Holland Bloorview
Kids Rehabilitation Hospital

The Community Mobility Assessment-2 (CMA-2): Reliability and validity in youth with ABI

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Background

- The Community Mobility Assessment (CMA) is a performance-based, observational assessment developed for use with clients with an acquired brain injury (ABI) in an urban built environment.
- The purpose of the CMA is to determine the extent to which an adolescent with an ABI could access his/her community safely and independently.
- CMA results are used by the therapist(s) to provide the client and family with recommendations around any observed physical or cognitive concerns that could influence safety and independence.
- Since the development of the CMA, urban built environments have become more complex, and communication technology used regularly by youth has advanced dramatically.
- These changes prompted a re-examination of the well-validated content of the CMA and creation of a revised version known as the CMA-2.

Objectives

- To evaluate the CMA-2's inter-rater reliability and aspects of construct validity.

Methods

- **Study sample***:* 27 youth with ABI, ages 12 to 19 years.
- **Inter-rater reliability:** Two trained assessors **(PT and OT pair)** accompanied youth on a CMA-2 outing. One administered the **CMA** while the other observed. Scoring was **independently** completed by each therapist post-outing.
- **Construct validity:** Separate assessment by independent OT assessor with validity measures - *6-minute walk test* (6MWT)[fatigue], *PEDI-CAT* (mobility, social/cognitive/responsibility domains), and *Behavioural Assessment of Dysexecutive Syndrome* (BADS – Child Version)[problem solving, impulsivity, planning, alternating attention].
- **Analysis:** Inter-rater reliability evaluated via intra-class correlation coefficients (ICCs). Pearson correlations (r) for validity evaluations.

Community Mobility Assessment –2: A reliable and valid tool to see if clients with brain injuries can access the community safely and independently

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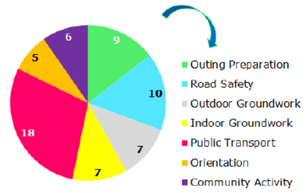
CMA-2 Content Overview (# of items/category)



Results

Inter-rater reliability

- **Cognitive component** showed excellent inter-rater reliability (ICC=0.90, 95%CI=0.80-0.96)
- **Physical component** reliability was moderate (ICC=0.67, 95%CI=0.40-0.84)

Construct validity

- **Adequate construct validity** with:
  - PEDI-CAT (r=>0.44,p<0.03)
  - 6MWT (r-0.40,p=0.04)
- BADS association (r=0.23,p=0.23) **did not reach hypothesized levels** of 0.60.

Discussion

- Sufficient to move ahead with CMA-2 given reliabilities of **cognitive and physical components.**
- Physical component reliability was **negatively affected** by the surprising lack of score spread in this ABI sample.
- Other than power limitations linked with a small 'n', unclear why the BADS-C did not show a stronger association.
- **Further studies** with larger samples are needed to investigate the **executive function** construct.

Conclusions

- The CMA-2 has **sufficient psychometric strength** to support clinical use within pediatric ABI programs.
- A youth's CMA-2 results can be shared with families and community partners **to guide discussion and recommendations** about community safety and return to school.

Knowledge Translation

- Develop and pilot test a **Certification Training program** for PTs and OTs to support CMA-2 transfer to clinical care and research.
- Design a **Simulation Based** training program – in situ training (OT and PT participants go into the community on a CMA-2 outing with a simulated patient).
- Build **training materials** to be housed in a **cloud based educational platform.**
- In 2019, we will be looking for PTs and OTs to do online training and evaluate the CMA-2 materials.

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