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Translation, Adaptation and Reliability of Persian-McGill Pain Questionnaire (P-MPQ) in Iranian Cancer Patients

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ABSTRACT

Introduction: McGill pain questionnaire (MPQ) is the most useful standard tools for pain assessment. Due to cultural differences, the questionnaire has been translated into several languages. We aimed to translate and adapt MPQ into Persian language and assess its reliability in Iranian cancer patients.

Methods: The MPQ was translated by translation-base method with preserving the original structure. Subsequently we used Persian McGill Pain Questionnaire (P-MPQ) and interviewed 84 patients and repeated the interview after 24 hours in 30 patients.

Results: Alpha coefficient of questionnaire (n=84) was 0.85 and the stability coefficient (n=30) in all areas (sensory, emotional, and other assessment) were more than 0.8. Stability coefficient was significant and reliable for all the MPQ subclasses.

Conclusion: Adaptation and reliability of Persian-McGill Pain Questionnaire (P-MPQ) are enough for epidemiologic studies of chronic pain in cancer patients in Iran.

Keywords: ***Translation, Adaptation, Reliability, McGill Pain Questionnaire, Persian, Cancer***

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Introduction

Pain is a personal experience, affected by different factors including cultural factors, patient's experiences and conception, education, family conditions and psychological factors (Bahram poor et al. 2004). Measurement and management of chronic pain in cancer patients is complicated because of association with bodily and mental symptoms such as depression and fatigue that all affecting quality of life(Abel et al. 1987; Allen et al. 2008). Cancer patients are usually referred for pain control in the advanced stages, when pain control is one of the main goals of treatment. Therefore evaluation and documentation of the pain is highly important in the clinical practice of oncology.

Several simple criteria have been applied for rating of the pain severity(Bahram poor et al. 2004). For instance, the measurement scales are usually verbal and patient state that their pain as mild, moderate or severe. However, considering unpleasant psychological stimulus which exacerbate the pain, would be more appealing to use a more sensitive and specific methods, such as interview for the pain assessment.

The McGill pain questionnaire (MPQ) assesses the quality of pain experience and has been suggested to be the most acceptable interviewing instrument for evaluation of the acute and chronic pain (Abel et al. 1987; Allen et al. 2008; Jensen et al. 2012; Ngamkham et al. 2012). MPQ structure is in a way that could be used for different kinds of pain. Patients with similar symptoms and signs but different socioeconomic and educational levels, choose the same words to describe their pain(Varoli 2006). The other advantage of MPQ is the unique description about pain quality(Kalaidopoulou & Mystakidou 2002) that makes it easy to compare results from pain surveys among different countries(Malhan et al. 2007).

Although MPQ has been widely used in English-speaking countries(Abel et al. 1987), it has also been translated to other languages and culture settings, such as German, Greek, Turkish and Brazilian(Abel et al. 1987; Varoli 2006; Kalaidopoulou & Mystakidou 2002; Malhan et al. 2007; Costa et al. 2009; Hasegawa et al. 1996).To the best of our knowledge, this is the first systematic attempt for translation, cross-culture adaptation and evaluation its reliability of long version of the McGill Pain Questionnaire to Farsi language. We believe that this questionnaire can be used to study the pain control among Iranian cancer patients, especially in the palliative care services which is growing in our country.

Methods

Instrument: McGill pain questionnaire (MPQ) contains 78-word for the description of Pain within 20 subclasses and a five-point intensity scale which is called the present pain intensity scale [PPI] and an image that shows the area where patient feel pain. The 20 subclasses are classified into three category including sensory (No. 1-10), affective (No. 15-11), evaluative (No. 16) and a miscellaneous subscale (No. 20-17).Patients had 2 to 6 option in each subclass to respond the questions and show the intensity of the pain and the best presentation of the pain (Melzack 1975).

Translation and Adaptation: We used World Health Organization and Melzak guidelines for the translation and adaptation of the questionnaire(Kalaidopoulou & Mystakidou 2002; WHO 2012).McGill pain questionnaire were translated in Persian language by two translators (a native speaker to the English language and an expert in scientific paper translation). After comparing the two translations, the discordant phrases were sent to a third translator. Then we set a meeting between three translators and the research team including two epidemiologists, a medical oncologist, and a medical student to reach a consensus on final manuscript. In the back translation, the Persian version of the McGill pain questionnaire was reversed to English by a new translator who was fluent in both Persian and English languages and did not aware of the original version of the MPQ. The result was compared with the original MPQ to verify the accuracy of the translation. The discordant words were reviewed by the translators and were modified or replaced by a new word. We realized that for some words we need examples or short explanation to convey the main meaning of the words of the MPQ.

Reliability: After signing informed consent, we interviewed 84 patients with different types of cancers who were admitted to the Cancer Institute of Iran in 2012; the largest cancer center located in the capital city of Tehran and admits cancer patients from the entire country.

We recruited the patients who were suffering from pain at the admission and excluded those who had used pain killers 24 hours before the interview. There was no restriction for age, sex, education, type of cancer or stage of disease. All patients completed the questionnaire, while only 30 patients who reported no major changes in their pain intensity in 24 hours were re-interviewed for the test-retest reliability analyses. Due to low literacy levels and inability of the patients to comprehend the questionnaire, they could not use self-administered questionnaire. Therefore all the questionnaires were completed by a trained interviewer who interviewed the cancer patients. To ensure about the quality of the interviews and appropriate use of the questionnaire, we developed a protocol in which we described the structure of questionnaire, how to conduct the interview, definition of the key words and expressions. We also added the analytic approach of the questionnaire at the end of this protocol. This protocol is available on the request.

Statistical Analysis: The pain rating index (PRI) is the sum of the rank values selected by the patient in the each subclass. We calculated the scores for the all answers as the total score (PRI-T) and in three subscales including sensory (PRI-S), affective (PRI-A), and evaluative (PRI-E), and the miscellaneous subscale (PRI-M) subclasses(Hasegawa et al. 1996). We estimated the reliability of the questionnaire using internal consistency and test–retest reliability analyses. We estimated Cronbach's alpha coefficient to measure the internal consistency of the questionnaire. In addition, we used Pearson correlations to estimate the stability of the answers in the test-retest analyses. An alpha coefficient higher than 0.7, was considered as an acceptable level for the reliability of the questionnaire.

Results

In overall, we interviewed 84 cancer patients who were complaining from the pain. Average ages of the patients' were47.7 years (standard deviation, SD 1.6). Most were female (63%) with a normal performance status (47%) (**Table1**). On average, it took about 30 to 40 minutes to complete the Persian version of the MPQ.

Average of the total score was 24.1 (±SD13.2) and the mean scores for the sensory, affective, evaluative, and miscellaneous subscales were 13.3 (±SD 7. 7), 3.6 (±SD 2.7), 1.6 (±SD 1.61), 5.6 (±SD 3.7), respectively. Highest and lowest average score was observed for subclasses 9 (mean 2.85, ± SD 2.06) and subclasses 6 respectively (mean=0.30, ± SD 0.67). While 65 patients (77.3%) selected subclasses 8, 11, 16 and 17,less than 25% of the patients selected subclass 4 (17%), subclass 6 (21%). Specifically, the most prevalent selected options were "shooting" (63%) from subclass No.2, "tenderness" from subclass No. 10 (51%), and "annoying" from subclass No. 16 (47.6%) (**Table2**). Nobody described their pain with phrases "lacerating in subclass No. 4, "searing" from subclass No.7, and "terrifying" from subclass No.13.

We found that Iranian patients did not use some of the MPQ words included to describe their pain. For example, the patients did not used translation of "sharp" which is "tiz" in the Persian language to describe pain. Therefore, we used explanation like "sudden intense pointed pain" to keep it in the Persian version of the MPQ. For a few words like "throbbing", we suggested using the words such as "zoghzogh kardan"from colloquial Persian speech which was more relevant equivalent for the Iranian patients. Although some words "boring" and "piercing" had the same meaning in Farsi language, we kept both of them in the Persian version of the MPQ. To express the difference more obvious, we applied examples in parentheses. For example, we express "piercing" which is "surakh konandeh" in the Persian language by "like piercing with needle". However, these similarities can be taken into account in the statistical analyses.Although some terms in English did not have equivalent descriptors in Farsi language; cross-cultural adjustments would be a valid and efficient alternative to overcome this difficulty.

Cronbach's alpha for the Persian version of the MPQ was 0.85 in overall and varying from 0.62 to 0.74 of each aspect. Pearson correlation coefficient for the pretest and posttest questionnaire was 0.97 in overall and more than0.8 for all the questionnaire subgroups. Except subclass No. 15 which was not choose by any of the patients and subclass No. 8 which had very low coefficient (ρ=0.24), the correlation coefficient was more than 0.8 for all the other subclasses.

Table 1. Frequency of phrases that were chosen by Iranian cancer patients the average score and corresponding standard deviation for each subgroup in the Persian McGill Pain questionnaire at (n=84).

Phrase subclass	1 N (%)	2 N (%)	3 N (%)	4 N (%)	5 N (%)	6 N (%)	Overall N (%)	Average Score (SD)
1	1 (2)	5(12)	6(14)	21(50)	7(17)	1 (2)	42 (50)	1.9 (2.06)
2	2 (4)	1(2)	53↑(94)	-	-	2 (4)	56 (66.6)	1.94 (1.41)
3	17(38)	4(9)	17(38)	6(13)	0(0)	17(38)	44 (52.3)	1.19 (1.4)
4	3(20)	3(20)	9(60)	-	-	3(20)	15 (17.8)	0.42 (0.98)
5	2(4)	19(37)	6(11)	23(45)	1(2)	2(4)	51 (60.7)	1.84 (1.69)
6	12(66)	4(22)	2(11)	-	-	12(66)	18 (21.4)	0.30 (0.67)
7	36(75)	7(14.5)	5(10.5)	0(0)	-	36(75)	48 (57.1)	0.77 (0.84)
8	17(32)	15(28.5)	15(28.5)	6(11)	-	17(32)	53 (63.1)	1.38 (1.33)
9	9(14)	11(17)	2(3)	12(18)	31(48)	9(14)	65 (77.3)	2.85 (2.06)
10	43↑(88)	3(6)	2(4)	1(2)	-	43↑(88)	49 (58.3)	0.7 (0.75)
11	42(65)	23(35)	-	-	-	42(65)	65 (77.3)	1.04 (0.7)
12	27(93)	2(7)	-	-	-	27(93)	29 (34.5)	0.36 (0.53)
13	29(65)	16(35)	0(0)	-	-	29(65)	45 (53.5)	0.72 (0.76)
14	37(78)	1(2)	4(8)	2(4)	4(8)	37(78)	48 (57.1)	0.94 (1.27)
15	35(85)	6(15)	-	-	-	35(85)	41 (48.8)	0.55 (0.62)
16	40↑(61)	10(15)	1(1.5)	2(3)	12(18.5)	40↑(61)	65 (77.3)	1.55 (1.61)
17	26(40)	23(35)	13(20)	3(5)	-	26(40)	65 (77.3)	1.46 (1.11)
18	7(13)	21(38)	21(38)	5(9)	1(2)	7(13)	55 (65.4)	1.63 (1.39)
19	3(7.5)	5(12.5)	34(80)	-	-	3(7.5)	42 (50)	1.36 (1.43)
20	35(67.3)	3(5.7)	7(13.4)	2(3.8)	5(9.6)	35(67.3)	52 (61.9)	1.13 (1.38)

Table 2. Cronbach's alpha and stability in overall and for different MPQ subscales.

Pain category	Cronbach's alpha (n=84)	Stability* (n=30)
Sensory	0.74	0.96
Affective	0.68	0.96
Evaluative	-**	0.82
Miscellaneous	0.62	0.81
Overall	0.85	0.97

*Pearson correlation for 24h interval(n=30) - P<0.05 for all values.
**Since evaluative aspect has only one subgroup, it was not possible to estimate Cronbach's alpha.

Discussion

We studied cross-culture adaptation and the reliability of the Persian McGill Pain Questionnaire (MPQ) and showed that it is an appropriate tool for the assessment of the pain among Iranian cancer patients.

Translation-based methodology have been used for the designing of the pain questionnaire in several non-English speaking countries(Hasegawa et al. 1996). Therefore, some use the same format of the original McGill questionnaire and others present a different version includes different words and areas of meaning rather than the original questionnaires. Adaption of MPQ into a language other than English is accompanied by many difficulties in translation. Conceptual description of pain is associated with specific socio-cultural backgrounds of the target language. The fundamental problem is relationship of semantic perception that describes pain with the particular social and cultural context of the reference language. Therefore, it is not feasible to find equivalent word in the target language for the expression of the original questionnaire(Varoli 2006). In other words, a simple translation of the MPQ questionnaire would hardly de-

termine minor semantic differences in the description of expressions of the original questionnaire(Hasegawa et al. 1996). In this study we used Translation-based approaches and intended to preserve the original structure of McGill pain questionnaire. However, we followed the World Health Organization guidelines and Melzak suggestion for the translation and adaptation process(Varoli 2006; WHO 2012) and created a reliable Persian MPG questionnaires and avoided deviation from the original structure.

Due to inability of Persian language in presenting exact equivalent for the English words used in the original MPQ questionnaire, we defined some of the words and sometimes used examples to clarify the point. For instance, for "flickering" we added "small quick movements" and for "Lacerating" we added "to cut or tear something, especially flesh" in the parenthesis. We tried to keep the original questionnaire format and preferably make sure that all of the words are used, and then in some cases we kept both of words that had the same meaning in Farsi language. Some non-English-versions of MPQ such as Portuguese have omitted one of the words(Varoli 2006).Different words are used for different situations in the English language, while in Persian there were fewer words to describe the pain.

Since most patients in this study were not literate, it was difficult for them to complete a self-administered questionnaire. Therefore, we suggest using interview method and training of the interviewer to ensure about the quality of the data. We have prepared a protocol to aid the interviewers to collect the data standard way. However, it took 30 to 40 minutes to complete the Persian version of the MPQ which was about two-time higher than the answering time for the original McGill Pain Questionnaire(Dip.Phys et al. 2005).

The reliability of the results of other researchers that used Melzak and WHO method to translate the questionnaire in their language has been similar with our results(Kalaidopoulou & Mystakidou 2002; Malhan et al. 2007; Hasegawa et al. 1996). The mean scores (and SD) for the sensory 13.3 (SD 7. 7), affective 3.6 (SD 2.7), evaluative 1.6 , and miscellaneous5.6 (SD 3.7), groups were slightly lower that the corresponding results reported by Melzack in 1971 who reported scores of 18.2, 4.4, 3.0, 6.1for sensory, affective, evaluative, miscellaneous group, respectively(Bahram poor et al. 2004).

We observed that a few words were not chosen by any of the Iranian patient in this study, including "lancinating", "searing", and "terrifying". Reasons for not choosing these words could be the fact that they reflect severe pain; some of the cancer patients experience chronic mild to moderate intensity pain, so they don't use those words to describe their pain. In addition, the translation of these words may be similar to other words in the same subclass. This could be due to the small sample size and type of patients entered in this study. In the future researches they may be used more by different patients. Therefore, we kept all the words and expressions of the original questionnaire in the Persian version.

In summary, PMPQ is a potentially useful tool with a high validity and reliability to measure pain in the clinical and research setting. It will help researchers to evaluate pain control among Iranian cancer patients. Since we found the use of the questionnaire complicated, we designed specific protocol as a guide for interviewers and researchers when using the questionnaire in their research.

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