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

Anat Golos, Ph.D., School of Occupational Therapy of Hadassah and the Hebrew University, Jerusalem, Israel.
Gary Bedell, Ph.D., Tufts University, Department of Occupational Therapy, Medford, MA, USA.

Introduction

- Participation of children and adolescents with TBI has been found to be restricted in comparison to 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.
- The CASP has prior reported evidence of reliability and validity evidence.³⁻⁴
- Responsiveness of the CASP over time has never been assessed.

Research Aims

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).

Sample & Methods

- De-identified data from longitudinal prospective cohort study (10 hospitals in the USA)⁷
- 515 children ages 0-18 years (M = 12.12 years, SD = 3.88): 0-4 (1%), 5-9 (31%), 10-14 (38%), 15-18 years (30%) 
- TBI: n=401 (77.9%): Mild (69.1%), Moderate (7.4%), Severe (1.4%); Arm injuries: n=114 (22.1%)
- Male (69.5%), English speakers (95.5%)
- Race/ethnicity: White (73.4%), Hispanic/Latino (6.4%), Black/African American (2.5%); Asian (1.7%); Other (16%)
- Examined CASP scores (parent-report) at baseline (pre-injury) and 3, 12, 24, and 36 months post-injury
- Repeated measures analysis of variance ("within-between" model) and Scheffé post-hoc tests

References


Results

Mean CASP scores of TBI and Arm Injury groups over time

A significant time effect among groups (F = 13.066, p < 0.001)
A significant interaction effect between time and type of group (F = 2.306, p = 0.014)
Severe TBI scores significantly (p<0.001) lower than other groups at all time periods; Medium to large effect sizes (d = 0.473 - 1.133)

Summary & Conclusions

CASP was responsiveness to change over time particularly for Severe TBI group (Aim 1):
- A pattern of gradual increase in CASP scores over (time except for Severe TBI group).
- On average, Arm Injury & Mild TBI returned to pre-injury scores at 36m post-injury.
- On average, Moderate & Severe TBI did not return to pre-injury at 36m post-injury.

CASP differentiated children with more severe from those with milder injury (Aim 2):
- Consistent with prior discriminant validity evidence.⁴⁻⁵

Conclusions:

- Results provide support for use of CASP to assess participation of children and youth with TBI across levels of severity and time.
- Limitations: different factors might have affected the results (unequal representation of sample characteristics, child’s age, different hospitals, use of both English and Spanish versions).
- Future research needed with larger sample of children and youth with moderate-severe TBI.

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Contacts: anat.golos@mail.huji.ac.il; gary.bedell@tufts.edu