

**PROMIS Physical Function CAT Correlates with PTSD But Not Anxiety and Depression in Orthopaedic Trauma Patients**

*Ami R. Stuart, PhD; David L. Rothberg, MD; Erik N. Kubiak, MD; Thomas F Higgins, MD; University of Utah, Salt Lake City, Utah, USA*

**Purpose:** The relationship between traumatic injury and physical disability is well established in the literature. More recent data would suggest that pain, depression, and anxiety may have an equally powerful influence on long-term function as the severity of physical injury. The purpose of this study is to establish the correlation between patients’ postoperative anxiety and depression, PTSD (posttraumatic stress disorder) as determined by validated measures and PROMIS (Patient Reported Outcomes Measurement Information System) physical function computer adaptive test (PF CAT) scores.

**Methods:** With IRB approval, orthopaedic trauma patients were administered PROMIS PF CAT, Hospital Anxiety and Depression Score (HADS), and PTSD Checklist (PCL) score. Descriptive statistics were used to analyze demographic data. Mean and standard deviation (SD) and median and interquartile range (IQR), were used to analyze questionnaire responses. Pairwise correlations between the three questionnaires were assessed using Spearman’s correlation coefficient (*r*). *P* values <0.05 were taken to be statistically significant.

**Results:** 69 patients had complete data sets. A score greater than 50 on the PCL represents clinically significant PTSD. Scores on the PF CAT are compared to the general population mean of 50 with a standard deviation of 10; a score of 38.7 suggests the patient functions at a level greater than 1 SD below population means. The HADS has separate depression and anxiety subscales with a score on either subscale of greater than 11 representing clinical presence of disease. Descriptive statistics are reported in Table 1. Correlation between the PCL and PF CAT, HADS-Anxiety, and PCL were statistically significant (Table 2).

**Conclusion:** The orthopaedic trauma population in this sample showed evidence of depression more than anxiety or PTSD. However, physical function impairment correlated most closely with presence of PTSD, and PTSD correlated with anxiety. The PTSD correlation confirms prior findings, but interestingly, the dissociation between physical function and depression/anxiety runs contrary to previous research on the topic.

**Table1. Descriptive Summary**

	N	Mean (SD)	Median (IQR)
HADS-Anxiety	69	7.8 (2.4)	7.0 (6.0, 9.0)
HADS-Depression	69	12.8 (1.5)	13.0 (12.0, 14.0)
PF CAT	69	38.7 (11.1)	35.6 (30.6, 47.7)
PTSD	69	25.9 (9.1)	23.0 (20.0, 31.0)

See pages 99 - 147 for financial disclosure information.

**Table 2. Estimate of Spearman's Correlation Between Variables**

Variables	Sample Correlation	95% CI	P Value for H0:Rho = 0
PF CAT*PTSD	-0.462	(-0.628, -0.25)	<0.0001
PF CAT*HADS-Anxiety	-0.126	(-0.351, 0.115)	0.3050
PF CAT*HADS-Depression	-0.166	(-0.386, 0.075)	0.1734
PTSD*HADS-Anxiety	0.546	(0.352, 0.691)	<0.0001
PTSD*HADS-Depression	0.055	(-0.184,0.288)	0.6540
HADS-Anxiety*HADS-Depression	0.066	(-0.174, 0.298)	0.5896

- The FDA has not cleared this drug and/or medical device for the use described in this presentation (i.e., the drug or medical device is being discussed for an "off label" use). For full information, refer to page 600.