RESEARCH ARTICLE

Assessment of the Nature and Severity of Pain Using SF-MPQ for Cancer Patients at the National Institute of Oncology in Rabat in 2015

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Abstract

Background: Cancer is a worldwide health problem and pain is among the most common and unpleasant effects affecting well-being of cancer patients. Accurate description of pain can help physicians to improve its management. Many English tools have been developed to assess pain. Onkly a limited number of these are applied in Arab countries. Our aim was to assess the quality, the nature and the severity of pain using the short McGill Pain Questionnaire (SF-MPQ) on cancer patients in the National Institute of Oncology (NIO) in Rabat, Morocco. Materials and Methods: The tool used is the SF-MPQ inspired from the Arabic version of the MPQ. The subjects were cancer patients (N=182) attending the NIO, from 24th October 2015 to 8th January 2016, aging ≥18 years old, experiencing pain and coming to have or to update their pain medication. Results: The rate of participation was 96.3%. Eight patients had difficulties to express their pain using descriptors, but could use the Visual Analogue Scale (VAS) and the body diagram. The most frequent sensory descriptors were 'Throbbing', 'Shooting', 'Hot-Burning'. The most used affective descriptor was 'Tiring-Exhausting'. The mean VAS was 6.6 (2.4). The mean score of all items was 11.9 (7.8). The patients were suffering from severe pain. The internal consistency of the form was s acceptable. Conclusions: The findings indicate that most of the patients attending the pain center of the NIO could use the descriptors of the SF-MPQ to describe their pain. They indicate the usefulness of the SF-MPQ to assess the nature and the severity of pain in cancer patients. This tool should be tested in other Moroccan and Arabic contexts associated with other tools in clinical trials.

Keywords: McGill pain questionnaire - SF-MPQ - Pain - cancer patients - Morocco

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Introduction

Cancer is an actual health problem. It is a worldwide cause of morbidity and mortality, 14.1 million of new cases, 8.2 million of deaths annually, 32.8 Million of cases are living with cancer and an alarming worldwide burden is set (World Cancer Report 2014; Globocan 2012). In Morocco, according to the data of 'Cancer Register', the incidence of cancer is comparable to the countries of North-Africa, but these rates still markedly inferior to those observed in developed countries in Europe and North America. The most frequent are Breast, lung and prostate cancer (Zanetti et al., 2010; Tazi et al., 2013).

Early authors set instruments and tools to state an accurate description of pain (Melzach 1975; Melzach 1987; Tearman and Dar., 1986; Agnew and Mersky., 1976; Bailey and Davidson., 1976) using descriptive words, numerical and visual scales to help physicians in differential diagnosis and inform treatment decisions. There are studies on assessment of pain as an indication or a mean to monitoring treatment or to explore risk factors of pain (Trinidad et al., 2015; Kornilov et al., 2016).

Different dimensions of pain have been studied (Portenoy and Lesage., 1999; Ripamonti et al., 2000; Cuffari et al., 2006; Holtan et al., 2007). Pain untreated affects physical, psychological and social well-being (Breivick et al., 2009; Smith and Saiki., 2015). Authors underline the importance of providing appropriate protocols of managing pain based on assessment of pain using routine simple tools in relieving pain successfully (Larue et al., 1995; Bernabei et al., 1998; MacDonald et al., 2002; McCarty et al., 2004; Elomrani et al., 2015).

The McGill Pain Questionnaire (MPQ) has been one of the most widely used tools for more than 30 years, and it is indicated to assess the nature and the severity of pain through sensory, affective, neuropathic and nociceptive descriptive words of pain. It has been translated to Arabic languages (Harrison, 1988).

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Melzack developed and validated a short form of the MPQ abbreviated SF-MPQ (Melzack, 1987) wich took less time than the MPQ. The SF-MPQ has never been applied in an Arabic speaking country (Rouahi and Zouhdi., 2016).

The aim of this study is to assess pain in cancer patients using the SF-MPQ and to test its usefulness to determine the localization, the nature and the severity of pain in Moroccan population.

Materials and Methods

Characteristics of the SF-MPQ

The SF-MPQ applied in this study was inspired from the Arabic version of the MPQ. This translated version of the MPQ was developed by Dr Harrison (Harrison 1988). Our form was composed of two parts. The first one was dedicated to sociodemographic data, clinical data and the history of pain experience. The second part is the integral SF-MPQ with the 15 descriptive words or descriptors of pain. We obtained the authorization to use the SF-MPQ from the author. The 15 descriptive words of pain of the SF-MPQ were belonging to 2 classes: sensory and affective words. There were 11sensory (Throbbing , Shooting, Stabbing , Sharp, Cramping, Gnawing,Hot-burning, Aching, Heavy,Tender, Splitting) and 4 affective descriptors (Tiring-Exhausting, Sickening, Fearful , Cruel-Punishing). These descriptors were rated on a four point intensity rating scale as 0=none, 1=mild, 2=moderate, 3=severe. By the other side, these descriptors are classified into 6 nociceptive descriptors (Throbbing, Sharp, Cramping, Heavy, Tender, Gnawing) and 4 neuropathic words (Shooting, Stabbing, Hot-burning, Aching). The severity of cancer pain was estimated through the proportion of the cases with a value of the intensity equal to 2 or 3 for each category of descriptors.

Beside these descriptors, the questionnaire integrates also a Visual Analogical Scale (VAS), a numeric scale based on 11 points (0-10). This method is considered the most accurate and reproducible scale of measuring the intensity of pain (Benhamou, 1998). A Body Diagram to determine the location of pain is also part of this questionnaire. As most of patients were illiterate, the questionnaire was administered by a member of the research team which read the questions and marked the answers selected by the patients.

Subject recruitment

Patients were eligible if they were at least 18 years old, had a confirmed cancer diagnosis (except skin cancer), experiencing recurrent cancer pain for more than 24 hours, volunteers, self-determined, able to understand and describe their pain. We obtained the approval of the Ethical Committee of the Faculty of Medicine and Pharmacy of Rabat to conduct this study. The agreement of the patients was obtained before the beginning of the direct questioning. Participants gave written consent after being fully informed about the purpose and the scientific goal of the study. The period of the data collection was from 24th October to 8th January 2016. The point of recruitment of the patients was the Pain Center located in the National Institute of Oncology (NIO) of Rabat. Recruitment strategy employed was based on professional's referral for cancer patients by NIO Services, hospitals, oncology clinics, oncology centers and other care centers. A scheduled data collection coincides with the scheduled clinic appointments of the patients to have or to update their pain medication.

Procedures of data collection

The team of researchers check the eligibility of participants through a short interview and the data mentioned in the 'Individual Medical Booklet'. Eligible participants were then administered the questionnaire by the team in a Face-to-Face way interview.

Scoring and statistics

The scoring method recommended by the author (Melzack 1987) was followed. An item score, a class score, a sum score for all items, were attributed for each patient. Three mean scores were calculated and analyzed: mean of intensity rank of sensory descriptors, mean of intensity rank of affective descriptors and a mean of all descriptive words. The severity of pain was estimated through the proportion of the patients experiencing pain with an intensity equal or higher than 2 in the different classes of desciptors. Descriptive statistics, mean scores and degree of the severity of pain were generated. The internal consistency of the questionnaire was assessed using Cronbach alpha coefficient. A value of 0.7 or greater was considered as adequate. Statistics were performed on Excel (MS office 2010).

Acceptability

This parameter was evaluated through the patient response rate and the capacity to use pain descriptive words.

Results

We recruited 189 cancer patients but only 182 consented to participate in our study. Thus the rate of participation was about 96.3 %. The 1st patient followed up at the NIO was admitted on 1985 and the last one on 2016. The mean age was 51.8 (Standard Deviation 14.1) years. The sex ratio was 0.4. The majority of the patients were married (72.5 %), illiterate (67.3 %), came from Rabat (54.7 %), received one type of cancer treatment at least (98.3 %), were under opioids (72.0 %). More than a third of the cases (32.4%) had Breast cancer. A proportion of 12.1 % had lung cancer and 19.2 % had gynecological cancer. About cancer stage, only 7.7 % had cancer at Local stage and 23,6 % had locoregional stage. Other characteristics are presented in Table 1.

The questionnaire took maximum 5-10 minutes to be completed. Among the 182 consenting cases interviewed, eight patients have difficulties to express their pain with descriptive words; but could easily estimate the intensity of their pain using the VAS and indicate the pain localization on the body diagram.

The results of the experience with pain among the patients showed that most of them lived with pain for a

Table 1. Characteristics of 182 Cancer Patients Attending the Pain Center of the National Institute of Oncology, Morocco, 2015

	Category	N	Percent (%)
Age (Years)			
Mean +/- SD (Min; Max)	51,8 +/- 14,1 (18; 85)		
Gender	Male	56	30.8
	Female	126	69.2
	SEXE RATIO M/W	0.4	
Marital status	Unmarried	16	9.6
	Married	121	72.5
	Divorced	10	6.0
	Widowed	20	12.0
Education	No education	105	67.3
	Primary (≤ 8th Grade)	25	16.0
	Secondary (2nd Grade)	24	15.4
	High Education	2	1.3
Duration of pain experience	≤ 24 H	5	3.0
	1 Week	28	16.7
	2-4 Weeks	16	9.5
	1 -2 Mounths	35	20.8
	2-6 Mounths	36	21.4
	7-12 Mounths	7	4.2
	> 1 Year	40	23.8
	Unknown	1	0.6
Accompanied patient	Family	113	80.1
	Health professional	2	1.4
	Non accompanied	26	18.4

Table 2. Pain Localisation of the Patients (N=182) on the Body Diagram Pain Center, National Institute of Oncology, Morocco, 2015

Pain location	Frequency (n)	Proportion (%)
Head (head, neck, face, chin, gum, tongue, mouth)	49	26.9
Arm (arm, shoulder, elbow, hand)	27	14.8
Chest (chest, breast)	47	25.8
Abdomen	51	28.0
Genital Organs	20	11.0
Leg (leg, knee, foot)	43	23.6
Back (back, spine, kidney)	32	17.6
Buttock (Buttock, hip, anus, Colorectal)	7	3.8
Pain in ≥ 4 sites	9	4.9

long time, 96.4 % experienced pain for at least one week.

The patients experiencing pain were suffering from pain located in Head (26.9%) and Abdomen (28.0%), Chest and Breast (25.8 %), Leg (24.2 %). A proportion of 4.9 % of our population was suffering from pain in more than 4 sites (Table 2).

The results informing about the pain pattern showed that the first sensation of pain felt by patients was 'Surprising' in nearly an equal proportion than in 'Continuous enhancement' with respectively 32.4 % and 29.1 %. The pain was in more cases 'Intermittent' (53.3%) than 'Continuous' (34.6 %). Few people had a 'Rhythmic' or 'Brief' pain (1.1 %).

The results on the severity of pain showed that the mean score of the VAS obtained beyond all patients was 6.6 (SD 2.4).

Table 3. Use of Descriptive Pain Words of SF-MPQ by the Patients Attending the Pain Center of the National Institute of Oncology, N=174, Rabat, 2015

Items	N	Proportion (%)	Mean Score	SD
1-Throbbing	78	42.9	2.6	0.6
2 -Shooting	74	40.7	2.4	0.8
3- Stabbing	58	31.9	2.7	0.6
4- Sharp	57	31.3	2.5	0.6
5- Cramping	53	29.1	2.4	0.8
6- Gnawing	33	18.1	2.4	0.8
7- Hot-burning	80	44.0	2.4	0.7
8- Aching	50	27.5	2.5	0.7
9- Heavy	47	25.8	2.3	0.8
10- Tender	58	31.9	2.4	0.8
11- Splitting	38	20.9	2.1	0.8
12- Tiring-Exhausting	87	47.8	2.3	0.8
13- Sickening	41	22.5	2.3	0.8
14- Fearful	51	28.0	2.1	0.8
15- Cruel-Punishing	62	34.1	2.3	0.9

The analysis of data about the nature of pain set in Table 3 showed that the most frequent sensory descriptors of pain used by our patients were 'Throbbing', 'Shooting' and 'Hot-Burning' with a proportion of 42.8 %, 40.6 % and 43.9 % respectively. The most used affective descriptor was 'Tiring-Exhausting' followed by 'Cruel-Punishing'.

The mean scores for different classes of descriptors were studied. The sensory (95.1 %) and the nociceptive descriptors (83.9 %) are the most often used by the patients. The mean score for 15 items was 11.9 (SD 7.8). The data showed a satisfactory internal consistency of the form with a value of Cronbach α factor for all 15 items equal to 0.74.

Discussion

The questionnaire was understandable and accessible by nearly the whole population interviewed, despite the fact that a great proportion of the patients have no education and only a minority reached High Education Level. The results are probably linked to the way the data were collected: Questionnaire administered in a face-to-face interview. Most of the patients received a follow-up at the NIO and were under opioid medication. They came to the Center of Pain to have or to update their pain medication. The most frequent type of cancer is breast cancer for women and lung cancer for men. These results are consistent with national data.

The assessment of the nature and the severity of pain using the SF-MPQ, showed that the descriptor 'Tiring-Exhausting' is the most frequently used by the population studied. This descriptor is one of the 4 most frequently used by a population of cancer patients who was administered the SF-MPQ-2, a revised version of the SF-MPQ (Gauthier et al., 2014). But the other common descriptors are different, one of the three, 'Dull', is not included in the SF-MPQ. There may be possibly specific words to describe cancer pain in Moroccan context associated to its cultural characteristics. Therefore, it would be interesting to develop the approach exploring pain words proposed by the patients themselves and allow

the patients describe their pain freely.

The analysis of the mean of the Visual Analogue Scale obtained among all patients show that the VAS justified the high rate of prescription of opioids to the patients by the physicians of the Pain Center. The values of the different mean scores obtained for Sensory descriptors subclass, Affective descriptors subclass and for the whole descriptors, are comparable to those obtained by Dr Melzack (Melzack, 1987) when he validated the Short Form Mac Gill Pain Questionnaire for the first time as it is. In parallel, as it was expected considering the literature, the scores are relatively moderated compared to those obtained with the Long Form Mac Gill Pain Questionnaire as demonstrated by the same author.

The internal consistency of the questionnaire studied through the correlation factor Cronbach alpha for all items of the SF-MPQ with 15 items developed in this study with a scale ranging between 0 and 3 (4 points), show that this factor is adequate, but it is slight inferior to that obtained by other authors (Gauthier et al., 2014; Lovejoy et al., 2012).

The findings show that this form is a useful and acceptable tool to measure the nature and the severity of pain in the context of the NIO on Moroccan cancer patients. It should be interesting to test other instrument with more items in each sub-class of descriptors and more neuropathic descriptors as the SF-MPQ-2 so that patients have more items and better discriminative numeric scale with 11 points instead of the scale of 4 points of the SF-MPQ with 15 items tested.

A brief evaluation of the general state of the patients would be interesting to make sure that the meaning of each item is well understood and assimilated and the answer is accurate and not interfering with emotional and/or psychological state of the patient.

There would be suitable and of a great usefulness to associate to these questionnaire, a tool to measure psychological and functional state of the patients, such as the Short Orientation Memory Concentration Test (SOMC), the Karnofsky Performance Status (KPS) or the Center for Epidemiological Studies-Depression (CES-D). This precaution avoid the exaggeration, the underestimation or other kind of interference while assessing different parameters of pain. Other tests such as the Beck Depression Inventory, second edition (BDI-II) and the Generalized Anxiety Disorder 7-Items (GAD-7) can be used to subtract the influence of the psychological state of the patient on the estimation of his pain sensation or pain experience with accuracy (Lovejoy et al., 2012).

The innovative iconic approach to describe pain experience can be useful for Moroccan population considering the degree of alphabetization and minimize this way the language-level barriers. But the canal of communication proposed in the Iconic Pain Assessment Tool (IPAT) for instance, is not adapted to the skills of the population with numeric tools (Laloo and Henry, 2011). The assessment of pain with instruments fully auto-administered or web-based instrument requires a significant level of literacy and special skills in the use of numeric tools and infrastructural dispositions related to extension of the web to the whole population. These conditions are not sufficient currently in Moroccan context. But, this iconic concept to describe pain, adapted to classic methods of data collection can be considered in our Moroccan linguistic context for cancer patients.

The results on the severity of pain showed that the mean score of the VAS obtained in our study was 6.6 (SD 2.4). The pain pattern obtained mostly was a 'Surprising' or a 'Continuous enhancement' first sensation of pain.

In Arabic countries, the disconfort and the severity of cancer pain assesssed by diferent tools showed a great need to have valid tools to measure pain acurately and standardized protocols of management of pain adapted to each context and updated regularly. To our knowledge, the SF-MPQ has never been tested in arabic context. But other tools measuring diferent dimensions of pain have been experienced.

In Lebanon, the use of the Lebaneese version of the Memorial Symptom Assessment Scale (MSAS-Leb) to assess the severity, the frequency, the physical and the psychologigal dimensions of pain among lebaneese cancer patients, showed that the score of 28 among 30 items of pain symptoms prevalence were higher than 2 on a scale varrying from 0 to 4. The same findings have been obtained for the mean scores for diferent specific subscales (Huijer et al., 2015).

In Jordan, the use of the Arabic Barrier Questionnaire (ABQ-II) integrating an A-BPI and the VAS showed that a proportion of 90 % of the patients had a pain severity ranged between [5-10]. Other aspects of pain severity showed high mean scores also (Saifan et al., 2015).

In Morocco, the study of cancer patients using Moroccan Arabic version of the EORTC-BR23 showed that the mean scores were higher than 50/100 for all the 8 items except for Future perspective, Arm Symptoms and Upset by hair loss (El Fakir et al., 2014).

Another study has been also conducted in Morocco applicating the Arabic version of the M.D. Anderson Symptom Inventory. The analysis of the data linked to the severity symptoms showed that 96 % of the patients had a VAS pain score at 7 or higher at the admission to the treatment center of pain, NIO, Rabat (Nejmi et al., 2010).

These observations about the difficulty to select a tool to assess pain let recommend a consortium focusing on tools for assessment of cancer pain and pain management protocols in Arabic countries.

In conclusions, According to the findings, the SF-MPQ tested for the first time in Morocco on cancer patients, showed that it is an acceptable tool for assessment of the nature and the severity of pain in Moroccan cultural context despite the low rate of literacy. It should be interesting to associate to the SF- MPQ another tool dedicated also to assess the severity and the nature of pain on Moroccan cancer patients. It should be suitable to conduct more studies to check the validity and reliability on a large sample and then to apply it for the evaluation of the impact of medical/chirurgical interventions in clinical trials and/or adapt pain management protocols.

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