Concurrent and divergent validity of the Client's Intervention Priorities (CIP)© tool in a sample of individuals with traumatic brain injury: preliminary findings on an innovative Canadian instrument

Centre intégré universitaire de santé et de services sociaux du Centre-Sud-de-l'Île-de-Montréal

Québec

Jhon Alexander Moreno, Ph.D., Eduardo Cisneros, M.A, Geneviève Léveillé, B.Sc., Marie-Claude Guerrette, M.Sc. & Michelle McKerral, Ph.D.

Université de Montréal

CRIR
Centre de recherche interdisciplinaire en réadaptation du Montréal métropolitain

INTRODUCTION

Following traumatic brain injury (TBI), neurorehabilitation is guided by goals defined jointly by the individual, the rehabilitation team, and family caregivers. When individuals with TBI are involved in the process of goal setting and prioritization, treatment compliance and success increase as a result of higher levels of self-determination and motivation.

The Client's Intervention Priorities (CIP)© is a self-assessment tool for defining rehabilitation priorities according to perceived functioning in daily activities and social roles. The CIP tool was created to support post-acute neurorehabilitation. It is based on the Disability Creation Process (DCP) model and was developed to promote active participation, empowerment, and autonomy during neurorehabilitation.

OBJECTIVE

To investigate the concurrent and divergent validity of the CIP tool.

METHODS

Sixty-four individuals with TBI with a mean age of 39.6 (SD=14.1) years and 4.3 (SD=3.7) months post-injury were recruited at admission to an outpatient interdisciplinary neurorehabilitation program in a public rehabilitation center in Montreal, Quebec, Canada.

### Figure 1. Demographic characteristics for individuals with TBI (N=64)
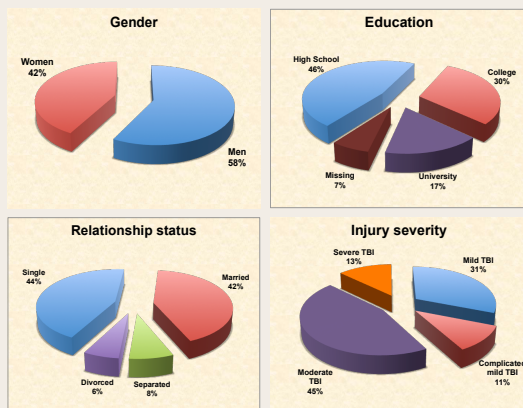
Measures

1. The Client's Intervention Priorities (CIP) tool (Cronbach's α = .82).

2. The French-Canadian version of the Mayo-Portland Adaptability Inventory-4 (MPAI-4) (Cronbach's α = .92)
   a) Ability subscale
   b) Adjustment subscale
   c) Participation subscale
   d) Composite score of the MPAI-4 addressing associated conditions (i.e., alcohol and drug use, psychotic symptoms, and law violations).

Figure 2. Flow diagram for the administration of the CIP tool
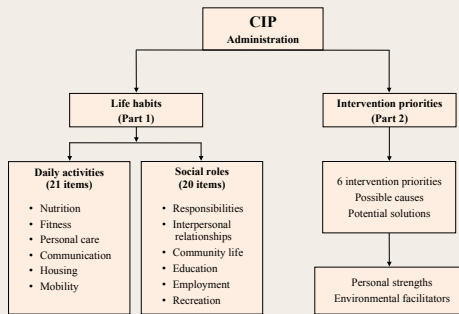
Design

Cross-sectional, descriptive study.

Procedure

The study was approved by the Research Ethics Board (REB) of the Center for Interdisciplinary Research in Rehabilitation of Greater Montreal of the *CIUSSS du Centre-Sud-de-l'Île-de-Montréal* (CIUSSS-CSMTL).

With their consent, participants were administered the questionnaires in a single session, within two weeks of admission to rehabilitation. Statistical analyses were conducted with IBM SPSS® version 25.

To assess convergent validity, Pearson product-moment correlation coefficients were calculated between the PIC tool scores (Daily Activities and Social Roles subscales, as well as a total CIP total score) and the MPAI-4 scores (indices of Ability, Adjustment, Participation, and the MPAI-4 total score).

To estimate divergent validity, Pearson product-moment correlation coefficients were calculated between the PIC tool scores (Daily Activities and Social Roles subscales, as well as a total CIP total score) and a composite score of the MPAI-4 addressing associated conditions.

RESULTS

As expected, there was a statistically significant correlation between the total score of the CIP tool and the total score of the MPAI-4 ($r = -.56$, $p < .01$). According to guidelines for the behavioral sciences, the association indicates a strong relationship between the PIC tool and MPAI-4 total scores.

Conversely, the CIP did not show statistically significant associations with a composite score of the MPAI-4 addressing associated conditions ($r = -.14$, $p > .05$), as shown in table 1.

Table 1. Correlation matrix between the CIP tool and MPAI-4 total scores and subscales

	1	2	3	4	5	6	7
1 Total score CIP	-						
2 CIP Daily Activities subscale	.89**	-					
3 CIP Social Roles subscale	.94**	.68**	-				
4 Ability subscale MPAI-4	-.57**	-.55**	-.52**	-			
5 Adjustment subscale MPAI-4	-.49**	-.50**	-.43**	.81**	-		
6 Participation subscale MPAI-4	-.46**	-.46**	-.41**	.72**	.79**	-	
7 Total score MPAI-4	-.56**	-.56**	-.50**	.94**	.95**	.85**	-
8 Composite score MPAI-4	-.14	.02	-.23	.11	.29*	.19	.21

*Note = * $p < .05$; ** $p < .001$*

CONCLUSIONS

- The present study reports strong evidence of construct validity of the CIP tool in a sample of individuals with TBI.

- The CIP tool is significantly related to at least one widely accepted outcome measure in traumatic brain injury. The medium to large effects of the associations between the MPAI-4 with the CIP tool and its subscales indicate that both measure similar latent constructs.

- The CIP tool and its subscales did not show significant correlations with associated conditions post-injury, such as alcohol and drug use, psychotic symptoms, and law violations. As such, they measure different constructs.

- The CIP is a helpful tool for neurorehabilitation to assist clinicians in the identification of problems requiring intervention according to the needs and priorities of individuals with TBI.

LIMITATIONS

- The validation process of the CIP tool documented in this study applies only to the first step of the administration (classification of life habits with degrees of ability).

- The psychometric properties of the CIP tool have not been documented in geriatric and pediatric samples.

- The validation samples of the CIP tool do not include individuals with low educational status.

- The CIP tool is exclusively available in French language and its use is limited to the adult population with brain injuries.