences between the original culture, that which produced the instrument, and the target culture, where it will be inserted, with the goal of guaranteeing semantic, idiomatic, experimental, and conceptual equivalence with the original items[10].

The lack of consensus about the transcultural adaptation process is associated with the absence of several different

methods, meaning that the method must be chosen according with the context of the questionnaire of interest[10].

The research was carried out in a private hospital located in the city of São Paulo in the adult inpatient and critical care units, from April to December 2021.

Sample

This study used Beaton's methodological framework, which states that cross-cultural adaptations should be carried out in six stages, and count on the participation of five translators[11]:

Stage 1: initial translation, involving translator 1 (T1), a professional in the field of health who is proficient in English, and translator 2 (T2), a professor proficient in the English language; Stage 2: synthesis of the first translations; Stage 3: back-translation; Stage 4: specialist committee; Stage 5: pre-test; and Stage 6: submission of the adapted instrument to the author of the original version[11].

The profile of the translators in the early stages were, in stage 1: T1, a nursing PhD with knowledge about the field being studied and experience in both languages; and T2, a linguistic student with 8-year experience in the English language; in stage 1: T3, a PhD in nursing with knowledge on the field being studied, in addition to having had previous experiences and fluency in both languages; Stage 3: T4, a Canadian English professor with 11-year experience in Portuguese who translates scientific articles from journals in the health field, and T5, a Brazilian English professor with 9-year experience living abroad, who is also a translator of articles for scientific journals in the field of health[11].

Five translators were recruited using the predefined criteria that determined the inclusion and selection of participants in the sample: experience in the field of health (for translators with professional experience, that is, those who are not unexperienced), and fluency in both languages (source and target), in addition to recognizing the cultures.

Regarding the specialist committee, we recruited seven nurses via email, after evaluating their CVs in the Lattes Platform (http://lattes.cnpq.br/). The attributes necessary to include the specialists were: specialized knowledge about the topic and/or experience in the methodological process used in the research.

Beaton suggests that 30 to 40 participants should evaluate the pre-test of the adapted instrument, without selecting a specific number. Thus, we selected 33 specialists in this stage[11]. Criteria for their selection were: being an active nurse for more than one year in clinical-surgical and intensive care units for adult patients, who evaluate patients using opioids for pain management. Those in probative training, on vacation, or on medical leave. Professionals who were in the units during their working hours were invited to participate in the study.

The author of the original version of the POSS scale, Chris Pasero, authorized, via email, the cross-cultural adaptation and the evaluation of the evidence of the validity of the instrument for the Brazilian context.

Data collection

The research was conducted from April to December 2021.

In the four early stages, the specialist committee used a form, developed by the researchers and sent via email, to evaluate the translation of the scale. The form included: sociodemographic variables (sex, age, education, area of expertise, experience working in the field, and experience in methodological studies or adaptation of scales); it also included an evaluation of the possible equivalences (semantic, idiomatic, conceptual, and experiential) on a Likert scale. The possible scores in the scale were: 1 – Translation is completely adequate; 2 – Translation is very adequate; 3 – Translation is not very adequate; and 4 – Translation is inadequate.

In stage 5, to apply the pre-final version of the scale in the pre-test sample, we used a new form, developed by the research team, which included sample characterization (sex, age, academic title, experience working in the field, development of research in the field of the study, whether the professional has trouble evaluating patient pain, whether they feel apt to appropriately evaluate the patient regarding opioid use to manage pain, whether they know the main opioids used to manage pain, whether they know the opioid administration routes, whether they know the regime of opioid administration, whether they can tell apart acute, chronic, and persistent pain; whether they know the intra-hospital pain team; whether they know how to call the pain team) and an evaluation of how well they understood the content, scored using a Likert scale where 1 – Completely clear and understandable; 2 – Partially clear and understandable; 3 – Not very clear, but understandable; 4 – Not very clear and not understandable; or 5 – Completely not understandable.

Stage 6 did not require a form, as it included only the submission of the new versions of the scale to be approved by the author of the original scale.

Data treatment and analysis

Data found was organized in the software Excel and analyzed in the software JAMOVI® 2.0. Data was presented using

tables for qualitative or categorized variables. Quantitative variables were presented using measures such as absolute and relative frequencies, mean and standard deviation.

To measure the specialist committee's opinion regarding the transcultural adaptation of POSS, we calculated the agreement of the score in the evaluation instrument using the Content Validity Index (CVI), which expresses the ratio of highest scores to the total number of scores[12].

We considered that values ≥ 80% (0.80) indicated agreement between specialists[12].

The level of understanding of the nurses about the POSS scale in the pre-test stage was evaluated through questions. Also, we calculated the CVI of the items in the scale for an agreement analysis, considering that values of 80% or above indicated agreement[12].

Ethical aspects

This study was approved by the research ethics committee, following the guidelines and regulatory standards for research involving human beings, according to Resolution No.466, of December 12, 2012. After the approval of the REC (CAAE 47669321.0000.5461), those who met the inclusion criteria were invited to participate in the research and to sign two copies of the Informed Consent Form, one of which remained with the researcher, while the other remained with the participant. The anonymity, confidentiality, and privacy of participants were guaranteed at all stages of the research, and they were not identified at any point.

RESULTS

The process of cultural translation and adaptation started with the translation, which was carried out by two translators, followed by a synthesis of the translation, made by a third one, as indicated in Chart 1.

Chart 1 shows some differences between translations T1 and T2 regarding their descriptions and nursing actions, which should be highlighted. Translator 1 (T1), from the field of health, translated the word "sleep" as "*sono*", while translator 2 (T2), who is not from the health field, used the word "*dormindo*".

Another significant diference was regarding the expression "slightly drowsy", which was translated by T1 as "Ligeiramente sonolento", while T2 used the expression "Levemente sonolento", two different adverbs.

T1 translated "consider administering a non sedating, opioid sparing non opioid" as: "*considerar a administração de um medicamento não sedativo e livre de opioide*"; on the other hand, T2 translated it as "*considerar a administração de medicamentos não-opioides, não-sedativos, moderadores de opioide*".

Regarding the nursing actions, for the scores 3 and 4, T1 translated "respiratory status" as "*estado respiratório*", while T2 used the expression "*situação respiratória*".

The synthesis of the translations (T12) mixed the terminology employed by the translators after a consensus, and no specific translation predominated.

Regarding the backtranslation, both translations, BT1 and BT2, presented many differences from the original scale, minimizing inconsistencies. Although some sentences made changes to the original wording of the scale, the meaning and idea remained similar.

Then, the version involving the expert committee was created. This version included seven nurses to confirm the validity of the synthesis of the translations and backtranslations. Three of these nurses had MS degrees, two were PhDs, and two had specializations in different areas of the field of health, related to nursing direct assistance, teaching, or research. Four nurses were experienced with the process of translating and validating instruments.

At that moment, the semantic, idiomatic, cultural, and conceptual equivalence of the categories and sentences in the scale were evaluated. It stands out that, although the general CVI of the POSS scale was calculated as 0.93, two items presented an agreement below 80%, namely: Sentence 12 (0.79) and Sentence 13 (0.71), requiring the reapplication of the scale with the experts, after the suggested corrections. After the second application, the total POSS CVI increased to 0.99, and all items had less than 20% disagreement, as Table 1 shows.

The main changes in the application of the scale, suggested by the expert committee in both rounds, were: replacing the score "S", which indicated "sleep", for "D", which indicated "*dormindo*", the Portuguese word for the term, to standardize using the first letter of the word. Also, the translation of the sentence "Sleep, easy to arouse", which, at first, was "*Dormindo, facilidade de ser despertado*" was replaced by "*Dormindo, fácilem ser despertado*", in order to maintain, in Portuguese, the same grammatical class of the words, considering the semantic equivalence of adjectives and adverbs. The translation of "Slightly drowsy, easily aroused" was changed from "*Ligeiramente sonolento, desperta facilmente*" por "*Levemente sonolento, facilidade em ser despertado*", since the Portuguese adverb "ligeiramente" indicates an action. The change of the translation of easily also changed from "*facilmente*" to "*facilidade*", following the same logic of the previous sentence by respecting the semantic equivalence of adjectives and adverbs.

Chart 1 – Translated versions and synthesis of the translation of the Pasero Opioid-induced Sedation Scale (POSS) for the Brazilian context. São Paulo, Brazil, 2022

Translated version 1 (T1)			Translated version 2 (T2)			Synthesis Translation 12 (T12)		
OPIOID-INDUCED SEDATION SCALE			PASERO OPIOID-INDUCED SEDATION SCALE			PASERO OPIOID-INDUCED SEDATION SCALE		
POSS score	**Description**	**Nursing actions**	**POSS score**	**Description**	**Nursing actions**	**POSS score**	**Description**	**Nursing actions**
S	Sleeping, easily aroused	Acceptable, no action required	S	Sleeping, easily aroused	Acceptable, no action required	S	Sleeping, easily aroused	Acceptable, no action required
1	Awake and alert	Acceptable, no action required	1	Awake and alert	Acceptable, no action required	1	Awake and alert	Acceptable, no action required
2	Occasionally drousy, easy to arouse	Acceptable, no action required	2	Sleeping, easily aroused	Acceptable, no action required	2	Occasionally drowsy, easy to arouse	Acceptable, no action required
3	Frequently drowsy, arousable, drifts off to sleep during conversation	Unacceptable; monitor respiratory status and sedation level closely until stable at less than 3; recommend decreasing opioid dose 25%-50%; notify the professional that prescribed the opioid, consider administering a nonsedating nonopioid.	3	Frequently drowsy, arousable, drifts off to sleep during conversation	Unacceptable; monitor respiratory status and sedation level closely until stable at less than 3; recommend decreasing opioid dose 25%-50%; notify the professional that prescribed the opioid or the anesthesiologist, consider administering nonsedating, opioid-sparing nonopioid.	3	Frequently drowsy, arousable, drifts off to sleep during conversation	Unacceptable; monitor respiratory status and sedation level closely until stable at less than 3; recommend decreasing opioid dose 25%-50%; notify the professional that prescribed the opioid or the anesthesiologist, consider administering nonsedating nonopioid.

Chart 1 – Cont.

Translated version 1 (T1)			Translated version 2 (T2)			Synthesis Translation 12 (T12)		
OPIOID-INDUCED SEDATION SCALE			PASERO OPIOID-INDUCED SEDATION SCALE			PASERO OPIOID-INDUCED SEDATION SCALE		
POSS score	Description	Nursing actions	POSS score	Description	Nursing actions	POSS score	Description	Nursing actions
4	Sonolento, com resposta mínima ou nenhuma resposta à estimulação verbal ou física	Unacceptable, stop opioid; consider administering naloxone; notify the professional that prescribed the opioid or the anesthesiologist; monitor respiratory status and sedation level closely until stable at less than 3 and respiratory status is satisfactory.	4	Somnolent, minimal or no response to verbal or physical stimulation	Unacceptable, stop opioid; consider administering naloxone; notify the professional that prescribed the opioid or the anesthesiologist; monitor respiratory status and sedation level closely until stable at less than 3 and respiratory status is satisfactory.	4	Somnolent, minimal or no response to verbal or physical stimulation	Unacceptable, stop opioid; consider administering naloxone; notify the professional that prescribed the opioid or the anesthesiologist; monitor respiratory status and sedation level closely until stable at less than 3 and respiratory status is satisfactory.

Source: The author, 2022.

Table 1 – Expert committee agreement regarding the translated version T12 of the Pasero Opioid-induced Sedation Scale (POSS) into the Brazilian context. São Paulo, Brazil, 2022

Items		CVI	
		1st round	2nd round
Sentence 1	Pasero opioid-induced sedation scale	1.00	1.00
Sentence 2	POSS score	1.00	1.00
Sentence 3	S,1,2,3, 4	0.86	1.00
Sentence 4	Description	1.00	1.00
Sentence 5	Sleeping, easily aroused	0.86	1.00
Sentence 6	Awake and alert	1.00	1.00
Sentence 7	Occasionally drowsy, easy to arouse	0.86	1.00
Sentence 8	Frequently drowsy, arousable, drifts off to sleep during conversation	0.86	1.00
Sentence 9	Sonolento, resposta mínima ou inexistente a estímulos verbais ou físicos	0.86	1.00
Sentence 10	Nursing actions	1.00	1.00
Sentence 11	Acceptable, no action required	1.00	1.00
Sentence 12	Unacceptable; monitor respiratory status and sedation level closely until stable at less than 3; recommend decreasing opioid dose 25%-50%; notify the professional that prescribed the opioid or the anesthesiologist, consider administering nonsedating nonopioid	0.79	0.96
Sentence 13	Unacceptable, stop opioid; consider administering naloxone; notify the professional that prescribed the opioid or the anesthesiologist; monitor respiratory status and sedation level closely until stable at less than 3 and respiratory status is satisfactory	0.71	0.96
TOTAL		0.93	0.99

Source: The author, 2022.

It is worth noting that there was a suggestion to change the translation of "Somnolent, minimal or no response to verbal or physical stimulation" from "*Sonolento, resposta minima ou inexistente a estímulos verbais ou físicos*" to "*Sonolência excessiva, resposta minima ou inexistente a estímulos verbais ou físicos*". In regard to this sentence, there was a discussion about whether it was necessary to have a graduation between physiological and non-physiological sleep, that is, opioid-induced sleep, which justified this change, so there was no doubts regarding this difference.

Another pertinent suggestion was replacing the translation of "Nursing action" from "*Ação de enfermagem*" into "*intervenção de enfermagem*" considering that the term "action" is not usual in Brazil, where it is more common to use the equivalent of "intervention". The same reason led to change the translation of "Acceptable, no action necessary"

from "*Aceitável, nenhuma ação necessária*" to "*Situação de comportamento esperado, sem conduta no momento*", the latter meaning "Expected behavior, no action necessary at this time". This was done since questions were raised about what should be called acceptable or not in a health institution. This would also make the sentences less subjective, allowing the nurses to apply the scale with more objectivity.

Another valid contribution was changing the translation of "respiratory status" from "*estado respiratório*" to "*padrão respiratório*". This is a term better known by nurses and used in evaluations of the thoracic-abdominal movement. It could also be indicated in footnotes that this is an evaluation of respiratory amplitude, frequency, and rhythm.

Furthermore, in the penultimate and last items of the scale, the translation of "...monitor respiratory status and sedation level closely..." provoked doubt among specialists, since some of them interpreted it differently, using the Portuguese words for "frequently", "from a close distance", "carefully", and "rigorously" in attempts to specify the meaning of "closely". After two rounds, a consensus was reached between the specialists, and the Portuguese word equivalent to "*rigorously*" was chosen, as it indicates the idea of care and attention, not only that of time.

After this stage was concluded with the specialists and the recommended changes were carried out, the pre-final version was applied in the pre-test sample to evaluate how well they understood the instrument using a Likert scale with scores from 1 to 5.

The pre-test counted on the participation of 33 nurses, with a mean age of 35.48 years, mostly female (85.0%), with specialization as their higher title (91.0%), experience from 1 to 5 years in the institution (39.4%), and no research developed in the field of the study (97.0%). It is worth noting that most nurses worked in clinical-surgical units (66.7%), which were divided into subspecialties: gastroenterology, orthopedics, oncology and plastic surgery. Table 2 shows the sociodemographic data of participants and their experience with the subject of the study.

Regarding experience with the topic, 15% of participants reported trouble evaluating the pain of the patient, associating pain with comfort level. Regarding the use of opioids to manage patient pain, 100% of interviewees reported they had already used them in their professional practice. It stands out that 15% of nurses reported not feeling apt to properly evaluate patients using opioids for pain management, even though most had gone through training in the institution.

Regarding the main opioids used, routes and regimes of administration, and differences in the types of pain (acute, chronic, or persistent), most interviewees declared having knowledge on the topic. Most nurses stated to know the intra-hospital pain team and how to contact them (97%).

Regarding how well the nurses understood the items, results indicated partially or completely understandable results. There was only one piece of information added in a footnote to the scale, suggesting that vital sign assessment should be carried out to make the POSS application as clear as possible, regardless of the fact this assessment is routine in all hospitalized patients.

All participants considered the scale easy to apply and capable of providing useful information. Most participants reported that the POSS scale gives support to decision making as it helps classifying patients› sedation correctly. Therefore, all items in the POSS scale were understandable, with a total CVI of 0.98. in the pre-test stage.

Chart 2 shows the final version of the POSS, after all stages of early translation, synthesis, backtranslation, specialist committee, and pre-test.

All stages were sent to the author of the scale, including preliminary, early, and final versions. No change was necessary after her evaluation.

DISCUSSION

The translation of the POSS scale into the Brazilian setting followed the stages of early translation, synthesis, expert committee, and pre-test showing a good acceptance between the original scale and the translated one, to be used in the context of Brazilian hospitals. Most participants in the specialist committee and pre-test stages reported that the instrument is easy to apply and useful for clinical nursing practice, giving support to timely and necessary actions towards patients using opioids.

A prospective cohort study with 20 participants in each group, carried out in the USA, investigated the perception of nursing professionals about the POSS tool using a 10-question questionnaire, with a pre-test (n = 9) and a post-test (n=6). These actions revealed positive aspects: feeling confident about using the instrument correctly ($t(5) = -6.325$, p 0.001); finding it easier to score pediatric patients ($t(5) = -5.000$, p .004); and standardization of the safe use of opioids when administered for pain ($t(5) = -5.000$, p .004). The result was uniform communication about patients' sedation levels in the team, corroborating the findings of this study[13].

Another intervention research, developed in an orthopedic adult unit, in a 660-bed teaching hospital in a metropolitan area of the Midwest of Minneapolis revealed that nurses strongly evaluated the POSS scale as an appropriate instrument for patients receiving opioids in the acute postoperative period. The test had a high result in nursing confidence and regarding the information with which to make clinical decisions ($\kappa = 0.909$)[14].

Table 2 – Sociodemographic characteristics and experience about the topic among nurses who participated in the pre-test stage (n=33). São Paulo, Brazil, 2022

VARIABLES	N	%	MEAN±SD
Sociodemográfica data			
Sex			
Male	5	15.0	
Female	28	85.0	
Age Group (years)			35.48± 6.03
20-30	7	21.0	
31-40	21	64.0	
41-50	5	15.0	
Educational level			
Graduation	2	6.00	
Specialization	30	91.0	
MS	1	3.0	
Professional experience (years)			8.18 ± 5.87
1 to 5	13	39.4	
6 to 10	10	30.3	
> 10	10	30.3	
Unit where the professional works			
Surgical Clinic	22	66.7	
General Critical Unit	6	18.2	
Intensive care	5	15.1	
Experience onthetopic			
Trouble evaluating the pain of the patient			
Yes	5	15.0	
No	28	85.0	

Table 2 – Cont.

VARIABLES	N	%	MEAN±SD
Needed to use opioids to manage the patient's pain			
Yes	33	100.0	
No	-	-	
Consider themselves apt to properly evaluate patients using opioids for pain management			
Yes	28	85.0	
No	5	15.0	
Knows the main opioids used for pain management			
Yes	30	91.0	
No	3	9.0	
Knows the opioid administration routes			
Yes	32	97.0	
No	1	3.0	
Knows the opioid administration regimen			
Yes	25	76.0	
No	8	24.0	
Knows how to differentiate acute, persistent, and chronic pain			
Yes	29	88.0	
No	4	12.0	
Knows the in-hospital pain team			
Yes	32	97.0	
No	1	3.0	
Knows how to contact the in-hospital pain team			
Yes	32	97.0	
No	1	3.0	

Source: The author, 2022.

Chart 2 – Final version of the Pasero Opioid-induced Sedation Scale (POSS) for the Brazilian context. São Paulo, Brazil, 2022

POSS score	Description	Nursing interventions
0	Sleep, easy to arouse	Expected behavior, no action required at this time*
1	Awake and alert	Expected behavior, no action required at this time*
2	Slightly drowsy, easily aroused	Expected behavior, no action required at this time
3	Frequently drowsy, arousable, drifts off to sleep during conversation	Unnacceptable; monitor respiratory status† and sedation level rigorously until stable at less than 3; recommend decreasing opioid dose 25%-50%; notify the anesthesiologist or the professional that prescribed the opioid; consider administering a nonsedating nonopioid medication.
4	Somnolent, minimal or no response to verbal or physical stimulation	Unacceptable, stop opioid; consider administering naloxone; notify the anesthesiologist or the professional that prescribed the opioid; monitor respiratory status† and sedation level rigorously until stable at less than 3 and respiratory status is satisfactory

Source: The author, 2022.
*Keep the patient under observation and check vital signs
† Respiratory amplitude, rate, rhythm, and oxygen saturation.

Contributions carried out by specialists improved the items and allowed the creation of understandable sentences without prejudicing the equivalence between versions.

The topic of sedation, in a previous transcultural adaptation study, showed the importance and necessity to make changes to the instrument, in order to deal with difficulties to fill it in, explicitly showing these difficulties[15].

Among the most relevant observations, throughout the development of this study, stand out the discussion between experts regarding the differences between physiological sleep and opioid-induced sleep. Research on the neurophysiology of sleep showed that this is a dynamic brain activity, which changes one's state of consciousness and reduces sensitivity to environmental stimuli, presenting its own motor and postural characteristics, such as autonomous changes. Furthermore, this sleep-wake activity has two stages: non-REM and REM sleep, where REM stands for rapid eye movement. These involve eye movement, body relaxation, reduced temperature, reduced cardiac and respiratory rhythms, and hormonal release[16].

Opioid-induced sleep, on the other hand, can cause excessive somnolence, even when a person is called; it can alter vital signs (reducing cardiac and respiratory rates and oxygen saturation), and even cause respiratory depression. However, literature is yet to determine a stable definition for "respiratory depression". Some parameters to identify respiratory depression include: hypoxemia, hypopnea, hypoventilation, hypercapnia, decreased respiratory rate and minute ventilation. While oxygen saturation levels have varied from 80 to 94%[17].

Nurses evaluate and monitor the collateral effects of patients using opioids, and they must have scientific knowledge about these drugs (interaction, adequate dose for treatment, antagonists, adverse reactions, and expected effects), in order to establish priorities and ensure the safety of the patient and the quality of the care provided, promoting pain relief (comfort) and satisfaction[18].

It is worth highlighting that the World Health Organization (WHO), using its Analgesic Ladder, helped clarify doubts regarding analgesia and the use of opioids, which can be administered for patients with other conditions than cancer pain or terminal illness, and even in situations of acute or chronic, moderate or severe pain[19]. The main opioids used in clinical practice include: natural (morphine and its analogues: codeine, papaverine), semi-synthetic (oxycodone, naloxone, buprenorphine), and entirely synthetic (methadone, fentanyl and alfentanil).

Finally, we can state that the pre-final Brazilian version of the POSS scale presented adequate transcultural adaptation indexes. Results indicated that this instrument was easily understood by nurses.

The limitations of this study included the short period available to conduct the pre-test and develop the study, mainly due to difficulties recruiting participants. We expect new studies to be developed using the translated version, and that these can address a broad range of validity evidences often recommended by literature, being applied to a sample analogous to that of this study, in order to reduce potential biases.

CONCLUSION

This study carried out a cross-cultural adaptation of the Pasero Opioid-induced Sedation Scale into the Brazilian context.All stages followed a rigorous methodological process, with professional translators (translation, backtranslation, and synthesis versions of the scale), an expert committee to confirm the semantic, idiomatic, conceptual, and experiential equivalences), and a group of nurses to assess their understanding of the scale items.

Nurses will be able to use the adapted POSS scale in health care in the Brazilian settings to contribute for the safety of patients under opioid use, since it can help optimizing proposals for therapeutic treatments related to pain management in health institutions, in order to avoid potentially serious adverse events.

The instrument is now adapted for the Brazilian context, and, from this point on, the necessary evidence to ensure its reliability and validity should be ascertained.

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