Functional Independence Measure in Iran: a Confirmatory Factor Analysis and Evaluation of Ceiling and Floor Effects in Traumatic Brain Injury Patients

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**Background:** The functional independence measure (FIM) is one of the most important assessment instruments for motor and cognitive dependence in rehabilitation medicine; however, there is little data about its confirmatory factor analysis (CFA) and ceiling/floor effects from other countries and also in Iranian patients.

**Objectives:** The aim of this study was to evaluate a two-factor model (motor and cognitive independence as latent variables) and ceiling/floor effects for FIM in Iranian patients with traumatic brain injuries (TBI).

**Patients and Methods:** In this cross-sectional study, 185 subacute TBI patients were selected from emergency and neurosurgery departments of Poursina Hospital (the largest trauma hospital in northern Iran, Rasht) using the consecutive sampling method and were assessed for functional independence.

**Results:** The results of this study showed that the floor effect was not observed; however, ceiling effects were observed for the FIM total score and its subscales. The confirmatory factor analysis showed that the chi-square/df ratio was 2.8 for the two-factor structure and the fit indices for this structural model including root mean square error of approximation (RMSEA) = 0.099, normed fit index (NFI) =
0.96, tucker lew is index (TLI) = 0.97, comparative fit index (CFI) = 0.97 were close to standard indices.

**Conclusions:** Although ceiling effects should be considered for rehabilitation targets, the two-factor model of FIM (motor and cognitive independence) has an eligible fitness for Iranian patients with TBI.

**Keywords:** Traumatic Brain Injury; Confirmatory Factor Analysis; Disability Evaluation