

CONFIRMATORY FACTOR ANALYSIS OF AN INTEGRATED MODEL OF PSYCOPATHOLOGY ASSESSED WITH THE MMPI-2-RF AND THE MCMI-III

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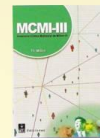
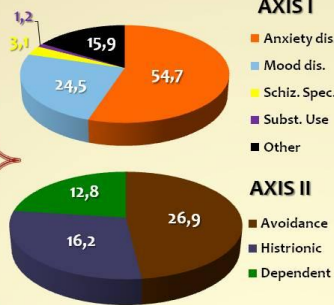


INTRODUCTION AND OBJECTIVE

Comorbidity patterns of common mental disorders conceptualized on Axis I of DSM-IV-TR can be understood in terms of at least three superordinate, organizing spectrum constructs: *Internalizing*, *Externalizing*, and *Thought disorders* (Markon, 2010). Personality disorders classified on Axis II of DSM-IV-TR are closely connected with many major mental disorders classified on Axis I-DSM-IV-TR (for a review, see Krueger & Eaton, 2010; Markon, 2010; Watson, 2008). Markon (2010) structures psychopathology into four broad superordinate dimensions (*Externalizing*, *Internalizing*, *Thought Disorder* and *Pathological Introversion*) that, according the recent review by Krueger et al. (2011), appear with reasonable consistency in the literature on the empirical structure of abnormal personality. In order to verify the structural validity of the model proposed, this study aimed to analyze the convergence between the Restructured Clinical (RC) scales and Personality scales (PSY-5) of the MMPI-2-RF and the Clinical Syndrome and Personality Disorder scales of the MCMI-III, two of the most commonly used psychological measures for the clinical assessment of psychopathology and personality disorders (Archer, et al. 2006; Muñiz & Fernández-Hermida, 2010).

SAMPLE

The initial sample consisted of 407 outpatients (183 men and 224 women, age 18-73 years) who were attending various psychiatry and psychology centers in Barcelona (Spain). After exclusion criteria had been applied the final sample comprised 377 outpatients, 167 men (44.3%) and 210 women (55.7%) aged between 18 and 73 years (mean 37.8, SD=11.48). All diagnoses were determined by psychiatrists in accordance with DSM-IV-TR criteria (APA, 2000).



PROCEDURE

The MCMI-III and MMPI-2-RF were administered to the clinical sample of 377 outpatients as part of their psychological assessment process. The MMPI-2-RF scales used in this study were the nine restructured clinical (RC) scales and the five pathological personality scales (PSY-5). All MCMI-III scales were used (eleven basic personality scales, three severe personality scales, seven clinical syndrome scales, and three severe clinical syndrome scales). A confirmatory factor analysis (CFA) was performed with all these scales.

RESULTS

Completely Standardized solution

MMPI-2-RF / MCMI-III Scales	Factors			
	ED/I	BD/E	ThD	PI
CC (Major depression)	0.87	Loadings < 30 omitted		
A (Anxiety)	0.79			
H (Somatoform disorders)	0.79			
NEGE-r (Negative emotion/N)	0.76			
SS (Thought disorder)	0.70			
R (Posttraumatic Stress Dis.)	0.65			
RC1 (Somatic complaints)	0.65			
RC8 (Aberrant experiences)	0.65		0.48	-0.42
RCd (Demoralization)	0.64			0.47
N (Bipolar disorder)	0.58	0.35	0.52	-0.53
RC7 (Dysf. Negative Emot.)	0.54			
C (Borderline)	0.47	0.43		
8A (Negativistic)	0.34	0.33	0.31	
6A (Antisocial)	0.95			
B (Alcohol dependence)	0.75			
7 (Compulsive)	-0.72	0.55		
RC4 (Antisocial Behavior)	0.70			
T (Drug dependence)	0.69			
DISC-r (Disconstraint)	0.64			
6B (Sadistic)	0.54			0.41
P (Paranoid)	0.92			
RC6 (Persecutory ideation)	0.79			-0.37
PP (Delusional disorder)	0.69			
PSYC-r (Psychoticism)	0.59	0.60		
RC3 (Cynicism)	0.58			
S (Schizotypal)	0.37			0.34
INTR-r (Intr./Low Posit. Em.)	-0.54			1.17
4 (Histrionic)	0.40			
5 (Narcissistic)	0.84			-1.11
RC2 (Low positive emotions)	-0.71			1.08
AGGR-r (Aggressiveness)	0.79			-1.06
2A (Avoidant)	0.87			
1 (Schizoid)	0.79			
RC9 (Hypomanic Activation)	0.47	0.43	0.62	-0.74
8B (Masochistic)	0.55			
D (Dysthymic disorder)	0.50			0.52
2B (Depressive)	0.46			0.48
3 (Dependent)	0.48			

Goodness of fit statistics	
Estimation procedure	ML with mean-corrected chi-square statistic
Corrected Chi-square with 555 degrees of freedom	2252.20
RMSEA (confidence interval)	0.089 (0.086 - 0.094)
CFI	0.97
GFI	0.99
Standardized RMR	0.045

INTER-FACTORS CORRELATION

Factors	ED/I	BD/E	ThD	PI
ED/I	1.000			
BD/E	.31	1.000		
ThD	.57	.49	1.000	
PI	.75	.31	.75	1.000

CONCLUSIONS

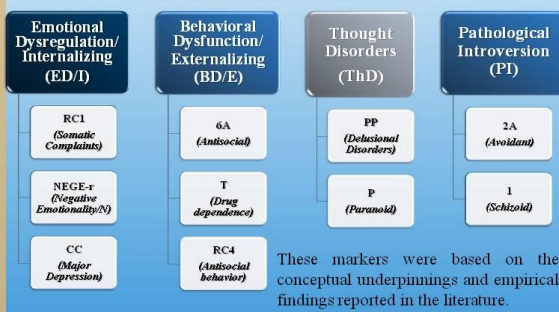
- Results of this study provide support for the broad higher-order factors of the integrated hierarchical model of psychopathology proposed by Markon (2010).
- The resulting factor structure confirms the large body of research documenting the distinction between *Internalizing (I)* and *Externalizing (E)* psychopathology. Moreover, the model is also consistent with extensions that include *Psychosis (Thought Disorders)* as another major form of psychopathology (Krueger & Eaton, 2010; Markon, 2010; Watson, Clark, et al., 2008), besides Internalizing and Externalizing disorders.
- Furthermore, when the MCMI-III and MMPI-2-RF scales are combined, the results provide support for a fourth dimension of *Pathological Introversion (PI)*, which has been well documented in theory and research on normal and abnormal personality variation (Krueger & Eaton, 2010) as being a separate dimension from either Internalizing, Externalizing or Thought disorders.
- In conclusion, the four psychopathology dimensions emerged in the present study of the convergence between the MMPI-2-RF and the MCMI-III measures provide support for the integration of axis I and II of the DSM-IV-TR in a common framework, and has important implications for understanding the organization of mental disorders as an integrated hierarchical model of psychopathology.

Independent Cluster-Basis-solution (ICB)

The FA design used in this study posed two initial problems. First, we believe that currently available information does not allow a full independent-cluster (confirmatory) solution in which each single measure loads on only one factor and has exactly zero loadings on the remaining factors to be proposed (see, for example, McDonald, 2005). In order to deal with this problem we opted for an approach that proposes an independent-cluster-basis (ICB) solution (McDonald, 2005), which can be considered as semi-confirmatory. When this is the case an ICB solution can be obtained by defining at least two markers per factor (Ferrando & Lorenzo-Seva, 2000; McDonald, 2005).

The second problem posed by our factor analytic design arises because many of the scales in the measures used share items in common, and in some cases the overlap is considerable. The approach taken here to deal with this problem is to specify, a priori, correlated residuals for pairs of measures that have four or more items in common.

MARKERS OF THE ICB solution



The ICB solution specified was fitted to the raw scale scores by using the previously defined markers. The fit of the proposed solution can be considered as acceptable.

REFERENCES

The references are to the back (jruiroz@ub.edu)



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We presented an integrated hierarchical model of psychopathology that more accurately captures empirical patterns of comorbidity between clinical syndromes and personality disorders.

In order to verify the structural validity of the model proposed, this study aimed to analyze the convergence between the Restructured Clinical (RC) scales and Personality scales (PSY-5) of the MMPI-2-RF and the Clinical Syndrome and Personality Disorder scales of the MCMI-III.

The MMPI-2-RF and MCMI-III were administered to a clinical sample of 377 outpatients (167 men and 210 women). The structural hypothesis was assessed by using a Confirmatory Factor Analytic design with four common superordinate factors. An independent-cluster-basis solution was proposed based on maximum likelihood estimation and the application of several fit indices. The fit of the proposed model can be considered as good and more so if we take into account its complexity.

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