Development of a Short-Form McGill Pain Questionnaire for use in Libyan Populations

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Article Type: Original Article

Short Title: Libyan Short-Form McGill Pain Questionnaire

ABSTRACT

Objectives: The Short-Form McGill Pain Questionnaire (SF-MPQ) is an English language based tool used to assess sensory, affective and evaluative aspects of pain. The aim of this study was to develop a culturally valid version of SF-MPQ for use in Libya for pain patients.

Setting: Data was collected at the Ibn Sina Hospital, Sirt, Libya.

Design: The SF-MPQ was translated and back-translated into Arabic by 4 university teachers and 8 university students fluent in Arabic and English to generate an Arabic version of the SF-MPQ. A Libyan dialect equivalent was created following discussion with 4 physicians and 6 pain patients. A group of 40 pain patients (mean age 35.3 years) attending an outpatient Physiotherapy clinic in Sirt City completed the Libyan SF-MPQ.

Results: It was found that the Libyan SF-MPQ scored 0.15 for Cronbach's alpha indicating poor internal reliability. SF-MPQ descriptors “Shooting” and “Gnawing” were problematic during translation and only three words “Throbbing”, “Cramping” and “Tiring-Exhausting” met criterion for content validity. Intensity scores for sensory descriptors of pain chosen by the 40 patients was high and scores for affective descriptors low.

Conclusions: The Libyan SF-MPQ had poor internal reliability suggesting that further development of the tool is needed. Nevertheless, this first version of the Libyan SF-MPQ will be of value for health care professionals, especially as the intensity of pain in the population of Libyan patients was high. The findings of this research emphasise the need for socially-oriented research on cultural attitudes towards reporting of pain.

[246 words]

Contribution of the Paper

- We developed a Libyan Short Form-McGill Pain Questionnaire (SF-MPQ)
- This Libyan SF-MPQ found a high severity of pain in a population of patients attending an outpatient Physiotherapy clinic in Sirt City, Libya
- This version of the Libyan SF-MPQ had poor internal reliability suggesting that further development of the tool is needed

Keywords: Pain, Arabic, Libya, McGill Pain Questionnaire, Cultural Adaptation

INTRODUCTION

Pain is a subjective and multidimensional phenomenon, which is impossible to measure objectively. Questionnaires have been designed to capture the emotional and cognitive aspects of pain. The McGill Pain Questionnaire (MPQ) [1] and its Short-Form derivatives [2, 3] are widely used to assess the different qualitative aspects of pain. The MPQ is a multidimensional scale designed to index the quality and intensity of a person's pain experience. The original MPQ comprised 78 pain descriptors allocated into 20 subclasses of qualitative and quantitative verbal descriptors designed to measure the sensory, affective, evaluative, and miscellaneous dimensions of pain. The person completes the MPQ by selecting words from a list of adjectives that best reflects the quality of their painful experience and the intensity of pain related to each adjective is rated as none, mild, moderate or severe (see Methods). Scores are calculated for adjectives associated with sensory and affective dimensions of pain.

The relatively long duration of time required to complete the MPQ (15-20min) precludes its use for routine clinical practice. In attempt to reduce the complexity of the original MPQ a shorter version of the MPQ was developed (Short-Form MPQ, SF-MPQ) that takes approximately 5 minutes to complete and consists of 11 sensory and 4 affective descriptors [4]. Recently, the SF-MPQ was modified to include neuropathic symptoms and 0-10 point ratings of descriptors and named the SF-MPQ-2 [3]. Full and short versions of the MPQ have been shown to be valid and reliable for clinically and experimental research [5-8].

The SF-MPQ has been successfully translated and culturally adapted into many languages [9-25]. Interestingly, we have found only one Arabic version of the SF-MPQ [26] and the SF-MPQ-2 [27, 28] which have been developed for use in Iran. Generally, there has been little attention given to the use of Arabic words of pain or the translation and cultural adaptation of the MPQ in the Middle East and North Africa. A multidisciplinary panel of Middle East and international experts have identified a need for the development of validated screening questionnaires for the assessment of pain populations from the Middle East and North Africa [29]. Previously we have translated and culturally adapted the Self-Completed Leeds Assessment of Neuropathic Symptoms and Signs (S-LANSS) Scale [30] and the Gender Role Expectation of Pain Questionnaire [31] for use in Libyan populations. The aim of this study

was to develop a culturally valid version of SF-MPQ for use in Libya for pain patients in a Libyan teaching hospital. We translated the original SF-MPQ rather than the revised SF-MPQ-2 because we had already translated the S-LANSS for the screening of neuropathic pain.

METHODS

This study involved translation of the SF-MPQ into an Arabic equivalent modified to include Libyan dialect and linguistic validation of the questionnaire using prospective cross-sectional observational data. Ethical approval for this research was given by the University of Al-Tahadi and Ibn Sina Hospital, Sirt, Libya where the study was conducted.

The SF-MPQ/ Arabic-SF-MPQ

Permission was granted from the developer of the SF-MPQ [4], to translate and back translate the SF-MPQ from English into Arabic. The SF-MPQ enables calculation of Pain Rating Index (PRI) from 15 descriptors (11 sensory and 4 affective) rated according to intensity as None (0), Mild (1), Moderate (2) or Severe (3); the Present Pain Intensity (PPI) index by selecting one of the following no pain (0), mild (1), discomforting (2), distressing (3), horrible (4), excruciating (5); and overall pain intensity from a 100mm visual analogue scale (VAS) anchored with no pain (0mm) and worst possible pain (100mm). PRI is calculated adding scores for intensity for all descriptors (out of 45) sensory dimensions (out of 33) and affective dimensions (out of 12). The total number of descriptors chosen is also used as part of PRI.

Translation

A multi-step forward-backward translation method was used which required collaboration between health care professionals and native Arab translators who were fluent in English. The translation process consisted of the following stages:

1. The SF-MPQ was translated into Arabic by 4 university lecturers working at Universities of Benghazi and Sirt and 8 university students studying at University of Sirt.
2. The translated words were back-translated from Arabic into English by individuals who were not involved in stage 1. There were 3 university lecturers working at University of Sirt and 3 university students studying at University of Sirt. All translators were fluent in Arabic and English.
3. An Arabic version of the SF-MPQ was produced by the authorship team through discussion and consensus.

To establish a Libyan Dialect equivalent for each descriptor the Arabic version of the SF-MPQ was completed by 6 patients of Libyan origin attending physiotherapy department at Ibn Sina hospital, Sirt who experienced chronic pain and 4 Libyan physicians working at Ibn Sina Hospital. After completing the Libyan Dialect equivalent SF-MPQ these individuals were asked to disclose any issues encountered with the clarity and meaning of descriptors, terminology and instructions.

Linguistic Validation

The process of linguistic validation of the Libyan Dialect equivalent SF-MPQ was conducted by one of the investigators (OAM) at the outpatient Physiotherapy clinic of Ibn Sina Hospital, Sirt City, Libya. Forty pain patients (mean age 35.3 years, 28 women) who were attending the outpatient Physiotherapy clinic of Ibn Sina Hospital for pain management were invited to take part. All of these patients consented to take part. Patient demographic data were collected including gender, age, education level, and employment status. Medical background information including diagnosis was obtained from the physiotherapy department's records under the supervision of the physician in charge. Patients completed a paper version of the Libyan Dialect equivalent SF-MPQ without any prompting from the investigator. For four patients who were unable to read the investigator read from the form verbatim and transcribed verbal responses onto a paper version of the form.

Internal consistency reliability of the Libyan-SFMPQ was examined using Cronbach's alpha values. Internal consistency reliability is considered good when Cronbach's alpha values are 0.7 or higher. Statistical analysis was conducted using Statistical Package of the Social Sciences (SPSS) version 20. (SPSS Inc., Chicago, IL).

RESULTS

Translation

The classical Arabic version of the SF-MPQ pain descriptors are shown in Table 1. However, the 6 patients who attempted to fill the questionnaire complained that some words were ambiguous (e. g. shooting and gnawing).

[Insert Table 1 here]

The final version of the Libyan Dialect equivalent SF-MPQ is shown in Figure 1. It was decided to design the Libyan Dialect equivalent SF-MPQ as a composite of Arabic words with Libyan words in brackets. During translation of Arabic SF-MPQ to the Libyan Dialect equivalent process the words “Shooting” and “Gnawing” proved problematic and were replaced by phrases more familiar to Libyan language. For 12 descriptors a Libyan dialect equivalent was produced and for the three pain descriptors of *Punishing-Cruel, heavy and sharp* the Arabic words were understood by patients.

[Insert Figure 1]

Linguistic Validation

Twenty of the 40 patients presented with back or neck pain. The remaining patients presented with other musculoskeletal problems like frozen shoulder (5), knee pain (4), foot pain (3), post-operative pain (3), osteoarthritis (3) and post-traumatic pain (2). Only three words met Melzack's criterion for content validity (i.e. at least a third of patients have used the word). The words were Throbbing, Cramping and Tiring-Exhausting. Only one patient (2.5%) used the word fearful to describe her pain. Five descriptors were only used by two patients (5%). These were: shooting, tender, splitting, sickening and punishing/cruel. Words that denote affective dimensions of pain scored (1.1±1.4) on intensity rating of descriptors which was significantly less than words denoting the sensory dimension of pain which scored (3.9±2.5, $P=0.001$). Women scored significantly higher than men on all aspects of the Libyan SF-MPQ ($P<0.05$), (Table 2).

[Insert Table 2 here]

The Libyan SF-MPQ scored 0.15 for Cronbach's alpha indicating poor internal reliability. Despite this, the intensity score of the chosen words was very high (2.2±0.5). The Libyan-SF-MPQ total score was found to be correlated with the VAS (r=0.37, P=0.02). The Libyan patients were able to use the VAS to rate their pain and was correlated significantly with PPI (r=0.62. P<0.01).

DISCUSSION

Our Libyan version of the SF-MPQ reliably documented pain intensity (VAS and PPI) and the Libyan patients reported that they were easy to use. VAS and PPI were significantly correlated with total score of Libyan SF-MPQ suggesting that it reflects the pain intensity of patients to some degree. However, the findings for internal consistency and content validity suggest that our Libyan SF-MPQ failed to measure sensory and affective dimensions of pain in this group of patients. Such failings are not unique, for example Burkhardt and Bjelle identified shortcomings when using the Swedish SF-MPQ in certain painful conditions such as rheumatoid arthritis [14]. The failure may be due to shortcomings in SF-MPQ translation and development, the type of pain patients who participated in stage 3, and/or cultural and linguistic differences in pain reporting. It may also be due to conflict between dialect and classical use of Arabic words by patients and health professionals.

Despite our attempt to mix dialect and classical Arabic words some patients found it difficult to comprehend the meaning of classical Arabic. It is therefore suggested that a database of descriptive Libyan words should be developed first and then the words can be categorised in the same way as in the development of the original MPQ. Harrison's database of Arabic words describing pain was a pioneering effort [32], but its shortcoming was neglecting the significance of dialect and the spoken language used by patients to describe their pain. Regional differences in the spoken language, even in the same Arabic country, can dramatically affect the comprehension of pain descriptors by patients and health professionals. We translated the SF-MPQ in Sirt using the local dialect and while we acknowledge that the differences in the spoken language within the Libyan region is slight we believe that the Libyan SF-MPQ should be validated for use in other parts of Libya as well.

Despite these shortcomings, we believe that the Libyan SF-MPQ will be of value for health care professionals in Libya and in other parts of the world where there are significant numbers of Libyans, including the UK. The Libyan dialect of Arabic is also spoken in East Tunisia and Western Egypt so the Libyan SF-MPQ will also be helpful to communities originating from these areas. Nevertheless, we express caution about generalising the findings given the small regional sample used in our study.

We hope that this Libyan SF-MPQ will catalyse further development of culturally adapted pain descriptors for use with pain patients in the Middle East and North African region, including Libya. Future versions of this Libyan SF-MPQ could add new words that are used by Libyans during clinical consultations to the existing structure of the SF-MPQ. Previously, we have been successful in translation and linguistic validation of the Self-Completed Leeds Assessment of Neuropathic Symptoms and Signs (S-LANSS) Scale [30] and the Gender Role Expectation of Pain Questionnaire [31] for use in Libyan populations. We translated the original SF-MPQ rather than the revised SF-MPQ-2 which was expanded to include neuropathic pain by the addition of 7 descriptors, because we had already translated the S-LANSS. In future, we plan to validate the SF-MPQ-2 for use on Arab patients. However, it is necessary to investigate whether doctors and health care professional in Libya accept the use of pain assessment tools, such as the SF-MPQ as a means to improve their service.

In conclusion, the Libyan SF-MPQ had poor internal reliability and only three words, Throbbing, Cramping and Tiring-Exhausting, met criterion for content validity. Therefore, further development of the tool is needed to generate descriptors that appropriately reflect words used by Libyan patients during clinical consultations. Nevertheless, this first version of the Libyan SF-MPQ will be of value for health care professionals, especially as the intensity of pain in our sample population was high. When using the Libyan SF-MPQ, patients in our sample rated the intensity of sensory dimensions of pain much higher than affective dimensions of pain. This may be because Libyan patients are resistant to expressing emotional aspects of their pain, or that patients interpreted affective descriptors literally rather than applying them to a pain context. Hence, this study emphasises the importance of semantics when assessing pain in Libyan patients. Socially-oriented research on cultural attitudes towards reporting of pain is clearly needed.

ACKNOWLEDGEMENTS

The authors wish to express thanks to the anonymous reviewers for their constructive comments.

Ethical Approval: University of Al-Tahadi and Ibn Sina Hospital, Sirt, Libya

Funding: The project was funded by the University of Al-Tahadi and Ibn Sina Hospital, Sirt, Libya and the Faculty of Health and Social Sciences at Leeds Beckett University, UK.

Conflicts of Interest: None for all authors

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Table 1
The 15 descriptors in the original English SF-MPQ and the classical Arabic equivalent.

Dimension	Order	SF-MPQ descriptors in English	SF-MPQ descriptors in classical Arabic
Sensory	1	Throbbing	نابض
	2	shooting	موخز
	3	Stabbing	ثابت
	4	Sharp	مبرح
	5	Cramping	ممغص
	6	Gnawing	مزعج- يقضم
	7	Hot-burning	حارق
	8	Aching	ألم متواصل خفيف
	9	Heavy	ثقيل
	10	Tender	موجع عند اللمس
	11	Splitting	ممزق
Effective	12	Tiring-Exhausting	متعب- مجهد
	13	Sickening	مسبب للدوار
	14	Fearful	مخيف
	15	Punishing- cruel	قاسي

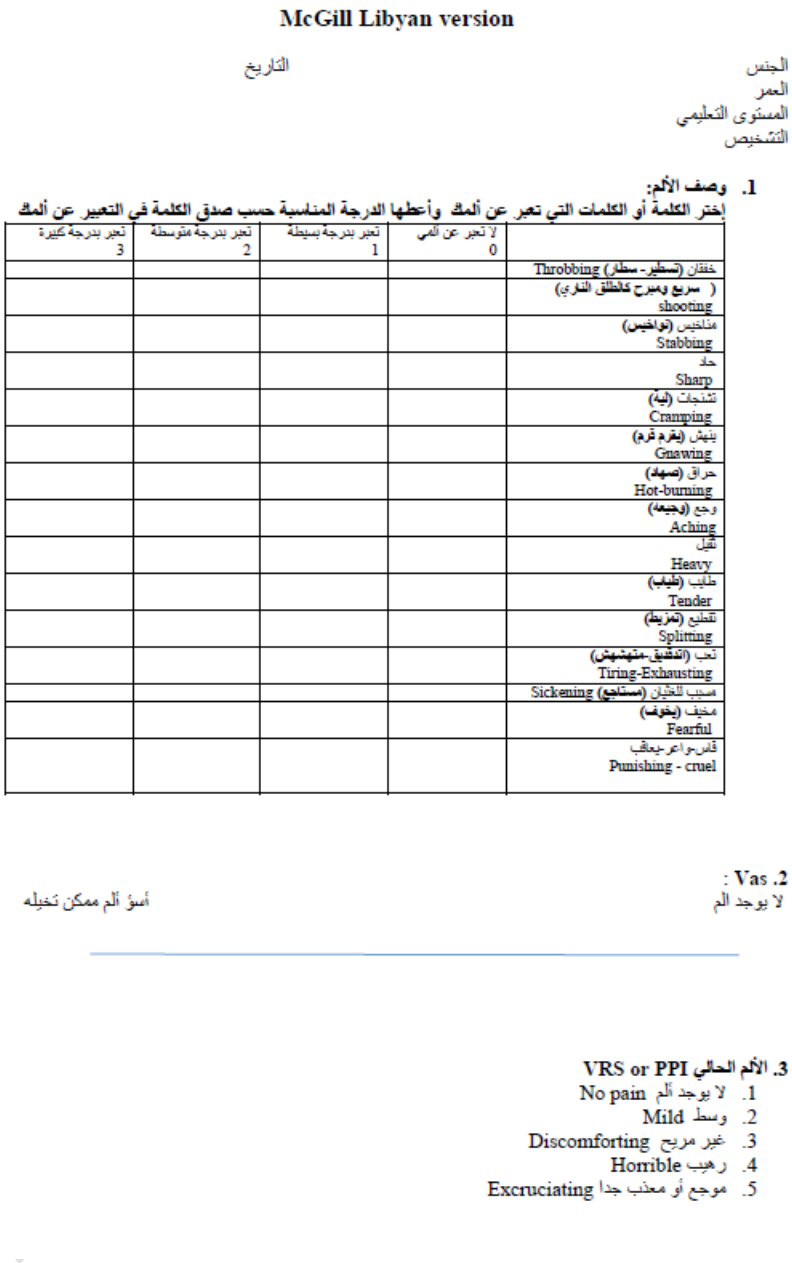
Table 2

SF-MPQ scores for Libyan dialect

	Male patients (n=12)		Female patients (n=28)		Total patients (n=40)	
	Mean	SD	Mean	SD	Mean	SD
SF-MPQ score	2.8	1.2	5.9	2.6	4.98	2.72
Sensory score	2.2	0.9	4.6	2.6	3.88	2.48
Affective score	0.6	1.1	1.3	1.5	1.10	1.43
PRI	0.6	0.7	1.6	1.3	1.30	1.20
VAS (mm)	21.6	27.9	61.8	26.5	49.70	32.48

Figure 1

Libyan SF-MPQ. VAS = Visual Analogue Scale for overall pain intensity scores. PPI = Present Pain Intensity index (VRS = Verbal Rating Scale).



McGill Libyan version

الجنس التاريخ

العمر

المستوى التعليمي

التشخيص

1. وصف الألم:

إختر الكلمة أو الكلمات التي تعبر عن ألمك وأعطها الدرجة المناسبة حسب صدق الكلمة في التعبير عن ألمك

	لا تعبر عن ألمي 0	تعبر بدرجة بسيطة 1	تعبر بدرجة متوسطة 2	تعبر بدرجة كبيرة 3
خفقان (تسطير - سطار) Throbbing				
(سريع ومبرح كالطلق الناري) shooting				
مناخيس (نواخيس) Stabbing				
حاد Sharp				
تشنجات (ليه) Cramping				
ينهش (يقرم قرم) Gnawing				
حراق (صهاد) Hot-burning				
وجع (وجيعه) Aching				
ثقيل Heavy				
طايب (طيب) Tender				
تقطيع (تمزيط) Splitting				
تعب (التفليق-متهشش) Tiring-Exhausting				
مسبب للغثيان (مستاجي) Sickening				
مخيف (يخوف) Fearful				
قاس-واعر-يعاقب Punishing - cruel				

2. Vas :

لا يوجد ألم أسوأ ألم ممكن تخيله

3. الألم الحالي VRS or PPI

1. لا يوجد ألم No pain
2. وسط Mild
3. غير مريح Discomforting
4. رهيب Horrible
5. موجع أو معذب جدا Excruciating