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Translation and validation of the EORTC brain cancer module (EORTC QLQ-BN20) for use in Iran

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Abstract

Background: The aim of this study was to translate the EORTC quality of life questionnaire for brain cancer, the QLQ-BN20, into Persian, and to evaluate its psychometric properties when used among brain cancer patients in Iran.

Methods: A standard backward and forward translation procedure was used to generate the Persian language version of the QLQ-BN20. The QLQ-BN20 was administered together with the QLQ-C30 to 194 patients diagnosed with primary brain cancer. Multitrait scaling and confirmatory factor analysis (CFA) were used to evaluate the hypothesized scale structure of the questionnaire. Internal consistency reliability was estimated with Cronbach's alpha. The ability of the QLQ-BN20 to distinguish between patient subgroups formed on the basis of performance status and cognitive status was evaluated, as was the responsiveness of the questionnaire to changes in performance status over time.

Results: Multitrait scaling and CFA results confirmed the hypothesized scale structure. The measurement model was consistent across men and women. Internal consistency reliability of the multi-item scales ranged from 0.74 to 0.89. The QLQ-BN20 distinguished clearly between patients with relatively good versus poor performance and cognitive status, and changes in scores over time reflected changes observed in performance status ratings.

Conclusions: These results support the validity and reliability of the QLQ-BN20 for use among Iranian patients diagnosed with primary brain cancer. Future studies should examine the psychometrics of the questionnaire when used in patients with brain metastasis.

Keywords: Quality of life, Brain cancer, QLQ-BN20, QLQ-C30, Psychometric evaluation

Background

It is estimated that 22,020 patients are diagnosed annually with brain cancer in the United States [1]. In Iran, brain cancer is the 11th most common cancer, with an annual incidence rate of approximately 550 cases for males and 800 for females [2]. Although brain cancer is relatively rare, it is a disease with serious symptoms and a poor prognosis. [1,3]. The 5-year relative survival rate is 36% [1].

There is no definite cure for patients with brain cancer. Therefore, the primary aim of treatment is to

prolong the patient's life and to palliate symptoms [4]. The treatment for the most common brain tumors, gliomas, includes neurosurgery, followed by adjuvant radiotherapy, chemotherapy or combined chemoradiotherapy. All of these treatments may cause significant complications or have toxic side-effects [5,6]. Therefore, in order to select the best treatment for a specific patient it is necessary to take into consideration the stage of the disease, any risk associated with the given treatment and the patient's general health. An assessment of patient-reported outcomes, and more specifically health-related quality of life (HRQOL), is very important in this respect.

Two well-known, generic questionnaires for assessing the HRQOL of patients with cancer include The European Organization for Research and Treatment of Cancer Core Questionnaire (the EORTC QLQ-C30) and the

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