

# Development and validation of Arabic version of the Short-Form McGill Pain Questionnaire

## ABSTRACT

**Introduction:** The Short-Form McGill Pain Questionnaire (SF-MPQ) is a widely used tool for qualitative and quantitative pain assessment. Our aim was to translate, culturally adapt, and validate the SF-MPQ in Arabic.

**Methods:** A systematic translation process was used to translate the original English SF-MPQ into Arabic. After the pilot study, we validated our version in patients with chronic pain at two tertiary care centers. We tested the reliability of our version using internal consistency and test-retest reliability. We examined the validity by assessing construct validity, concurrent validity (by investigating the associations between SF-MPQ, Brief Pain Inventory [BPI], and Self-completed Leeds Assessment of Neuropathic Symptoms and Signs [S-LANSS]), and face validity. The questionnaire was administered twice to examine responsiveness.

**Results:** A total of 142 participants (68 men and 74 women) were included in this study. Cronbach's  $\alpha$  was 0.85 (95% confidence interval: 0.81–0.89), and interclass correlation coefficients were 0.71 (0.62–0.79) for the whole scale. SF-MPQ was moderately associated with patients' present pain ( $r = 0.55$ ,  $P < 0.001$ ) and the numerical rating scale ( $r = 0.42$ ,  $P < 0.001$ ). The total pain score was moderately correlated with pain severity and interference assessed with the BPI ( $r_s = 0.39$  to  $0.49$ , all  $P_s < 0.001$ ). SF-MPQ total pain score was weakly associated with neuropathic pain assessed with S-LANSS ( $r = 0.26$ ,  $P < 0.01$ ). Most patients found the SF-MPQ questions to be clear and easy to understand and thought the questionnaire items covered all their problem areas regarding their pain.

**Conclusion:** Our translated version of SF-MPQ was reliable and valid for use among Arabic-speaking patients. The SF-MPQ is a good qualitative and quantitative assessment tool for pain but is only weakly associated with neuropathic pain.

**Key words:** Anesthesia; Arabic; chronic pain; reliability; Short-Form McGill Pain Questionnaire; validity

## Introduction

Pain is perhaps the most common chief complaint. When sufficiently severe, pain can impair life quality and worsen

overall function. For example, the incidence of chronic pain, especially chronic back and neck pain, is increasing

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**ABDULLAH SULIEMAN TERKAWI<sup>1,2,3</sup>, SINY TSANG<sup>4</sup>, ABDULLAH ABOLKHAIR<sup>5</sup>, MOHAMMED ALSHARIF<sup>5</sup>, MOUSA ALSWITI<sup>2</sup>, ADWA ALSADOUN<sup>6</sup>, USAMA SALEH ALZORAIGI<sup>2</sup>, SALEH F. ALDHAHRI<sup>7</sup>, TARIQ AL-ZHAHRANI<sup>8</sup>, KHAILED ALI ALTIRKAWI<sup>9</sup>**

<sup>1</sup>Department of Anesthesiology, University of Virginia, Charlottesville, VA, <sup>3</sup>Outcomes Research Consortium, Cleveland, OH,

<sup>4</sup>Department of Epidemiology, Columbia University, New York, USA, <sup>2</sup>Department of Anesthesiology, King Fahad Medical City,

Departments of <sup>5</sup>Anesthesiology and <sup>6</sup>Medical/Surgical Nursing, King Faisal Specialist Hospital, Departments of <sup>7</sup>Otolaryngology,

<sup>8</sup>Anesthesiology and <sup>9</sup>Pediatrics, King Saud University, Riyadh, Saudi Arabia

**Address for correspondence:** Dr. Abdullah Sulieman Terkawi, Department of Anesthesiology, University of Virginia, 1215, Lee Street, Charlottesville, VA 22903, USA. E-mail: asterkawi@gmail.com

worldwide. In fact, chronic low back and neck pain is now the fourth most common cause of disability-adjusted life years worldwide across all ages and the first among people between 40 and 44 years old.<sup>[1]</sup>

The prevalence of chronic pain, particularly chronic pain associated with musculoskeletal disorders, is increasing in the Eastern Mediterranean region where most of the world's Arabic-speaking population resides. Musculoskeletal disorders include back, neck, knee, and shoulder chronic pain conditions. Low back pain and neck pain have the highest burden in Eastern Mediterranean regions countries and have the highest number of years lived with disability among other disorders. For example, the reported prevalence of low back pain ranges from 32/1000 in Kuwait to 159/1000 in Egypt.<sup>[2]</sup>

An individual's pain experience is influenced by various ethnic and cultural factors, which affect level of distress, coping style, and treatment preferences. Pain reporting is, therefore, a complex cognitive process that is influenced by specific cultural and environmental factors. Compounded by its subjective nature, accurate pain assessment is challenging. Various instruments are available to evaluate pain, such as the Brief Pain Inventory (BPI) and the McGill Pain Questionnaire (MPQ). The MPQ, introduced by Melzack and Torgerson in 1971, is among the most widely used instruments to evaluate pain. The original long-form of the questionnaire was modified to a shorter one (Short-Form MPQ [SF-MPQ]) in 1987.<sup>[3]</sup> The SF-MPQ is suitable to assess sensory, affective, and evaluative dimensions of pain. It is easy to administer and usually takes about 5 min to complete.

Arabic-speaking communities, estimated with a total population of almost 400 million as of 2015, are culturally diverse despite sharing a common language. Although the SF-MPQ has been translated into many languages and validated in many populations around the world, an Arabic version of the SF-MPQ is not yet available. Our goal was thus to translate, culturally adapt, and validate the SF-MPQ questionnaire in Arabic.

## Methods

A repeated measures study was conducted between September 2014 and December 2016 in two tertiary hospitals in Riyadh – Saudi Arabia: King Faisal Specialized Hospital (KFSH) (Institutional Review Board [IRB] approval No. 2141 101) and King Fahad Medical City (KFMC) (IRB approval No. 14-107). Data were captured electronically to standardize the data collection process and maintain quality.

## Translation and cultural adaptation

### *Initial translation (forward translation)*

Five bilingual translators from five Arabic countries (Syria, Saudi Arabia, Yemen, Sudan, and Egypt) with different dialects were assigned. All translators were native Arabic speakers; two were nonmedical. Each translator produced a written report of the translation that they completed, after which all the translators met to discuss the translation and came to a consensus of the translated version of the instrument.

### *Backward translation*

Two translators who were totally blind to the original (English) questionnaire were assigned to translate the final Arabic version back into the English language. This is a process of validity check to make sure that the translated version reflects the same item content as the original version. English (the source language) was the mother tongue for these two translators, and they were not aware of the concepts being explored.

### *An expert committee*

Composed of a methodologist, health professionals, and language professionals consolidated various versions of the questionnaire and developed the prefinal version of the questionnaire for field testing. The committee eventually reviewed all the translations and reached consensus on any discrepancy.

## Measures

### *Short-Form McGill Pain Questionnaire*

The SF-MPQ is a 15-item checklist assessing the sensory dimension (throbbing, shooting, stabbing, sharp, cramping, gnawing, hot-burning, aching, heavy, tender, and splitting) and affective dimension (tiring-exhausting, sickening, fearful, and punishing-cruel) of the pain experience. The 15 items are rated on a four-point pain intensity scale: 0 = none, 1 = mild, 2 = moderate, and 3 = severe. The sum of the intensity values for the corresponding descriptors yields the sensory (11 items), affective (4 items), and total (15 items) pain scores. In addition to the 15-item checklist, two items are included to assess the overall pain experience. Patients were asked to rate the level of their present pain on the present pain intensity (PPI) index: 1 = no pain, 2 = mild, 3 = discomfort, 4 = distressing, 5 = horrible, and 6 = excruciating. Patients also described whether their pain was brief, intermittent, or continuous. The SF-MPQ also includes a visual analog scale.<sup>[3]</sup>

### *Numerical rating scale*

Numerical rating scale (NRS) is an 11-point pain intensity score used to assess current overall pain intensity (from 0= “no pain” to 10= “pain as bad as you can imagine”).<sup>[4]</sup>

### **Brief Pain Inventory**

The BPI is used to assess patients' pain in clinical settings. Two domains of pain are assessed with the BPI – pain severity and pain interference. Pain severity is measured with four items, assessing pain at its “worst,” “least,” “average,” and “now” (current pain). The intensity of pain is rated from 0 (no pain) to 10 (pain as bad as you can imagine). Pain interference is measured with seven items, assessing the extent to which pain has interfered with seven daily activities (general activity, walking, work, mood, enjoyment of life, relations with others, and sleep). Patients rated, from 0 (does not interfere) to 10 (completely interferes), how pain has interfered with their functioning.<sup>[5]</sup> We used the MD Anderson Cancer Center Arabic BPI-SF version, a previously translated and validated version.<sup>[6]</sup> In the current study, Cronbach's  $\alpha$  was 0.82 and 0.87 for pain severity and pain interference, respectively.

### **Self-completed Leeds Assessment of Neuropathic Symptoms and Signs**

The Self-completed Leeds Assessment of Neuropathic Symptoms and Signs (S-LANSS) consists of seven items assessing pain of primarily neuropathic origin. It comprises a 7-item pain scale, including the sensory descriptors and items for sensory examination. A score of 12 or above with the S-LANSS suggests pain of predominantly neuropathic origin.<sup>[7]</sup> We used a previously translated and validated Arabic version of the questionnaire.<sup>[8]</sup> Cronbach's  $\alpha$  was 0.59 in the current sample.

### **Study protocol**

An Arabic version of the SF-MPQ questionnaire was administered twice to chronic pain patients in the pain clinic. This questionnaire was part of a package that contained other questionnaires (BPI and S-LANSS) as validating questionnaires (all in Arabic). Eligible patients were between 17 and 80 years old and reported chronic pain of at least 3 months' duration. Exclusion criteria included psychosis, significant visual impairment, physical disability, or patient's refusal to participate in the study. The patients completed the questionnaire for the first time (Time 1) in the clinic, after the researcher explained the purpose of the study, obtained verbal consent, and answered all queries. The questionnaire was completed the second time (Time 2) by telephone interview after at least 3 days.

### **Pilot study**

The prefinal version was pilot tested on a group of 34 patients (19 males and 15 females, data not shown). Both interviews (Time 1 and Time 2) were completed in person, after which the participants were asked about their experience and thoughts about the current version. No specific constructive feedback was received. The committee

met at this point and approved the prefinal version as final [the final Arabic version is presented in Appendix 1]. No changes were implemented to the prefinal version.

### **Assessing face validity**

After completing the SF-MPQ at Time 1, patients responded to five statements regarding the SF-MPQ items on a 5-point Likert-type scale: 1 = totally disagree, 2 = disagree, 3 = undecided, 4 = agree, and 5 = strongly agree. The five statements were: (1) questions were clear and easy; (2) questions covered all your problem areas regarding your pain; (3) you would like the use of this questionnaire for future assessments; (4) the questionnaire lacks important questions regarding your pain; and (5) some of the questions violate your privacy.

### **Statistical analysis**

All data analyses were performed in R version 3.3.2 (2016-10-31). Descriptive statistics (mean, standard deviation [SD], minimum, and maximum) were presented for all the SF-MPQ items, SF-MPQ composite scores (sensory, affective, and total pain scores), BPI items, and the S-LANSS composite score.

### **Reliability**

The internal consistency of the SF-MPQ was examined using Cronbach's  $\alpha$ . Cronbach's  $\alpha$  ranges from 0 (no internal consistency; none of the items are correlated with each other) to 1 (perfect internal consistency; all of the items are perfectly correlated with each other).  $\alpha$ s were computed for all the 15 items (total pain scores) as well as the sensory (11 items) and affective pain (4 items) subscales. An instrument with  $\alpha \geq 0.70$  is typically considered to have adequate internal consistency.<sup>[9]</sup> As  $\alpha$  is a function of the questionnaire's length,  $\alpha$  is expected to be lower for the subscales than for the total scale.

Test-retest reliability was assessed by a second administration (T2) of the SF-MPQ, after at least 48 h of the first administration (T1). The stability of the individuals' responses was estimated using the Pearson's correlation coefficients ( $r$ ) and intraclass correlation coefficients (ICCs) between their responses in the two administrations.  $r$ s and ICCs between the two assessments were computed for the SF-MPQ sensory, affective, and total pain scores. Test-retest reliability was considered to be weak if  $r < 0.3$ , moderate if  $0.3 \leq r < 0.5$ , and strong if  $r \geq 0.5$ .  $ICC \geq 0.70$  was considered to indicate good test-retest reliability.<sup>[10]</sup>

### **Validity**

Construct validity of the SF-MPQ was examined by investigating the associations between the SF-MPQ

composite scores (total, sensory, and affective pain), patients' present pain and pain description in the SF-MPQ, and the NRS. To establish concurrent validity of the SF-MPQ, the extent to which the SF-MPQ is correlated with two other validated measures of pain, the BPI and the S-LANSS, was examined. Pearson's correlation coefficient ( $r$ ) was used to evaluate the strength of the associations between continuous variables;  $r < 0.3$  was considered to be weak, moderate if  $0.3 \leq r < 0.5$ , and strong if  $r \geq 0.5$ . Given the ordinal nature of the SF-MPQ pain description (brief, intermittent, and continuous), linear regression models were used to examine the extent to which SF-MPQ scores differ among patients who described their pain as brief, intermittent, or continuous.

## Results

A total of 142 participants (68 men and 74 women) participated in the validation study of the SF-MPQ questionnaire. The average age was 51 years (SD = 16), with average body mass index of 32 kg/m<sup>2</sup> (SD = 8). Most of the patients had university-level education (42%), with fewer having received some high school (31%), less than high school (12%), or no education (15%). The majority of our patients were married (84%); 9% were single, 3% were divorced, and 4% were widowed. Twenty-eight percent were rated as American Society of Anesthesiologists Physical Status 1, 55% were rated as 2, 17% were rated as 3, and <1% were rated as 4. One hundred and nine (727%) patients were from KFSH and 33 (23%) from KFMC. Most of the patients (92%) reported having current pain.

The causes of chronic pain were radiculopathy 63 (44.3%), mechanical neck pain 11 (7.7%), musculoskeletal 10 (7%), osteoarthritis 10 (7%), nerve injury 8 (5.6%), failed back surgery syndrome 7 (5%), sacroiliitis 5 (3.5%), unknown cause 4 (2.8%), spinal stenosis 3 (2.1%), spinal cord injury 2 (1.4%), carpal tunnel syndrome 2 (1.4%), complex regional pain syndrome 2 (1.4%), postamputation 2 (1.4%), spondylolisthesis 2 (1.4%), trigeminal neuralgia 2 (1.4%), chronic headache 1 (0.7%), diabetic neuropathy 1 (0.7%), fasciculopathy 1 (0.7%), fibromyalgia 1 (0.7%), meralgia paresthetica 1 (0.7%), occipital neuralgia 1 (0.7%), rotator cuff tear 1 (0.7%), spondylosis 1 (0.7%), and thoracic outlet syndrome 1 (0.7%).

Patients were contacted for the second interview an average of 9 days (SD = 8) after their initial participation. The majority of the patients (92%) completed the second interview within 10 days after the initial interview.

The descriptive statistics of the SF-MPQ, NRS, BPI, and S-LANSS at Time 1 and Time 2 are presented in Tables 1 and 2, respectively.

**Table 1: Descriptive statistics of the Short-Form McGill Pain Questionnaire, numerical rating scale, Brief Pain Inventory, and Self-completed Leeds Assessment of Neuropathic Symptoms and Signs at Time 1 for chronic pain patients**

	Frequency (%) <sup>*</sup>	Mean	SD	Minimum	Maximum
<b>SF-MPQ</b>					
Throbbing	94 (66)	1.33	1.12	0	3
Shooting	87 (61)	1.42	1.24	0	3
Stabbing	81 (57)	1.32	1.26	0	3
Sharp	106 (75)	1.85	1.24	0	3
Cramping	77 (54)	1.19	1.21	0	3
Gnawing	45 (32)	0.65	1.06	0	3
Hot-burning	81 (57)	1.32	1.27	0	3
Aching	105 (74)	1.83	1.19	0	3
Heavy	103 (73)	1.68	1.17	0	3
Tender	95 (67)	1.65	1.28	0	3
Splitting	63 (44)	0.91	1.10	0	3
Tiring-exhausting	127 (89)	2.19	0.96	0	3
Sickening	97 (68)	1.58	1.22	0	3
Fearful	105 (74)	1.68	1.15	0	3
Punishing-cruel	118 (83)	2.11	1.09	0	3
Sensory	-	15.15	7.24	2	33
Affective	-	7.55	3.53	0	12
Total	-	22.69	9.99	2	45
<b>PPI</b>					
No pain	0	-	-	-	-
Mild	11 (8)	-	-	-	-
Discomfort	40 (28)	-	-	-	-
Distressing	36 (26)	-	-	-	-
Horrible	32 (23)	-	-	-	-
Excruciating	22 (16)	-	-	-	-
<b>Pain description</b>					
Brief	6 (4)	-	-	-	-
Intermittent	57 (40)	-	-	-	-
Continuous	79 (56)	-	-	-	-
NRS	-	6.91	1.80	2	10
<b>BPI</b>					
BPI worst pain	-	7.90	1.95	1.00	10
BPI least pain	-	4.35	2.44	0.00	10
BPI average pain	-	6.16	2.11	0.00	10
BPI current pain	-	5.92	2.65	0.00	10
Pain severity	-	6.10	1.86	0.75	10
Pain interference	-	5.26	2.41	0.71	10
S-LANSS	-	12.59	6.25	0.00	24

The 15 pain descriptions are listed in the same order as shown in our Arabic translation in the appendix. <sup>\*</sup>The frequency represents the number of patients who selected 1: Mild; 2: Moderate; or 3: Severe for each SF-MPQ item. SD: Standard deviation; PPI: Present pain intensity index; SF-MPQ: Short-Form McGill Pain Questionnaire; BPI: Brief Pain Inventory; NRS: Numerical rating scale; S-LANSS: Self-completed Leeds Assessment of Neuropathic Symptoms and Signs

## Reliability

Cronbach's  $\alpha$  for the SF-MPQ is shown in Table 3. Results showed good internal consistency for the overall 15 SF-MPQ items. The internal consistencies for the sensory and affective subscales were slightly lower as to be expected given the subscales consist of fewer items.

**Table 2: Descriptive statistics of the Short-Form McGill Pain Questionnaire, numerical rating scale, Brief Pain Inventory, and Self-completed Leeds Assessment of Neuropathic Symptoms and Signs at Time 2 for chronic pain patients**

	Frequency (%)*	Mean	SD	Minimum	Maximum
SF-MPQ					
Throbbing	93 (65)	1.34	1.12	0	3
Shooting	78 (55)	1.22	1.21	0	3
Stabbing	89 (63)	1.33	1.14	0	3
Sharp	119 (84)	2.06	1.08	0	3
Cramping	90 (63)	1.37	1.20	0	3
Gnawing	54 (38)	0.81	1.16	0	3
Hot-burning	82 (58)	1.29	1.25	0	3
Aching	114 (80)	1.86	1.10	0	3
Heavy	111 (78)	1.76	1.13	0	3
Tender	104 (73)	1.69	1.18	0	3
Splitting	67 (47)	0.96	1.11	0	3
Tiring-exhausting	130 (92)	2.23	0.92	0	3
Sickening	103 (73)	1.67	1.17	0	3
Fearful	106 (75)	1.68	1.15	0	3
Punishing-cruel	120 (85)	2.14	1.03	0	3
Sensory	-	15.63	7.09	0	33
Affective	-	7.72	3.33	0	12
Total	-	23.34	9.60	0	45
PPI					
No pain	2 (1)	-	-	-	-
Mild	13 (9)	-	-	-	-
Discomfort	39 (28)	-	-	-	-
Distressing	42 (30)	-	-	-	-
Horrible	28 (20)	-	-	-	-
Excruciating	18 (13)	-	-	-	-
Pain description					
Brief	10 (7)	-	-	-	-
Intermittent	57 (40)	-	-	-	-
Continuous	74 (53)	-	-	-	-
NRS	-	6.57	1.98	1	10
BPI	-				
BPI worst pain	-	7.50	2.15	1.00	10
BPI least pain	-	4.21	2.26	0.00	10
BPI average pain	-	5.95	2.07	0.00	10
BPI current pain	-	5.56	2.69	0.00	10
Pain severity	-	5.84	1.91	0.25	10
Pain interference	-	5.06	2.42	0.00	10
S-LANSS	-	11.81	6.45	0.00	24

The 15 pain descriptions are listed in the same order as shown in our Arabic translation in the appendix. \*The frequency represents the number of patients who selected 1: Mild; 2: Moderate; or 3: Severe for each SF-MPQ item. SD: Standard deviation; PPI: Present pain intensity index; SF-MPQ: Short-Form McGill Pain Questionnaire; BPI: Brief Pain Inventory; NRS: Numerical rating scale; S-LANSS: Self-completed Leeds Assessment of Neuropathic Symptoms and Signs

Test-retest reliability was estimated using patients ( $n = 129$ ) with complete SF-MPQ data for both interviews; patients with missing data on the SF-MPQ were omitted.  $r_s$  between the two interviews was 0.71 (95% confidence interval [CI]: 0.62–0.79), 0.72 (0.63–0.79), and 0.66 (0.55–0.74) for the total, sensory, and affective pain scores, respectively.

**Table 3: Cronbach's alpha for the Short-Form McGill Pain Questionnaire**

Scale	Number of items	Time 1 (95% CI)	Time 2 (95% CI)
SF-MPQ (total)	15	0.85 (0.81-0.89)	0.84 (0.81-0.88)
Sensory	11	0.77 (0.72-0.83)	0.77 (0.72-0.83)
Affective	4	0.80 (0.75-0.85)	0.78 (0.72-0.84)

SF-MPQ: Short-Form McGill Pain Questionnaire; CI: Confidence interval

ICCs were 0.71 (95% CI: 0.62–0.79), 0.72 (0.63–0.8), and 0.66 (0.56–0.75) for the total, sensory, and affective pain scores, respectively. Results suggested good test-retest reliability for the SF-MPQ total and sensory pain scores and moderate test-retest reliability for the affective pain dimension.

The correlations between the two assessments were also examined for patients' responses on the NRS ( $r = 0.51$ , 95% CI: 0.38–0.62), PPI ( $r = 0.73$ , 95% CI: 0.64–0.8), and the description of their pain ( $r = 0.61$ , 95% CI: 0.5–0.71). Results showed moderate to strong associations between the two assessments, indicating good test-retest reliability for these three individual items on the SF-MPQ.

**Validity**

**Construct validity**

The construct validity of the SF-MPQ was assessed by examining the correlations between the SF-MPQ, PPI, and the NRS at Time 1. Results in Table 4 showed that the SF-MPQ sensory, affective, and total pain scores were moderately associated with PPI ( $r_s = 0.47–0.57$ , all  $P_s < 0.001$ ) and the NRS ( $r_s = 0.38–0.42$ , all  $P_s < 0.001$ ). Patients who reported more pain on the SF-MPQ were more likely to report more pain on the PPI and scored higher on the NRS than those who reported less pain on the SF-MPQ.

The average SF-MPQ pain scores among patients who reported their pain as brief, intermittent, or continuous at Time 1 are illustrated in Figure 1. Linear regression models were used to examine the average differences on the SF-MPQ sensory, affective, and total pain scores among patients who described their pain as brief, intermittent, or continuous at Time 1. Results showed significant variation for SF-MPQ sensory ( $F(2, 133) = 4.77, P = 0.01$ ), affective ( $F(2, 134) = 9.09, P < 0.0001$ ), and total pain scores ( $F(2, 132) = 6.96, P = 0.001$ ). *Post-hoc* Tukey tests showed that patients who described their pain as continuous had statistically significantly higher sensory ( $t = 2.81, P = 0.01$ ), affective ( $t = 3.41, P = 0.002$ ), and total pain scores ( $t = 3.25, P = 0.004$ ) than those who described their pain as intermittent. Results from *post hoc* Tukey tests also showed that patients who described their pain as continuous

had statistically significantly higher affective ( $t = 3.09$ ,  $P = 0.006$ ) and total pain scores ( $t = 2.35$ ,  $P = 0.047$ ) than those who described their pain as brief.

To investigate the concurrent validity of the SF-MPQ, the extent to which the SF-MPQ was associated with the BPI and S-LANSS was examined. As shown in Table 5, the SF-MPQ sensory, affective, and total pain scores were moderately correlated with pain severity and interference assessed with the BPI ( $r_s = 0.39$ – $0.49$ , all  $P_s < 0.001$ ). The SF-MPQ sensory, affective, and total pain scores were also positively correlated with the four BPI items assessing the worst, least, average, and current pain ( $r_s = 0.27$ – $0.46$ , all  $P_s < 0.01$ ). The SF-MPQ sensory and total pain scores were weakly associated with

neuropathic pain assessed with S-LANSS ( $r_s = 0.23$ – $0.26$ , all  $P_s < 0.01$ ), whereas the association between SF-MPQ affective pain score and S-LANSS was not statistically significant.

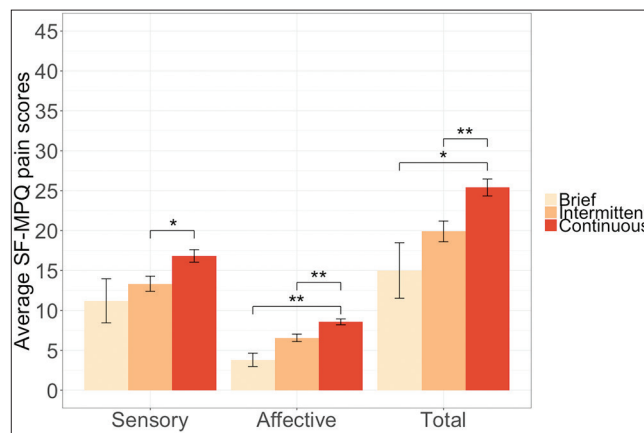
**Face validity**

Patients' responses to the five questions assessing the face validity of the SF-MPQ are presented in Table 6. The majority

**Table 4: Pearson correlation coefficients between Short-Form McGill Pain Questionnaire, present pain, and numerical rating scale at Time 1**

	Sensory	Affective	Total	PPI
SF-MPQ affective pain	0.67***			
SF-MPQ total	0.96***	0.84***		
SF-MPQ PPI	0.47***	0.57***	0.55***	
NRS	0.38***	0.40***	0.42***	0.60***

\*\*\* $P < 0.001$ . PPI: Present pain intensity index; SF-MPQ: Short-Form McGill Pain Questionnaire; NRS: Numerical rating scale



**Figure 1: Average Short-Form McGill Pain Questionnaire sensory, affective, and total pain scores by pain description at Time 1. Error bars represent standard errors (\* $P < 0.05$ ; \*\* $P < 0.01$ ). The maximum scores for total SF-MPQ pain scores are 45**

**Table 5: Pearson correlation coefficients between Short-Form McGill Pain Questionnaire, Brief Pain Inventory, and Self-completed Leeds Assessment of Neuropathic Symptoms and Signs at Time 1**

Questionnaire/Scale	SF-MPQ			BPI					
	Sensory	Affective	Total	Worst pain	Least pain	Average pain	Current pain	Severity	Interference
SF-MPQ									
Affective	0.67***								
Total	0.96***	0.84***							
BPI									
Worst pain	0.40***	0.46***	0.46***						
Least pain	0.38***	0.31***	0.38***	0.43***					
Average pain	0.33***	0.38***	0.37***	0.62***	0.63***				
Current pain	0.34***	0.27**	0.34***	0.41***	0.56***	0.60***			
Severity	0.45***	0.43***	0.48***	0.73***	0.82***	0.86***	0.82***		
Interference	0.39***	0.49***	0.46***	0.38***	0.36***	0.46***	0.37***	0.48***	
S-LANSS	0.26**	0.13	0.23**	0.25**	0.26**	0.26**	0.31***	0.33***	0.30***

\*\* $P < 0.01$ , \*\*\* $P < 0.001$ . SF-MPQ: Short-Form McGill Pain Questionnaire; BPI: Brief Pain Inventory; S-LANSS: Self-completed Leeds Assessment of Neuropathic Symptoms and Signs

**Table 6: Descriptive statistics for face validity**

	Mean	SD	Totally disagree (%)	Disagree (%)	Undecided (%)	Agree (%)	Strongly agree (%)
Questions were clear and easy	4.3	0.69	0	3.5	3.5	56	36.6
Questions covered all my problem areas regarding my pain	4.1	0.75	0.7	2.8	11.3	58	27.5
I would like the use of this questionnaire for future assessments	4.1	0.67	0	2.1	9.2	59	27.5
The questionnaire lacks important questions regarding my pain	2.6	0.96	6.3	52.8	23.2	13	4.9
Some of the questions violate my privacy	1.5	0.60	54.2	40.1	5.6	0	0

SD: Standard deviation

of the patients endorsed agree or strongly agree for the first three questions assessing face validity. Results showed that most patients found the SF-MPQ questions to be clear and easy to understand, the questionnaire items covered all their problem areas regarding their pain, and most would like to use the SF-MPQ for their long-term follow-up assessment. Most patients disagreed that the SF-MPQ lacks important questions regarding their pain, suggesting that the SF-MPQ addressed most, if not all, of the important issues associated with their pain. Finally, none of the patients felt that the SF-MPQ questions violated their privacy.

## Discussion

A common limitation of pain assessment tools is their sociocultural dependence, which limits their use in different populations. A simple translation of a given instrument is of little value due to the difficulty of matching the conceptual semantics and metric equivalencies of the items between different languages. The adaptation process overcomes this problem by creating a translated version with a better cultural fit to the intended population.

Our results indicated good internal consistency and good test-retest reliability for the Arabic version of the SF-MPQ. SF-MPQ sensory, affective, and total pain scores were moderately associated with NRS. The SF-MPQ sensory, affective, and total pain scores were moderately correlated with pain severity and interference assessed with the BPI and weakly associated with S-LANSS. As in previous studies, the SF-MPQ showed only weak correlation with neuropathic pain.<sup>[11]</sup> The weak correlation between the SF-MPQ and S-LANSS suggests that the SF-MPQ is not a good predictor of neuropathic pain as the SF-MPQ does not include symptoms specific to neuropathic pain, such as numbness.

Our findings indicate that our translated version of the SF-MPQ is reliable and valid for use in Arabic-speaking patients. All selected descriptive pain words in our questionnaire were used at least by one-third of the sample. This cutoff was used as a requirement for deciding if the selected word is appropriate to describe the pain state in the group studied.<sup>[3]</sup> The most commonly used description was “tiring-exhausting” (89%–92%), and the one used least was “gnawing” (32%–37%). The descriptions “punishing-cruel” and “tiring-exhausting” were associated with highest pain intensity scores.

Translation of a preexisting questionnaire into a different language and its subsequent validation is important to understand the psychometric properties of a given scale and enable cross-cultural comparisons. The SF-MPQ was

previously translated and validated into multiple languages including Spanish,<sup>[12]</sup> Brazilian–Portuguese,<sup>[13]</sup> Greek,<sup>[14]</sup> Japanese,<sup>[15]</sup> Thai,<sup>[16]</sup> and Turkish.<sup>[17]</sup> The introduction of an Arabic version of the SF-MPQ will allow clinicians and researchers to examine the similarities and differences in pain among patients from different countries.

Although none of the participants thought any of the questions violate their privacy, about 5% were undecided. About 18% of the participants thought that the questionnaire lacks important questions about their pain. As none of the participants provided additional comments with respect to their response choices, it is unclear whether specific revisions can be made for improvement for the current translated version. Future studies should consider examining whether additional items need to be included to further address issues related to pain that may have been overlooked in the SF-MPQ.

## Conclusion

Our translated version of SF-MPQ was reliable and valid for use among Arabic-speaking patients. Furthermore, we provided a validated translation for commonly used pain descriptions that can be used in various clinical situations for pain assessment.

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## Conflicts of interest

There are no conflicts of interest.

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**Short-Form McGill Pain Questionnaire (SF-MPQ)**

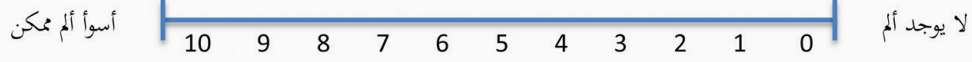
عزيزي المريض:

بما أنك قد ذكرت لنا أن أحد الأعراض والمشاكل المصاحبة لك هو الألم الجسدي، فإن الغرض من هذه الإستبيان هو تقييم شعورك بهذا الألم. علماً أن كلاً من الكلمات في العمود الأيمن يصف نوعية وميزة الألم لديك. ولذلك، يرجى تقييم نوع الألم الذي تشعر به بوضع علامة (✓) أمام كل نوع في العمود الأيمن وعلى حسب شدة الألم، حيث أن (0) تعني لا يوجد، (1) خفيف، (2) متوسط، (3) شديد.

الرجاء وضع علامة (✓) في المكان المناسب:

نوع الألم	(0) لا يوجد	(1) خفيف	(2) متوسط	(3) شديد
1- أشعر بالألم كالنبض (خافق)				
2- أشعر بالألم ضارب				
3- أشعر بالألم كالطعنات				
4- أشعر بالألم حاد				
5- أشعر بالألم كالتقلصات				
6- أشعر بالألم قارض (قضم)				
7- أشعر بالألم حارق				
8- أشعر بالألم ثابت موجع				
9- أشعر بالألم الإحساس بالثقل				
10- أشعر بالألم عند الضغط أو اللمس				
11- أشعر بالألم كالتمزق (تقطيع)				
12- الألم مُتعب و مرهق				
13- الألم مُمرض (مقزز)				
14- الألم مقلق (مخيف)				
15- أشعر بالألم قاسي – شديد				

الرجاء قم بوضع دائرة حول الرقم الذي يعكس شدة الألم لديك:



الرجاء اختيار أفضل خيار يصف الألم الذي تشعر به :

1. لا يوجد ألم
2. ألم خفيف
3. ألم مزعج
4. ألم مقلق
5. ألم فظيع
6. ألم مبرح معذب جداً

هل الألم الذي تشعر به في الوقت الحالي؟  
 يأتي على فترات قصيرة  متقطع  متواصل  
 (اختر اجابة واحدة):

From: Ronald Melzack, The short-form McGill Pain Questionnaire. Pain, 30 (1987) 191 – 197.