RESEARCH ARTICLE

Arabic Tools for Assessment of Multidimensions of Pain and Discomfort Related to Cancer

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Abstract

 Background: Cancer is a worldwide health problem. Arabic countries are also concerned and the burden linked to the pain related to cancer is dsiquieting. The aim of this study is to set the panel of valid tools for assessing the multiple dimensions of pain in arabic speaking countries. **Materials and Methods:** A systematic review on PubMed, Scopus, and Science Direct databases was conducted using as key words cancer, pain and arabic speaking population. The content of 51 articles was studied and nine articles were retained for their relevance for the issue. **Results:** We founf eight different questionnaires. MSAS-Leb, EORTC-C30, EORTC-BR23, MDASI, FLIC, and COOP/WONCA are dedicated to physical and psychological dimensions of pain. *BPI* is centered on direct items for measuring pain accurately. *ABQ-II* is the unique tool focusing on barriers to cancer pain control. All tools are confirmed valid and reliable in the context studied for assessing pain and disconfort linked to cancer. **Conclusions:** This panel of questionnaires covers all relevant aims for assessing pain in diferent arabic speaking countries with the recommendation of a cultural adaptation to local arabic languages.

**Keywords:** Pain - discomfort - cancer - assessment - Arabic populations

Introduction

Cancer is a worldwide cause of morbidity and mortality, 14.1 million new cases, 8.2 millions death annually, 32.8 Millions living with cancer and an alarming worldwide burden (World Cancer Report 2014; Globocan 2012). In Arabic countries, the changing exposures to cancer risk factors due to the changes of lifestyles and environmental conditions announce a disquieting situation about cancer in general and about breast, prostate, lung, urinary bladder cancers and non-Hodgkins lymphomas (Salim et al., 2009).

Chronic pain related to cancer and its interference with daily living constitute a burden for cancer patients and their families. Pain untreated affects physical, psychological and social well-being (Breivick et al., 20009; Smith and Saiki, 2015). Authors have underlined the importance of providing appropriate protocols of managing pain considering all dimensions of pain (Abdulla et al., 2013). This needs an accurate assessment of different parameters of pain.

The cancer pain is a subjective experience and its assessment still troubling scientific researchers. The aim of our systematic review is to set the panel of the arabic tools available and usefull for studying cancer pain in different Arabic countries.

Materials and Methods

A systematic search on three databases (PubMed, Scopus, and Science Direct) was conducted using the key words: Cancer, Pain, Arabic Population and for Science Direct database we limited the research to 2015 and combine to Assessment of pain, to make the result of the research accurate. The search was limited to studies published in English conducted on adult arabic speaking populations. The outline of the research is presented in Figure 1.
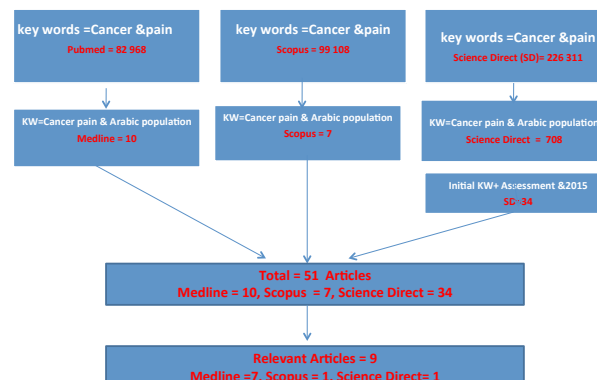
Figure 1. Bibliographic Research Strategy

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Table 1. Overview of the Articles Selected Through Bibliographic Research in Pubmed, Scopus, Science Direct

First Author	Journal/Year	Title	Objective	Population/ Period/ Country	Tools	Parameters of pain & discomfort related to cancer	Conclusions & findings
Huijer HA	J Pain Symptom Manage. 2014.	Validation of the Arabic Version of the Memorial Symptom Assessmet Scale Among Lebanese Cancer Patients.	Validation	190 cancer patients	MSAS-Leb (Memorial Symptom Assessment Scale: EORTC-C30.	Physical and psychological symptoms: Frequency Severity, Distress, Prevalence 32 items.	Acceptable reliability and validity
			MSAS-Leb	SR 0.57 54.32 (13.64) years 2009/2010 Lebanon			
Ballout S	J Pain Symptom Manage 2011.	Psychometric evaluation of the arabic Breif Pain Inventory in a sample of Lebanese cancer patients.	Validation	75 Cancer patients 56% male	-BPI (Brief Pain Inventory)	Tool with (16 items) Presence, location, severity, treatment, relieve of pain (0-100%), interference of pain with general activities (7 items) VAS	Valid, Reliable Culturally , sensitive.
			BPI	>45 years			
				January to July 2007 Lebanon			
El Fakir S	BMC Res Notes. 2014	The European Organization for Research and Treatment of Cancer Qol questionnaire-BR23 Breast Cancer-Specific Quality of Life Questionnaire: psychometric properties in a Moroccan sample of breast cancer patients.	Validation of the Moroccan Arabic EORTC-BR23	105 Breast cancer patients ≥ 18 years 48.1 (SD10.5) August to November 2009 Morocco	EORTC-BR23 European Organization for Research and Treatment of Cancer Quality of Life Questionnaires for Breast cancer	QoL with breast cancer, 23 items; Classes of Items: Multi-item Functional symptoms, 3 Symptom scales physical side effects, 3 single items feeling and psychological effects.	Acceptable reliability and validity
Nejmi. M.	J Pain Symptom Manage . 2010.	Validation and application of the Arabic version of the M.D. Anderson Symptom Inventory in Moroccan patients with cancer.	Validation of Arabic version MDASI	N 165 Cancer patients SR 0.7 Age 48.7 (13.7) 2010 Morroco	MDASI (M.D. Anderson Symptom Inventory)	Two classes of items: Symptom Severity (13 items), Interference sysmptom with daily living (6 items).	Valid and reliable
Awad MA	Ann N Y Academy Sci. 2008	Validation of the European Organization for Research and Treatment of Cancer Quality of Life Questionnaires for Arabic-speaking Populations	Cultural adaptation in arabic speaking patients	Breast Cancer patients women 48.6 (9.9) years September 2005 December 2006 United Arab Emirates	EORTC-C30 European Organization for Research and Treatment of Cancer Qol Questionnaire EORTC- BR23	QoL cancer (30 items): 5 functional (physical, role, cognitive, emotional and social), one global health status/ QoL, 3 symptoms physical side effects (fatigue, pain, and dyspnea), 5 single general and psychological effects, hair loss, sexual interest.	Acceptable validity and reliability
Abouzeid WM	J Egypt Public Health Assoc. 2009.	Quality of life of patients with oral and pharyngeal malignancies.	Reliability Validity	171 Oro pharyngeal cancer patients SR 1.41 50.33 (SD 16.44) years 1991-2000 Egypt	FLIC (Functional Living Interview questionnaire for Cancer).	Tool of 22 Items, only 12 items were consistent in Arabic version: Functional symptoms, Psychological symptoms Related to QoL.	Reliable to evaluate functional and psychological aspects of Head & Neck cancer.

Table 1. (Continued) Overview of the Articles Selected Through Bibliographic Research in Pubmed, Scopus, Science Direct

First Author	Journal/Year	Title	Objective	Population/ Period/ Country	Tools	Parameters of pain & discomfort related to cancer	Conclusions & findings
Alawadhi SA	Ann Saudi Med. 2010.	Validity and reliability of the European Organization for Research and Treatment in Cancer Quality of Life Questionnaire (EORTC QLQ): experience from Kuwait using a sample of women with breast cancer.	Reliability Validity	348 Women Breast Cancer 48.3 (10.3) years Kuwait	EORTC QLQ-C30 EORTC QLQ-BR23	Idem Idem	Acceptable Reliability Validity Except 2 Items of Pain subscale of EORTS QLQ- C30
Saifan A	Pain Manage Nursing. 2015	Patient and family caregiver related barriers to effective cancer pain control	Identification of attitudinal barriers to cancer pain relief	300 cancer patients SR 1.17, 57% are 41 to 60 years, 246 caregivers August 2009 May 2010 Jordan	ABQ –II (Arabic version Barriers Questionnaire A-BPI	ABQ –II: 8 barriers to cancer pain control, A-BPI.	Barriers: addiction, side effects, communication, fatalistic beliefs.
Hoopman R	J Clin Epidemiol. 2008	Translated COOP/ WONCA charts found appropriate for use among Turkish and Moroccan ethnic minority cancer patients.	Test of adequacy of Turkish and Arabic versions of COOP/ WONCA	87 Turkish (SR 0.91) 74 Moroccan (SR 1.55) cancer patients Turkish 49.5 (12) years Moroccan 50.4 (13.3) years May 2000 to September 2002 Netherlands.	COOP/WONCA Charts	Functional Healh assessment charts: Physical fitness, Feeling, Daily activities, Overall health, Pain, Overall QoL, Change in healt.	Adequate feasibility And Construct validity

Qol, Quality of Life; SR, Sex Ratio;VAS, Visual Analogical Scale.

The selection procedure was as following. In the first step of the selection, we found a great number of articles introducing 'Pain' And 'Cancer' as key words among the different databases.

In the second step, we combined to the initial key words 'Arabic Population'. We encountered a raisonnable number of articles to be analyzed from PubMed (n=10) and Scopus (n=7) databases, but the number of articles obtained from Science Direct still high (n=708).

In the third step in order to refine the research in Science Direct Database, we combined to the initial key words used bellow, the word 'Assessment' and fit the research to the year 2015. This way we obtained 34 articles in this database. The content of the 51 articles obtained from the three databases was analyzed and we retained nine relevant articles for our issue (Pubmed=7, Scopus=1, science Direct=1). The articles selected according to this procedure have been analyzed.

Results

The nine articles analyzed followed a cross sectional design study. An overview is presented in Table 1. The recruitment of the patients was according a convenience or purposive sampling. The populations studied are all cancer patients receiving a follow up in different structures of care as Oncology centers, Hospitals, Teaching Hospitals, Clinics or Ambulatory care center.

The studies were conducted on arabic speaking populations from seven different countries, Lebanon (Ballout et al., 2011; Huijer et al., 2015), Moroco (Nejmi et al., 2010; El Fakir et al., 2014), United Arab Emirates (Awad et al., 2008), Egypt (Abouzeid et al., 2009), Kuwait (Alawadhi et al., 2010), Jordan, (Saifan et al., 2015) and Netherlands (Hoopman et al., 2008). All the studies aimed to translate or adapt, and validate the different questionnaires.

Demographic and cancer characteristics

All studies were conducted on adults, the mean age ranged from 48.1 (El Fakir et al., 2014) to 54.32 years old (Huijer et al., 2015). Three studies were dedicated to Breast cancer (Awad et al., 2008; Alawadhi et al., 2010; El Fakir et al., 2014). The other articles were on oropharyngal cancer (Abouzeid et al., 2009), and other type of cancers (Hoopman et al., 2008; Nejmi et al., 2010; Ballout et al., 2011; Saifan et al., 2015). The Sex Ratio Men/Women in the studies following cancers others than Breast and Prostate cancer was ranging from 0.57 (Huijer et al., 2015) to 1.17 (Saifan et al., 2015). The studies were conducted at different periods. The first one was initiated on 1991 (Abouzeid et al., 2009).

Arabic tools of discomfort and pain related to cancer

According to this review, we found eight different Arabic questionnaires: Memorial Symptom Assessment

Scale (MSAS-Leb), Brief Pain Inventory (*BPI*), European Organization for Research and Treatment of Cancer Quality of Life Questionnaires (EORTC-C30), European Organization for Research and Treatment of Cancer Quality of Life Questionnaires, specific module to Breast cancer (*EORTC-BR23*), M.D. Anderson Symptom Inventory (MDASI), Functional Living Interview questionnaire for Cancer (FLIC), Arabic version Barriers Questionnaire (*ABQ-II*), Functional Healh assessment charts (COOP/WONCA).

MSAS-Leb (Huijer et al., 2015)

MSAS-Leb is an instrument constituted by 32 items considering the psychological and the physical dimension of disconfort or pain associated to cancer. The items are distributed into two groups: MSAS-PSY and MSAS-PHYS.

MSAS-PSY is constituted from 6 items belonging to the psychological dimension as worrying, feeling sad, feeling nervous, difficulty sleeping, feeling irritable an difficulty concentrating.

MSAS-PHYS is constituted from 12 items as lack of appetite, lack of energy, pain, feeling drowsy, constipation, dry mouth, nausea, vomiting, change in taste, weight loss, feeling bloated and dizziness. Others items as hair loss, problems of sexual interest are included also.

The MSAS-GDI, the specific Global Distress Index, is an index deduced from items belonging to the 2 groups. It corresponds to the mean of frequency of 4 psychological symptoms (feeling sad, worrying, feeling irritable and feeling nervous) and the distress of 6 physical symptoms (lack of appetite, lack of energy, pain, feeling drowsy, constipation, and dry mouth). This tool concerns beside the psychological, physical, and distress, a specific item for measure intensity of pain.

BPI (Ballout et al., 2011)

This questionnaire constituted by 16 items. The first part of the form is dedicated to descriptive parameters of the central dimension of pain as Presence, location, severity, treatment, relieve of pain (0-100%). The second part is focused on the interference of pain with general activities. It is constituted by 7 items: mood, walking ability, normal work, relations with other people, sleep, and enjoyment of life. The last part is the Visual Analogical Scale (VAS).

This tool has the advantage to associate the acurate description of direct parameters of pain and its interference with symtoms of the daily living with pain.

EORTC-C30 (Awad et al., 2008)

The EORTC-C30 is a 30 items questionnaire that assess 5 functional (physical, role, cognitive, emotional and social), one global health status/QoL and three other symptoms (fatigue, pain, and dyspnea) subscales. Beside these items, it contains five single symptoms measuring insomnia, appetite loss, constipation, diarrhea, and financial difficulties. Other items as hair loss, sexual interest are also included in this tool. Many items are common to this tool and the MSAS-Leb.

EORTC-BR23 (El Fakir et al., 2014)

The 23 items *EORTC-BR23* is a specific module to breast cancer inspired from the EORTS-C30. It is dedicated to assess the Quality of live with breast cancer. The form contains three groups of items : Multi-item Functional scales (body image, sexual functioning), 3 symptom Symptom scales (systemic side effects, breast and arm symptoms) and 3 single items (sexual enjoyment, future perspectives, and upset by hair loss).

MDASI (Nejmi et al., 2010)

This questionnaire contains two category of symptoms. The first category includes the Symptoms Severity with 13 items : pain, fatigue, nausea, disturbed sleep, distress, shortness of breath, difficulty remembering, lack of appetite, drowsiness, dry mouth, sadness, vomiting, and numbness or tingling.

The second category is dedicated to 6 items related to the Interference sysmptom of pain with daily living of the patients: general activities, mood, work (including in house), relation with people, walking, enjoyment of life.

FLIC (Abouzeid et al., 2009)

The original version of the FLIC is constituted by 22 Items, but the adapted Arabic version retained only 12 items which were appropriate for use in the context of the study. The dimentions of disconfort or pain studied were Functional and Psychological symptoms associated to the QoL of the patients with oral or pharyngal malignancies as pain, psychic stress, ability to work, ability to do household activities, etc.

ABQ-II (Saifan et al., 2015)

The *ABQ-II* is a questionnaire dedicated to the barriers to cancer pain control. The items are distributed into 4 sub-classes : physiologic effects, communication, fatalism and harmful effects.

COOP/WONCA (Hoopman et al., 2008)

This tool targets specifically the degree of changes in the following aspects of discomfort and pain associated to cancer patients as physical fitness, daily activities, pain, social activities, feelings, general health, quality of life and health transition.

According to the findings of these studies all the questionnaires are confirmed reliable and valid to be applied for assessment of pain in clinical trials in the different arabic linguistic contexts studied.

Discussion

The analysis of the specific dimensions treated by the panel of eight questionnaires adapted to Arabic languages permit to classify them into three kinds of questionnaires :

The first kind is treating physical and psychological dimension of discomfort or pain and includes an item assessing pain directly. This kind of questionnaire is grouping *MSAS-Leb, EORTC-C30, EORTC-BR23, MDASI, FLIC* and *COOP/WONCA*. This category of tools would help praticians to improve their understanding about the specific actions to set up for a better quality of life of

the patients. The EORTC-C30 is the unique questionnaire which is treating beside the physical and psychological dimensions, the social and financial dimensions also.

An other kind of questionnaire, *BPI*, is focused on the accurate measurement of central parameters of pain and their interference with daily living. This tool is relevant to discriminate the nature and the origin of pain. This particularity would help physicians to make decisions based on evidence data for updating or adapting protocols of treatments to optimize the relieve of pain among cancer patients.

The unique questionnaire sepcific to barriers to cancer pain control and the interference of pain with daily living is the *ABQ-II*. This tool is the unique one allowing to have insight upstream of the problem of pain, focusing on the behaviours and factors limiting the control of pain and underlying the opinions and false believes about treatment of pain and its fatalistic consequences.

Syntheticaly, the tools described are useful for assessing all dimensions of pain in arabic speaking population, but each one has its intrinsic characteristics and its specific context of use. When the objective of a study is to assess diferents dimensions of pain and their interfernce with the quality of life of the patients, the first category is to be recommende with the consideration that EORTS-C30 is more exhaustive including additive financial and social aspects. The EORTC-BR23 is specific to breast cancer. When the aim is to set an accurate and discriminating description of the nature and the origin of pain, projecting to improve the relieve of pain, the *BPI* is suitable. In the case of the need to solve the barriers to pain control, the *ABQ-II* is the questionnaire recommended.

We can add to this panel of tools, the Mac Gill Pain Questionnaire (MPQ). This questionnaire has been developed to measure multidimentional and direct parameters of pain: location, intensity, quality of pain, and differentiate sensory and affective parameters of pain (Melzack. 1975). This tool has been translated to Arabic language (Harrison. 1988). There is a short form of this tool, the SF-MPQ, which contains less items and take less time to be administered than the MPQ (Melzack. 1987). Its derived version, the SF-MPQ-2, is also valid to assess different parameters of pain (Gauthier et al., 2014). The last two forms can be adapted to Arabic context to assess pain accurately. We should recommend for a specific measurement of the central parameters of pain, the use of *BPI* and/or an Arabic adapted SF-MPQ, which integrate the VAS that is considered the most sensitive and reproducible measure of the intensity of pain.

The studies were conducted in countries from different parts of the arabic region from Lebanon and Jordan in the North, Egypt in the meadle of the Arabic World, United Arab Emirates in the South-East and Morocco in the West. This aspect encourage the use of these tools in all Arabic coutries with the consideration of a cultural adaptation.

The arabic speaking populations of the different arabic contries can understand classic arabic which is unique and used commonly in all arabic countries. But each arabic country has its local arabic language. The tools studied have been adapted and translated in different arabic speaking countries that have their own local arabic

language whith is different from the classic arabic. Beside this aspect, each arabic country has its own and local culture. The study of the perception of the consequences of the treatment of pain can be recommended before the implanattion of the protocols of management of pain among cancer patients. These aspects must be considered methodologically before the adaptation and the application of a questionnaire to another country.

In conclusion, synthetically these tools constitute a panel of instruments treating all dimensions of discomfort or pain related to cancer diseases. The first group treats physical and psychological dimensions of discomfort and pain related to cancer disease. The EORTC-C30 treats additive financial and social aspects associated to discomfort and pain due to cancer. The *BPI* provides an accurate description of pain to empower physicians in their decisions about the apropriate treatment to relieve pain efficiently. The *ABQ-II* marks out by including items allowing to have a sight upstream the problem of pain by pointing the reasons or beliefs that limit the efficient control of pain.

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Newly diagnosed without treatment