RESEARCH NOTE

Spanish translation and preliminary validation of the Pain Treatment Satisfaction Scale [version 1; peer review: 2 approved with reservations]

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Abstract

Satisfactory pain treatment could prevent adverse physical and psychological outcomes in patients. In this sense, adequate survey to measure patient satisfaction of pain management is important. In this study, we translated the Pain Treatment Satisfaction Scale to Spanish and analyzed the psychometric properties of its five dimensions. Reliability was determined with Chronbach's- α and convergent and divergent validity with a multitrait-multimethod analysis. The latter were reported as successful percentage. In the five dimensions, the reliability of the Spanish version showed Chronbach's- α values ≥ 0.75 ; successful percentage for convergent validity was ≥ 88 , and successful percentage for divergent validity was ≥ 94 . The Spanish version showed good psychometric properties and can be used to measure pain treatment satisfaction.

Keywords

Treatment satisfaction , Pain treatment , PSTT , Mexico

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Approval Status ? ?

	1	2
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Any reports and responses or comments on the article can be found at the end of the article.

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Introduction

Satisfactory pain management is important to prevent adverse physical and psychological results for patients and their families. Through the activation of the pituitary-adrenal axis, inadequate pain treatment could produce postsurgical infection and poor wound healing. Pain also activates the sympathetic nervous system, which results in disruption of the cardiovascular, gastrointestinal and renal systems¹. In addition, patients with pain may have a sense of helplessness or hopelessness. This may predispose them to anxiety and depression, and they may be reluctant to seek medical care for other health problems².

Adequate pain control can improve the patient's attitudes and behaviors toward their treatment. They are more willing to comply with the advice of their health care provider, miss fewer medical appointments and are more likely to adhere to their medical treatment³. In this sense, surveys to measure patient satisfaction and pain treatment are important for adequate health care. The aim of this study was to translate the Pain Treatment Satisfaction Scale (PTSS)⁴ into Spanish and analyze some of its psychometric properties.

Methods

Survey. The PTSS was developed by Evans *et al.*⁴ and validated to assess satisfaction in patients with both acute and chronic pain. This survey includes 39 items grouped into five dimensions: information about your pain and treatment (5 items); medical care (8 items); impact of current pain medication (8 items); satisfaction with pain medication, which included the two subscales medication characteristics (3 items) and efficacy (3 items); and side effects (12 items). Each item is measured with a 5 point-Likert scale which ranges from 1 (major satisfaction) to 5 (worst satisfaction). Scales and items were transformed to a 0 to 100 score, where 100 represents highest satisfaction.

Translation. This process was carried out in 4 steps. In the first step, 2 authors, experts in pain medicine (TANO and SCG), performed the translation from English to Spanish. In the second step, all authors reviewed the translation and gave suggestions and recommendations to improve the clarity of the items. In the third step, external professional translators made the inverse translation from Spanish to English. In the final step, all authors reviewed both the inverse translation and the original survey.

Sample. We applied the Spanish version to a random sample of 174 patients from the Dr José E. Gonzalez University Hospital with some type of pain. They were interviewed in the postoperative or ambulatory areas. Patients older than 18 years who gave verbal consent were included in this study. The Ethical Committee of the Faculty of Medicine of the Autonomous University of Nuevo León approved this study, and exempted from written informed consent. The reference number is AN15-004.

Statistical analysis. Results of each dimension were calculate. Reliability was measured with Chronbach's alpha test. The criterion of acceptability was 0.7. The construct validity, which included convergent and divergent validity, was evaluated with a multitrait-multimethod analysis. Convergent validity and divergent validity were expressed as %successful. Convergent validity was calculated with the following formula %successful = [(correlations "item-dimension to which it belongs >0.4")/(total correlations "item-dimension to which it belongs")]*100. The formula for divergent validity was %successful = [(number of correlations item - dimension lesser that correlations item-dimension to which it belongs)/(total correlations item-dimension to which it does not belong)]*100. Correlations were obtained with the matrix multitrait-multimethod. The statistical software SPSS 21 and the package Psy for R 3.2.2 were used for the analyses.

Results

Dataset 1. Raw data for 'Spanish translation and preliminary validation of the Pain Treatment Satisfaction Scale'

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The final Spanish version of the PTSS is available as [supplementary material](#). Of the patients surveyed, 53.5% were men and 46.5% were women. Overall, mean age was 41.5 years, and according to gender, the mean age of women was 38.5 years and for men 44.6 years. The type of pain identified was acute in 60.8% (postoperative 15.2%) and chronic in 39.2% of patients.

Results of the PTSS are presented in [Table 1](#). In general, patients with mild pain in the last 24 hours had a better score than patients with moderate or intense pain in almost all dimensions, except "side effects".

Table 1. Mean PTSS scores of pilot sample according to pain severity in the last week and last 24 hours.

Dimension	Intensity of pain in previous 24 Hrs			Intensity of pain in the previous week		
	Mild	Moderate	Intense	Mild	Moderate	Intense
Information about pain and its treatment	57.0	49.0	51.2	55.8	51.0	51.0
Medical care	59.6	64.2	56.0	61.8	61.0	60.0
Impact of current pain medication	66.2	62.6	54.6	63.4	65.4	57.0
Side effects	88.0	89.2	88.4	87.2	88.6	88.6
Satisfaction with current pain medication	66.0	64.4	55.8	62.2	65.2	59.4

VAS scale for pain mild = 1 – 3; moderate = 4 – 7; intense = 8 – 10

Reliability and construct validity. The range of Chronbach's alpha was 0.75 to 0.90, with medical care being the dimension with the lowest score and "impact of current pain medication" the dimension with the highest score. The %successful in convergent and divergent validity ranged from 88 to 100% and from 94 to 100%, respectively. "Medical care" (88%) and "side effects" (92%) were the dimensions with the lowest %successful in convergent validity, while medical care (94%) was the dimension with the lowest %successful in discriminant validity.

Discussion

In this study, we translated and preliminarily evaluated the psychometric properties of PTSS in its Spanish version. In other studies, this survey has been translated and validated in Chinese³ and French⁴ where good psychometric properties have been shown.

In the case of reliability, values obtained are satisfactory since values of all dimensions were > 0.70 and similar to the original version. In general, the values of all dimensions were slightly lower than the original version.

With respect to convergent and discriminant validity, results are satisfactory and similar to the original version. The medical care dimension had lower values than the original in both convergent and discriminant validity. Side effects had a value slightly higher than the original. The rest of the dimensions had the same values as those of the original version.

The limitations of this study include lack of a rigorous diagnosis of the type of pain. The sample size was smaller than that used in other studies³⁻⁵ and finally, a test-retest analysis was not performed.

Table 2. Reliability of each dimension of the translated version and the original version.

Dimension	No. of items	Reliability (Cronbach's Alpha)	
		Spanish version	Original version*
Information about pain and its treatment	5	0.86	0.89
Medical care	8	0.75	0.86
Impact of current pain medication	8	0.90	0.92
Side effects	12	0.86	0.83
Satisfaction with current pain medication	6	0.89	0.90

*From Evans 2004³

Table 3. Convergent and divergent validity of each dimension of the translated version and the original version.

Dimension	Range correlations item-scale this study	Convergent validity		Discriminant validity	
		Success rate in this study	Success rate* original version	Success rate in this study	Success rate* original version
Information about pain and its treatment	0.54–0.75	100	100	100	100
Medical care	0.07–0.56	88	100	94	100
Impact of current pain medication	0.57–0.75	100	100	100	100
Side effects	0.38–0.66	92	83	100	100
Satisfaction with current pain medication	0.64–0.77	100	100	100	100

* From Evans 2004³

Conclusion

The Spanish version of PTSS has satisfactory psychometric properties and some of these are similar to the original version; therefore it could be considered a valid instrument to measure pain treatment satisfaction in a Mexican population.

Data availability

F1000Research: Dataset 1. Raw data for ‘Spanish translation and preliminary validation of the Pain Treatment Satisfaction Scale’, [10.5256/f1000research.8750.d122791](https://doi.org/10.5256/f1000research.8750.d122791)⁶

Author contributions

TANO and SCG conceived the study, DAFE and NGLC carried out the research, OGS and DPR prepared the first draft of the manuscript and performed the statistical analysis. All authors were

involved in the revision of the draft manuscript and have agreed to the final content.

Competing interests

No competing interests were disclosed.

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Supplementary material

[Spanish version of the PTSS.](#)

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I've looked at the paper and generally it reads well, and doesn't seem to have many major problems methodologically, other than the fact that normally, for convergent and divergent validity, different scales that measure similar and dissimilar dimensions are used.

What the authors refer to as divergent and convergent validity in their manuscript when they compare the Spanish and English versions. This is simply the concordance between the scores of English and Spanish instruments, which gives between 88%-100% concordance. This simply might reflect language proficiency effects. I would suggest, therefore that the authors choose some other term for this than convergent and divergent validity as this is incorrect.

Competing Interests: No competing interests were disclosed.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Reviewer Report 11 July 2016

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The paper "Spanish translation and preliminary validation of the Pain Treatment Satisfaction

Scale" evaluates the validity of an already published pain treatment satisfaction scale, presented in a Spanish translation, on a Mexican population. After a careful double checked translation, the paper concludes that it is adequate for use in the pre-defined population.

This paper is published as a Research note, and indeed, considering the number of items included in the score (39), it can hardly be proposed in clinical practice for repeated measures.

If the quality of the translation has obviously been well controlled, it is not the case for the study population. No estimation of the number of subjects required to demonstrate the validity of the score has been made, despite the fact that the authors had comparators against which they could perform this estimation. 174 appears as a very low number for a population including both acute and chronic pain in a vast variety of patients. Indeed, if the translation is accurate, any difference in its validity will come mainly from socio-cultural factors in the population. The authors themselves are indeed conscious of this limitation, but they could have easily corrected it.

Competing Interests: No competing interests were disclosed.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

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