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Validation of the Medication Box Task Assessment

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INTRODUCTION

- Acquired brain injury (ABI) is an injury within the brain that occurs after birth and is unrelated to degenerative diseases or conditions. The most common causes are due to a traumatic brain injury (TBI) and cerebral vascular accident (CVA) (Brain Injury, 2015).
- There is a need for clinical assessments that can evaluate cognitive performance in relation to functional performance of everyday tasks for the ABI population (Hartman-Maer, et al., 2009).
- Two types of cognitive assessments are used to assess the ABI population: tabletop and occupation-based assessments ( Cooke, et al., 2006).
- Tabletop assessments may indicate the overall cognition or a specific aspect of cognition through pen and paper tests, such as answering questions or solving problems ( Garcia-Molina, et al., 2012).
- Occupation-based cognitive assessments, also known as performance-based assessments, measure cognition through a functional task, such as dressing, meal preparation, or medication management to assess an individual’s cognition ( Burgess, et al., 2006).

LITERATURE

- Depending on the level of cognitive deficits, many individuals with ABI face challenges with functional performance in occupations. These cognitive impairments indicate a greater need for rehabilitation in recovering from these injuries (Hartman-Maer, Hané, & Katz, 2009).
- For occupational therapists to provide client-centered care throughout the entire rehabilitation process, using an assessment that addresses occupational performance of cognition is imperative to functional outcomes (Burgess, et al., 2006).
- Studies suggest that tabletop assessments are frequently used with individuals with ABI as a method to gain a snapshot of cognitive impairment. However, these assessments often lack ecological validity, meaning the assessment is unlikely to reflect predictability of an individual’s occupational performance (Burgess, et al., 2006; Cooke, et al., 2006; Garcia-Molina, et al., 2012).
- Occupation-based cognitive assessments possess greater ecological validity because they are particularly sensitive to executive dysfunction and the impact on functional performance of everyday activities, (Maer, Krauss, & Katz, 2011). However, there is a limited number of assessments that have been validated for the population of ABI (Burgess, et al., 2006; Maer, Krauss, & Katz, 2011).
- Many occupation-based cognitive assessments can take up an hour or more to complete as they intend to be as close to real life activity as possible and require the use of real life environments like kitchens and bedrooms ( Cooke, et al., 2006; Hartman-Maer, et al., 2009).
- Implementation of occupation-based cognitive assessments in practice may be limited by their infeasibility and time constraints in most clinical settings (Hartman-Maer, et al., 2006).

METHODOLOGY

- This study aimed to validate the Medication Box Task assessment as an occupation-based cognitive assessment for individuals with ABI. A battery of gold standard tabletop assessments were used as criterion measurements against the Medication Box Task assessment.

RESULTS

- Seven out of eight participants made errors on the Medication Box Task assessment.
- There is no significant correlation (ρ=0.6, p=0.07) between participants who managed their own medication and the number of errors made on the Medication Box Task assessment.
- Significant correlation was found between missing pills and extra pills of the Medication Box Task assessment and type II error of the Tower of London.

DISCUSSION

- Based on the results of this study, the Medication Box Task assessment may not have construct validity as an occupation-based cognitive assessment for individuals with ABI.
- Limitations of the study include a small sample size, recruitment from one agency, and only high functioning participants were recruited.
- Errors made on the Medication Box Task assessment by seven out of the eight participants may be indications of safety risk, since seven out of the eight participants reported to have managed their own medication.
- Significant correlations found between the subcomponents of scoring for the Tower of London and the Medication Box Task Assessment, suggests that the Medication Box may have potential to be useful in identifying impairments in executive functioning.
- In conclusion, the discovery of safety risks in medication management supports the need for efficient occupation-based cognitive assessments in the field of occupational therapy. The Medication Box Task assessment may be further developed to address this need in the population of ABI.

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IRB Approval #10406

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