

## Effect of Cognitive Rehabilitation in Pediatric Population with Acquired Brain Injury: A Pilot Study

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**Abstract :** Acquired brain injury (ABI) is any physical and functional injury secondary to events that affect the brain tissue. It is one of the biggest causes of disability in the world and it has a high annual incidence in the pediatric population. There are several causes of ABI such as traumatic brain injury, central nervous system infection, stroke, hypoxia, tumors and others. The consequences can be cognitive, behavioral, emotional and functional. The cognitive rehabilitation is necessary to achieve the best outcomes for pediatric people with ABI. Cognitive orientation to daily occupational performance (CO-OP) is an individualized client-centered, performance-based, problem-solving approach that focuses on the strategy used to support the acquisition of three client-chosen goals. It has demonstrated improvements in the pediatric population with other neurological disorder but not in Spanish speakers with ABI. Aim: The main objective of this study was to determine the efficacy of cognitive orientation to daily occupational performances (CO-OP) adapted to Spanish speakers, in the level of independence and behavior in a pediatric population with ABI. Methods: Case studies with measure pre/post-treatment were used in three children with ABI, sustained at least before 6 months assessment, in school, aged 8 to 16 years, age ABI after 6 years old and above average intellectual ability. Twelve sessions of CO-OP adapted to Spanish speakers were used and videotaped. The outcomes were based on cognitive, behavior and functional independence measurements such as Child Behavior Checklist (CBCL), Behavior Rating Inventory of Executive Function (BRIEF), The Vineland Adaptive Behavior Scales (VINELAND, Social Support Scale (MOS-SSS) and others neuropsychological measures. This study was approved by the ethics committee of Universidad del Norte in Colombia. Informed parental written consent was obtained for all participants. Results: children were able to identify three goals and use the global strategy 'goal-plan-do-check' during each session. Verbal self-instruction was used by all children. CO-OP showed a clinically significant improvement in goals regarding with independence level and behavior according to parents and teachers. Conclusion: The results indicated that CO-OP and the use of a global strategy such as 'goal-plan-do-check' can be used in children with ABI in order to improve their specific goals. This is a preliminary version of a big study carrying in Colombia as part of the experimental design.

**Keywords :** cognitive rehabilitation, acquired brain injury, pediatric population, cognitive orientation to daily occupational performance

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