Responsiveness and discriminant validity of the Child and Adolescent Scale of Participation (CASP) in a US sample of children and youth with Traumatic Brain Injury (TBI) across a 3-year period

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Introduction

- Participation of children and adolescents with TBI has been found to be restricted in comparison to their typically-developing peers. ¹
- Follow-up beyond the acute period of recovery is required to assess the impact of TBI over time. ²
- The CASP³ assesses participation of children and adolescents with TBI in home, school and community settings.
- Studies report on the properties of the CASP⁴-⁶ including discriminant validity evidence⁴-⁵; however responsiveness of the CASP over time has never been assessed.

Objectives

1. To examine the responsiveness of CASP scores among children and youth with TBI and a comparison group with arm injuries across a 3-year period.
2. To examine the differences in CASP scores among children and youth with TBI mild, moderate, severe and arm injuries across a 3-year period (discriminant validity).

Methods

- Longitudinal prospective cohort study⁷
- 10 hospitals
- 515 children ages 0-18 years
  TBI: n = 401 (77.9%): mild (69.1%), moderate (7.4%) , severe TBI (1.4%)  
  Arm injuries: n = 114 (22.1%)
- Majority: Male (69.5%), White (73.4%), English speakers (95.5%)
- Pre-injury functioning -  3 – 12 -  24 - 36 months post – injury.

Results

CASP scores of Arm, TBI mild, TBI moderate, TBI severe groups over time periods.

- A decrease in scores: pre-injury → 3m post-injury in all groups.
- A gradual increase in scores: 3m post-injury → 36m post-injury in all groups* 
  *TBI severe group – A decrease in scores – 24m post-injury → 36m post-injury
- Arm & TBI Mild groups - 36m post-injury scores higher than pre-injury.
- TBI Moderate & Severe groups - 36m post-injury scores lower than pre-injury.
- A significant time effect between groups (F = 13.066, p < 0.001)
  A significant interaction effect between time and type of group (F = 2.306, p = 0.014).
  TBI severe – significantly lower than all other groups
  Low-Moderate effect sizes (r = 0.474 – 1.055)

Conclusions

Evidence of the CASP’s responsiveness to change over time particularly for the severe TBI group.

- A pattern of gradual increase in the CASP scores over time for the majority of groups.
- Majority of Arm & Mild TBI returned to pre-injury and/or higher scores at 36m post-injury.
- Majority of Moderate & Severe TBI did not return to pre-injury at 36m post-injury.
- Consistent with prior discriminant validity evidence.⁴-⁵

The CASP is able to differentiate children with more severe injuries from those with milder injuries.

- Support the use of the CASP for assessing participation of children with TBI across levels of severity and time.
- Limitations: different factors might have affected the results (disproportionate sample size, differences associated with each hospitals, reporter, using both English and Spanish version).
- Future research necessary with larger samples of moderate-severe TBI.

References


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