

Principal components analysis of the Client's Intervention Priorities (CIP)[©] tool in a sample of individuals with traumatic brain injury: preliminary evidence of the underlying factor structure

INTRODUCTION

The Client's Intervention Priorities (CIP)[©] is an innovative tool for the self-assessment of life habits and for determining intervention priorities during post-acute neurorehabilitation. Its development is based on an anthropological model of human development and disability (Disability Creation Process – DCP Model). The DCP model conceptualizes life habits as Daily Activities and Social Roles, which are frequently disrupted following traumatic brain injury (TBI).

The CIP tool helps individuals with TBI and rehabilitation clinicians to assess both of these theoretically based domains in a collaborative process. It is important to explore the factorial structure of the CIP tool to understand if the theoretically conceptualized subscales (i.e., Daily Activities and Social Roles) correspond to actual dimensions of the CIP tool. The factorial exploration is also helpful to identify items that could not be contributing to the dimensions confirmed.

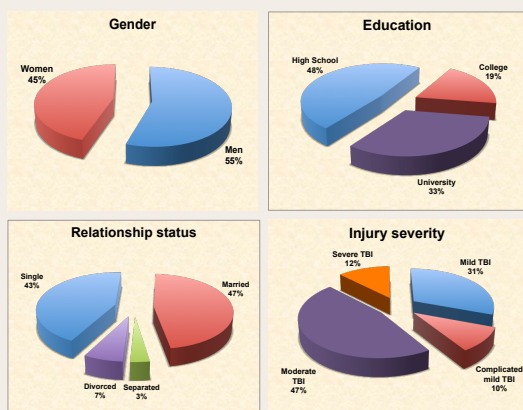
OBJECTIVE

To determine the factorial structure of the CIP tool.

METHODS

A total of 108 individuals with TBI with a mean age of 39.9 (SD=14.5) years and 4.3 (SD=3.9) months post-injury were recruited at admission to an outpatient TBI rehabilitation program in an interdisciplinary neurorehabilitation center in Montreal, Quebec, Canada.

Figure 1. Demographic characteristics for individuals with TBI (N=108)



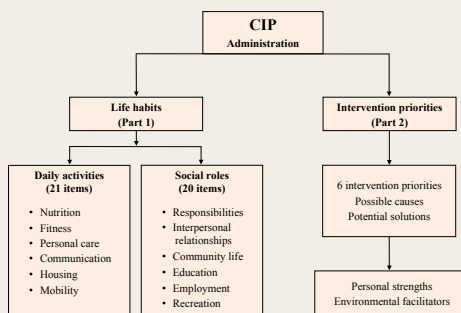
ACKNOWLEDGMENTS

Special thanks to all individuals with TBI who accepted to participate in this study

Measures

The Client's Intervention Priorities (CIP) tool (Cronbach's $\alpha = .80$).

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



Design

Cross-sectional, exploratory 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 CIP tool in a single session. Statistical analyses were conducted with IBM SPSS[®] version 25.

To explore the dimensions, the 41 items of the CIP tool were subjected to Principal Component Analysis (PCA)

RESULTS

The Kaiser-Meyer-Olkin value was .56, slightly below the recommended value. The Bartlett's Test of Sphericity reached statistical significance, supporting the factorability of the correlation matrix. PCA revealed 15 components with eigenvalues exceeding 1. Together, the 15 components explained a total of 71.2% of the variance.

An inspection of the screeplot and the results of Parallel Analysis supported the retention of four components. The four-component solution explained a total of 33% of the variance. Oblimin rotation was performed to aid in the interpretation with the four components showing a number of strong loadings and all variables loading substantially on only one component, as shown in table 1. Two items did not load in any of the components (e.g., "I prepare meals" and "I use alarms, advertising posters, traffic signs, and sirens). There were weak correlations between the four factors ($r = .07$ to $-.19$).

Table 1. Component matrix of the CIP tool

% of Variance	Items	Component			
		1	2	3	4
Component I – Social activities and self-care (17 items, 14.2%)	Sleeping	.691			
	Talking to people	.645			
	Reading	.598			
	Social interactions	.56			
	Self-care	.55			
	Eating	.518			
	Leisure	.515			
	Healthy behaviors	.502			
	Written communication	.501	.305		
	Physical activity	.492			
	Relationships	.491			
	Access to information	.481			
	Financial responsibilities	.375			
	Emotional care	.334			
	Transportation	.333			
	Food choice	.313			
	Home organization	.311			
Meal preparation					
Component II – Occupational roles (7 items, 7.3%)	Professional training		-.734		
	Technical training		-.67		
	Career choice		-.633		
	Job search		-.624		
	Social participation		-.489	-.326	
	Volunteering		-.487		
	Community participation		-.386		
Component III – Home and family activities (9 items, 6%)	Warning signs use				
	Homemaking		-.593		
	Household chores		-.591	.303	
	Outdoor activities		-.566		
	Sexuality		-.509		
	Cultural activities		-.484		
	Paid employment		-.462		
	Family responsibilities		-.442		
	Touristic activities		-.423		
Civic responsibilities		-.417			
Component IV - Autonomy and independence (6 items, 5.5%)	Bathroom use				.853
	Use of household equipment				.684
	Dressing				.591
	Residence		-.307	-.512	
	Mobility				.337
	Spirituality				-.318

CONCLUSION

There is preliminary evidence suggesting the existence of four components within the CIP tool. Confirmatory analyses with larger samples are necessary to corroborate the factor structure.