



## African Journal of Urology

Official journal of the Pan African Urological Surgeon's Association  
web page of the journal

[www.ees.elsevier.com/afju](http://www.ees.elsevier.com/afju)  
[www.sciencedirect.com](http://www.sciencedirect.com)



**Onco-Urology**  
*Original article*

# Arabic translation and linguistic validation of the questionnaire Bladder Cancer Index



**I. Ziouziou\*, M.A. Touzani, T. Karmouni, K. El Khader, A. Koutani, A.I. Attya Andaloussi**

*Department of Urology B, Ibn Sina Hospital, Faculty of Medicine and Pharmacy, Mohammed V University, Rabat, Morocco*

Received 7 August 2016; received in revised form 3 September 2017; accepted 24 September 2017; Available online 14 February 2018

### KEYWORDS

Bladder Cancer Index;  
Bladder cancer;  
Questionnaire;  
Backtranslation;  
Quality of life;  
Health-related quality of life;  
Arabic

### Abstract

**Introduction:** The Bladder Cancer Index (BCI) is a validated questionnaire for health-related quality of life in patients with bladder cancer (BC).

**Objective:** To translate the original BCI into an Arabic validated version.

**Subjects and methods:** For translation and validation, we proceeded in 5 steps: (1) Authorization of translation by the authors of the original BCI. (2) Translation from English to Arabic. (3) Submission of the translated version into Arabic to a committee of readers. (4) Backward translation to ensure there was no discrepancy between the two versions during the reverse translation. (5) Qualitative linguistic validation of the document obtained from seven patients having BC.

**Results:** Translation was authorized in February 2015. The reading committee that evaluated the clarity of the text admitted the version with minor revisions. The questionnaire was finally tested on seven patients with bladder tumor treated in the department of urology B at Ibn Sina Teaching Hospital. They all responded to the questionnaire without understanding nor filling difficulty. Therefore, no major changes were made following this qualitative assessment.

**Conclusion:** This Arabic version of BCI questionnaire will enable researchers from Arab countries to use a measurement tool validated and recognized internationally to assess QOL in patients with BC.

© 2018 Pan African Urological Surgeons Association. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

\* Corresponding author.

E-mail address: [imadziouziou@hotmail.com](mailto:imadziouziou@hotmail.com) (I. Ziouziou).

Peer review under responsibility of Pan African Urological Surgeons' Association.

<https://doi.org/10.1016/j.afju.2017.09.007>

1110-5704/© 2018 Pan African Urological Surgeons Association. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## Introduction

Bladder cancer (BC) as well as any other cancer affects the Quality of Life (QOL). For this reason Gilbert et al. developed and validated the Bladder Cancer Index (BCI) which was a reliable and disease-specific instrument to evaluate health-related quality of life HRQOL in patients with localized BC [1].

Other specific HRQL questionnaires were developed by the European Organisation for Research and Treatment of Cancer (EORTC) and the American organization for Functional Assessment of Cancer Therapy (FACT) and translated to many languages [2–4]. However, there is a lack of specificity in these HRQL questionnaires as they included common questions on wellbeing for oncologic patients in addition to a specific module for BC.

There is also a limitation in the disease stage as EORTC-QLQ-BLS24 and the FACT-Bladder questionnaires are applicable only for patients with non-muscle invasive bladder tumors (NMIBT) and the FACT Vanderbilt Cystectomy Index was exclusively for patients with muscle-invasive BC (MIBC) [2–4]. Comparative studies of HRQOL in mixed patients with BC at different stages (NMIBT and MIBC) may be difficult using one of these questionnaires.

The BCI questionnaire overcame these limitations. It is entirely specific to BC patients and applicable for NMIBT and MIBC whatever the treatment received.

BCI was developed in 3 steps: review of the literature, development of the questionnaire and validation by assessment of consistency and reproducibility.

The aim of our study was to translate the BCI into Arabic with linguistic validation of this version which may be useful for Arab community and researchers.

## Subjects and methods

### *Original version of BCI*

The BCI was developed and validated by Gilbert et al. at the University of Michigan in 2004.

This questionnaire is composed of three parts and a supplement:

- The first part explores the patient's general condition (7 items).
- The second part explores the urinary function (9 items).
- The third part explores the digestive function (6 items).
- The last one provides more information on sexual function, body image and well-being (21 items).

A score of 1–5 is assigned to each response to each item [1].

### *Translation into Arabic and linguistics qualitative validation of the BCI*

We used the “back-translation” technique and proceeded by the following steps [5]:

- Permission from the authors to translate and use the original questionnaire in the Arabic language (the BCI is protected by copyright).
- Translation from English to Arabic.
- Submission of the translated version into Arabic to a committee of readers in order to assess the clarity and consistency of the text.
- Translation from Arabic to English (forward–backward translation sequence) to ensure there was no distortion between the two questionnaires during the reverse translation.
- A qualitative linguistic validation of the document obtained from seven patients with BC. The average time the patient needed to complete the questionnaire was 40 min. This qualitative validation consisted of a personal interview. The following criteria were evaluated:
  - accessibility and understanding of the vocabulary,
  - difficulties and ambiguities,
  - relevance of the questions,
  - comments and suggestions of the participant.

## Results

Translation and use of the questionnaire in the Arabic language was authorized in February 2015 by the team from the University of Michigan who developed the BCI [1].

The translation of BCI was performed by a urologist who had satisfactory knowledge of both languages: Arabic and English (IZ).

The reading committee that evaluated the clarity of the text was composed of three urologists (KE, AK, AI) who admitted the version.

The document was finally tested on seven patients with bladder tumor (four with non-muscle invasive BC, and three with muscle-invasive BC) treated in the department of urology B at Ibn Sina Teaching Hospital. Each of these patients was interviewed by the same investigator (AT).

They all responded to the questionnaire without understanding nor filling difficulty. Therefore, no major changes were made following this qualitative assessment.

## Discussion

BC is the 7th most frequently diagnosed cancer in the male population worldwide, and the 11th when both genders are considered. Arab world is not an exception from this disease which has had elevated incidence and mortality rates in 2012: incidence ranged from 2.83 (Mauritania) to 21.84 (Egypt) per 100,000 persons/year in male sex, and 0.25 (Yemen) to 5.55 (Egypt) per 100,000 persons/year in female sex. Mortality ranged from 1.16 (Yemen) to 6.51 (Egypt) per 100,000 persons/year (Table 1) [6].

An assessment of QOL in the field of BC is particularly useful. Many treatments are actually developed and may replace classical therapies. These emergent treatments should not be evaluated only on their efficacy but also on their impact on QOL. Objective tools specific to BC are very helpful in assessing such treatments.

**Table 1** Incidence and mortality rates in Arab countries [1].

Country	Incidence in male sex ASR	Incidence in female sex ASR	Mortality ASR
Morocco	10.80	1.25	3.13
Algeria	10.84	1.50	2.62
Mauritania	2.83	1.73	1.59
Tunisia	15.30	1.75	3.46
Libya	15.33	2.29	3.23
Egypt	21.84	5.55	6.51
Jordan	12.28	1.80	3.21
Sudan	3.51	1.23	1.64
Saudi Arabia	5.71	1.22	1.41
Syria	16.06	3.50	4.87
Oman	6.69	2.33	2.46
Yemen	3.57	0.25	1.16
United Arab Emirates	5.20	2.43	1.53
Iraq	19.90	5.23	6.33

ASR: age-specific rates per 100,000 persons/year.

Moreover the urinary diversions following a radical cystectomy should be compared by homogeneous and measurable tools like BCI.

The validation of translated versions of BCI is very interesting in order to compare the functional results in different populations with cultural and socio-economic discrepancies.

To our knowledge, the BCI was translated and validated into French, Spanish and Hungarian languages [7–9].

Translating the BCI questionnaire seems to be better than developing a new tool as it may allow collaboration with other researchers worldwide using the same questionnaire.

We acknowledge that the major aim of our translation and linguistic validation was to encourage researchers from Arab countries to use BCI.

We believe that this questionnaire would be difficult for routine clinical use. It includes 34 items and this may take long time to answer and many patients may not like to do that.

The questionnaire was given to educated patients with good level in the “Fusha” Arabic. Therefore they have not any understanding difficulties. For other patients, we believe we should validate other versions in “Darija” (Moroccan native language) and Amazigh languages (Tarifit, Tachelhit, Tamazight). The questionnaire may have local versions within the Arab countries as the “slang language” is different and many patients may understand the questionnaires easier if the local words (for urination, defecation. . .etc) were used.

## Conclusion

This Arabic version of BCI questionnaire will enable researchers from Arab countries to use a measurement tool validated and recognized internationally to assess QOL in the management of bladder tumors.

## Ethical committee approval

Lecturers of the “B” Urology Department, Teaching Hospital Ibn Sina.

## Consent from the patient

All patients gave their oral consent for this study, they filled the questionnaire as acceptance.

## Authors’ contributions

Imad Ziouziou: Translation from English to Arabic and reverse translation.

Mohammed Alae Touzani: Interview of the patients and searching difficulties in filling the questionnaire.

## Source of funding

We needed no funding for this study.

## Conflict of interests

The authors declare that there are no conflicts of interest regarding this manuscript. They also declare that they have not received any funding for this study.

## Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <https://doi.org/10.1016/j.afju.2017.09.007>.

## References

- [1] Gilbert SM, Dunn RL, Hollenbeck BK, Montie JE, Lee CT, Wood DP, et al. Development and validation of the Bladder Cancer Index: a comprehensive, disease specific measure of health related quality of life in patients with localized bladder cancer. *J Urol* 2010;183(May (5)):1764–9, <http://dx.doi.org/10.1016/j.juro.2010.01.013>. Epub 2010 March 17. PubMed PMID: 20299056.
- [2] Sprangers MA, Cull A, Groenvold M, Bjordal K, Blazeby J, Aaronson NK. The European Organization for Research and Treatment of Cancer approach to developing questionnaire modules: an update and overview. *EORTC quality of life study group. Qual Life Res* 1998;7: 291–300.

- [3] Cookson MS, Dutta SC, Chang SS, Clark T, Smith Jr JA, Wells N. Health related quality of life in patients treated with radical cystectomy and urinary diversion for urothelial carcinoma of the bladder: development and validation of a new disease specific questionnaire. *J Urol* 2003;170:1926–30.
- [4] Anderson CB, Feurer ID, Large MC, Steinberg GD, Barocas DA, Cookson MS, et al. Psychometric characteristics of a condition-specific, health-related quality-of-life survey: the FACT-Vanderbilt Cystectomy Index. *Urology* 2012;80:77–83.
- [5] Brislin RW. Back-translation for cross-cultural research. *J Cross Cult Psychol* 1970;1(September (3)):185–216.
- [6] Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, et al. Cancer incidence and mortality worldwide: sources, methods and major patterns in GLOBOCAN 2012. *Int J Cancer* 2015;136:E359–86.
- [7] Gaunez N, Larré S, Pirès C, Doré B, Wei J, Pfister C, et al. French translation and linguistic validation of the questionnaire Bladder Cancer Index (BCI). *Prog Urol* 2010;22(May (6)):350–3, <http://dx.doi.org/10.1016/j.purol.2011.12.004>. Epub 2012 January 20. French. PubMed PMID: 22541905.
- [8] Schmidt S, Riel R, Frances A, Lorente Garin JA, Bonfill X, Martinez-Zapata MJ, et al. Bladder cancer index: cross-cultural adaptation into Spanish and psychometric evaluation. *Health Qual Life Outcomes* 2014;12(February):20, <http://dx.doi.org/10.1186/1477-7525-12-20>. PubMed PMID: 24528506; PubMed Central PMCID: PMC3928086.
- [9] Hevér NV, Péntek M, Balló A, Gulácsi L, Baji P, Brodszky V, et al. Health related quality of life in patients with bladder cancer: a cross-sectional survey and validation study of the Hungarian version of the Bladder Cancer Index. *Pathol Oncol Res* 2015;21(July (3)):619–27, <http://dx.doi.org/10.1007/s12253-014-9866-7>. Epub 2014 Dec 1. PubMed PMID: 25434791.