Association Between MMPI-2-RF Somatic/Cognitive Scales and Medical Diagnoses Among Forensic Psychiatric Inpatients

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Introduction

- The MMPI-2-RF includes five Somatic/Cognitive Scales: Malaise (MLS), Gastrointestinal Complaints (GIC), Head Pain Complaints (HPC), Neurological Complaints (NUC), and Cognitive Complaints (COG) (Ben-Porath, 2012)
- These scales are associated with changes in pain levels following spine surgery, poor health orientation and bodily complaints, and self-reported cognitive and emotional complaints in medical and civil forensic settings (Gervais et al., 2009; Marek et al., 2015, 2018)
- However, to date, their associations with relevant medical diagnoses or pain-related diagnoses have not been examined in a criminal forensic inpatient setting

Research Question

Are there associations between the MMPI-2-RF Somatic/Cognitive Scales and medical diagnoses classified by a physician as:

- having symptoms consistent with scale content?
- having symptoms consistent with pain?

Method

- Sample: 907 forensic inpatients with valid MMPI-2-RF profiles (CNS < 15, VRIN-r < 80, TRIN-r < 80, F-r < 120, Fp-r < 100, Fs < 100)
- Medical diagnoses present at the time of testing were categorized by a general practice physician
- Five medical diagnostic categories: gastrointestinal diagnosis, head pain diagnosis, neurological diagnosis, cognitive diagnosis, & pain diagnosis

Independent Samples *t*-test Results

Table 1: Target Diagnosis Present vs. Absent

	Target Diagnosis Present			Target Diagnosis Not Present				
	n	*M*	*SD*	*n*	*M*	*SD*	*p*	*g*
MLS	---	---	---	---	---	---	---	---
GIC	112	**52.6**	11.1	795	**50.5**	9.9	.07	0.20
HPC	45	**55.3**	12.9	862	**50.6**	9.9	.02	0.46
NUC	89	**63.8**	14.0	818	**56.4**	12.4	<.01	0.59
COG	159	**52.0**	11.2	748	**51.9**	12.3	.93	0.01

Table 2: Target Diagnosis Present vs. No Medical Diagnosis

	Target Diagnosis Present			No Medical Diagnosis				
	n	*M*	*SD*	*n*	*M*	*SD*	*p*	*g*
MLS	---	---	---	---	---	---	---	---
GIC	112	**52.6**	11.1	552	**49.9**	9.0	.02	0.28
HPC	45	**55.3**	12.9	552	**50.3**	9.9	.01	0.50
NUC	89	**63.8**	14.0	552	**56.2**	12.7	<.01	0.59
COG	159	**52.0**	11.2	552	**51.3**	11.7	.49	0.06

Table 3: Pain Diagnosis Present vs. Absent

	Pain Diagnosis Present			Pain Diagnosis Not Present				
	n	*M*	*SD*	*n*	*M*	*SD*	*p*	*g*
MLS	267	**54.0**	12.2	640	**52.7**	11.1	.15	0.11
GIC	267	**52.0**	11.4	640	**50.3**	9.4	.03	0.17
HPC	267	**51.6**	10.2	640	**50.6**	10.0	.14	0.11
NUC	267	**58.6**	12.1	640	**56.5**	13.0	.02	0.17
COG	267	**53.1**	12.6	640	**51.4**	11.8	.045	0.15

Table 4: Pain Diagnosis Present vs. No Medical Diagnosis

	Pain Diagnosis Present			No Medical Diagnosis				
	n	*M*	*SD*	*n*	*M*	*SD*	*p*	*g*
MLS	267	**54.0**	12.2	552	**52.7**	11.2	.14	0.11
GIC	267	**52.0**	11.4	552	**49.9**	9.0	<.01	0.20
HPC	267	**51.6**	10.2	552	**50.3**	9.9	.06	0.14
NUC	267	**58.6**	12.1	552	**56.2**	12.7	<.01	0.19
COG	267	**53.1**	12.6	552	**51.3**	11.7	.04	0.16

Results

- Those with head pain and neurological diagnoses had statistically significantly higher scores on HPC & NUC, respectively, than those without these diagnoses
- Comparing patients with a target diagnosis to those with no medical diagnoses, a similar pattern emerged, although GIC was also significant
- Comparing patients with versus without pain-related diagnoses, statistically significant differences were found for GIC, NUC, & COG, but effect sizes were negligible
- Comparing patients with pain to those with no medical diagnoses, GIC, NUC, and COG were again statistically significant, but only GIC had a small effect

Discussion

- Head Pain Complaints and Neurological Complaints—and to a lesser degree, Gastrointestinal Complaints—were particularly associated with conceptually relevant medical conditions in a forensic inpatient setting
- However, all five scales had negligible associations with pain-related diagnoses

Limitations & Future Directions:

- One limitation was the use of only one physician coder; we've recruited 2 more coders and are planning to re-examine our findings after exploring the reliability of their coding
- With three coders, we are also hoping to code for malaise-related diagnoses

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