

Translation, adaptation and validation of the Spanish version of the Japanese Orthopaedic Association Cervical Myelopathy Evaluation Questionnaire (JOACMEQ)

Background: Cervical degenerative myelopathy (DCM) has a clear impact on quality of life and functionality. The Japanese Orthopaedic Association Cervical Myelopathy Evaluation Questionnaire (JOACMEQ) is self-administered and assesses the impairment caused by DCM and its impact on quality of life.

Research question: Does the Spanish version of the JOACMEQ retain the psychometric properties of the original JOACMEQ?

Design: Translation, adaptation and psychometric testing of a questionnaire.

Methods: after translation according to the good practices for the translation, cultural adaptation, and linguistic validation of observer-reported outcomes, a total of 180 patients (diagnosed with DCM or neck pain) completed this Spanish version from January to October 2021. Of the total, 101 also completed the Neck Disability Index (NDI).

The psychometric properties measured were construct validity, internal consistency, reproducibility, concurrent validity and discriminatory ability between patients with either DCM or neck pain.

Results: 145 patients (mean age of 62.53 (SD 9.92)) had diagnosed DCM, while 35 (52.71 (SD 10.29)) had neck pain.

A KMO test value of 0.874 and Bartlett's test of $X^2=1,584.98$ ($P = 0.000$) showed very good construct validity. Internal consistency proved to be high with a Cronbach's α coefficient of 0.912. The interclass correlation coefficient (Table 1) showed very good reproducibility. Regarding concurrent validity, a high correlation between the JOACMEQ quality of life domain and the Spanish NDI was also found (Spearman's $\rho = -0.847$, $P < 0.01$) (Table 2). Regarding the discriminatory ability, the ROC curves proved to be significant only in the upper (AUC = 0.65, $P = 0.006$) and lower (AUC = 0.661, $P = 0.003$) extremity domains (Table 3).

Discussion: Our version of the Spanish JOACMEQ retains the psychometric characteristics of the original JOACMEQ and could be useful for the evaluation and follow-up of patients with DCM in Spanish-speaking countries.

Table 1. Interclass Correlation Coefficient of the different domains of the questionnaire.

Domains	Intraclass Correlation Coefficient	P value
Cervical	0.854	< 0.01
Upper extremities	0.917	
Lower extremities	0.936	
Miction	0.942	
Quality of life	0.933	

Table 2. Spearman's correlation coefficient between the JOACMEQ domains translated into spanish and the spanish NDI

Domains	Spearman Correlation Coefficient	P - value
Cervical	-0.7	< 0.01
Upper extremities	-0.673	
Lower extremities	-0.571	
Miction	-0.449	
Quality of life	-0.847	

Table 3. Areas under the Curve of the ROC curves corresponding to the spanish JOACMEQ domains to discriminate between patients with and without DCM

Domains	Area Under the Curve	P - Value
Cervical	0.458	0.445
Upper extremities	0.65	0.006
Lower extremities	0.661	0.003
Miction	0.583	0.127
Quality of life	0.432	0.213