

# QOLIBRI

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In [traumatic brain injury](#) patients, generic and disease-specific aspects of [HRQOL](#) need to be assessed with measures of adequate psychometric quality, applicable across different populations and cultural conditions. The QOLIBRI is a promising instrument for sensitive patient-centered specific outcome evaluation after TBI <sup>1)</sup>.

## PDF

It was developed in an international multicentre study.

The QOLIBRI assesses six dimensions of HRQoL according to six subscales (satisfaction with Cognition, Self, Daily Life and Autonomy, and Social Relationships and feeling bothered by Emotions and Physical Problems). The QOLIBRI is applicable to people with TBI of all severities and at all time points after the injury

It has been validated in several languages; however, traditional psychometric approaches have critical limitations. Therefore, Chang et al. applied the Rasch model for validating the 37-item QOLIBRI scale among a Chinese population with [traumatic brain injury](#).

In total, 587 participants (mean age: 44.2 ± 15.4 years; women, 46.3%) were surveyed in neurosurgery departments at 6 hospitals in Taipei, [Taiwan](#).

Of the 6 subscales of the QOLIBRI, 4 (cognition, self, daily life and autonomy, and social relationships) were unidimensional, valid, and reliable, whereas the remaining 2 (emotions and physical problems) exhibited poor unidimensionality, item and person reliability, and person-item targeting. Five items (energy, concentrating, getting out and about, sex life, and achievements) showed considerable differential item functioning among age groups, disability levels, and time since traumatic brain injury.

According to item response theory, they identified psychometric issues in the emotions and physical problems subscales of the QOLIBRI as well as several differential item functioning items. Future research is required to determine whether similar results are observed in other language versions of the QOLIBRI or in other countries <sup>2)</sup>.

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Consequences after Traumatic brain injury (TBI) affect the injured person's self-image and quality of life. The purpose was to assess the health related quality of life (HRQoL) at 12 months after a TBI in patients admitted to regional trauma centres, and to evaluate the metric properties of the Norwegian version of the Quality of Life After Brain Injury (QOLIBRI) questionnaire.

Two hundred four patients with TBI of all severities were included. HRQoL at 12 months post-injury was measured by the QOLIBRI. It has a total scale and 6 subscales (satisfied with Cognition, Self, Daily Life and Autonomy and Social Relationships, and bothered by Emotions and Physical Problems). Demographic and injury related data were registered. Disability was registered by Glasgow Outcome Scale Extended (GOSE) and Rivermead Post-Concussion Questionnaire, and mental health by Hospital Anxiety and Depression Scale. Descriptive statistics, internal consistency by Cronbach's alpha and

Corrected Item-Total Correlations were calculated. Rasch analysis, Principal Component Analysis (PCA) and Structural Equation Modelling (SEM) were applied.

Mean age was 37.6 (SD 15.4) years; 72% were men, and 41% had higher education. Over 60% were severely injured. Mean Glasgow Coma Scale score was 9.3 (SD 4.5). According to the GOSE 5.9% had severe disability, 45.5% had moderate disability, and 48.5% had good recovery at 12 months post-injury. The QOLIBRI scales had a high internal consistency ( $\alpha = 0.75-0.96$ ), and only Physical Problems had an  $\alpha < 0.85$ . In the Rasch analysis all subscales and their items fit the Rasch model, except for the depression item in the Emotion subscale. PCA and SEM analyses supported a six-factor structure in a second-order latent model. The QOLIBRI supports an underlying unidimensional HRQoL model. The SEM model fit statistics of the second-order model indicated a moderate fit to the observed data (CFI = 0.86, TLI = 0.85, RMSEA = 0.076, SRMR = 0.061,  $\chi^2 = 1315.76$ ,

The Norwegian QOLIBRI has favourable psychometric properties, but there were some weaknesses related to its measurement properties of the total score when tested on a TBI population where many had severe TBI, and many had good recovery <sup>3)</sup>.

The QOLIBRI (Quality of Life after Brain Injury) is the first instrument specifically developed to assess health-related quality of life (HRQoL) of individuals after traumatic brain injury. Disease or condition-specific HRQoL instruments are assumed to be more sensitive to particular health conditions and therefore give more focused and more precise information than generic ones. The QOLIBRI was developed by an international task force in two multi-language studies involving over 2000 persons after traumatic brain injury (TBI).

The QOLIBRI is a comprehensive questionnaire with 37 items covering six dimensions of HRQoL after TBI. The questionnaire provides a profile of quality of life together with a total score. It is easy to fill in, and can be completed in 7-10 minutes. It is suitable for use in clinical settings, research studies, and population surveys.

The QOLIBRI questionnaire is free to use for researchers and non-profit organisations. There is a charge for commercial use.

For older people with TBI, the use of the QOLIBRI is generally appropriate and adding the domain of environment to the scale can be beneficial <sup>4)</sup>.

The use of SF-36 in combination with a TBI-specific instrument, i.e., QOLIBRI, seems promising. Consensus on preferred methodologies of HRQL measurement in TBI would facilitate comparability across studies, resulting in improved insights in recovery patterns and better estimates of the burden of TBI <sup>5)</sup>

## Italian validation

Giustini et al. report the results of the Italian validation of the QOLIBRI. A total of 147 participants with TBI who had previously been discharged from the Santa Lucia Foundation rehabilitation hospital were recruited to investigate the concurrent validity of the Italian version of the QOLIBRI and to compare this instrument with several functional and cognitive-behavioral scales, taking into account various clinical parameters. The QOLIBRI met the standard criteria for internal consistency, homogeneity and test-retest reliability. The results suggest that it is very sensitive in relation to outcome as measured by the [Extended Glasgow Outcome Scale](#) (GOS-E) and other instruments for functional assessment of disability, emotions and subjective health status, including the Hospital Anxiety and Depression Scale and the Short-Form 36. The QOLIBRI avoids some of the limitations of traditional scales for quantifying

residual functional capacity-Health-related quality of life after traumatic brain injury: Italian validation of the QOLIBRI, such as the Glasgow Outcome Scale and the GOS-E, and may contribute to the achievement of better quality-controlled care, medical decision-making, rehabilitation planning, and measurement of well-being and HRQoL from the patient's perspective. However, a longitudinal study is needed to assess the responsiveness of the QOLIBRI to changes over time <sup>6)</sup>.

see [QOLIBRI overall scale](#).

## Case series

The primary aim of a study was to adopt QOLIBRI (quality of life after brain injury) questionnaire in a proxy version (Q-Pro), i.e., to use caregivers for comparison and to evaluate whether TBI patients' judgment corresponds to that of their caregivers since the possible self-awareness deficit of the persons with TBI. A preliminary sample of 19 outpatients with TBI and their proxies was first evaluated with the Patient Competency Rating Scale to assess patients' self-awareness; then they were evaluated with the QOLIBRI Patient version (Q-Pt) and a patient-centered version of the Q-Pro. Subsequently, 55 patients and their caregivers were evaluated using the patient-centered and the caregiver-centered Q-Pro versions. Q-Pt for assessing Quality of Life (QoL) after TBI, as patients' subjective perspective and Q-Pro to assess the QoL of patients as perceived by the caregivers. The majority of patients (62.2%) showed better self-perception of QoL than their proxies; however, patients with low self-awareness were less satisfied than patients with adequate self-awareness. Low self-awareness does not impair the ability of patients with TBI to report on satisfaction with QoL as self-perceived <sup>7)</sup>.

1)

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5)

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7)

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