

Every Four-legged Animal is Indeed a Dog: Investigating the Prevalence of Post-concussive Symptoms in a Non-concussed Psychiatric Sample

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Significant base rates of post-concussion syndrome symptoms are observed in a non-concussed psychiatric sample.

BACKGROUND

- Post-concussion syndrome (PCS) is defined as the persistence of physical, cognitive, and psychological deficits for greater than 3 months following a mild-traumatic brain injury (mTBI) (Bigler, 2008).
- Research demonstrates high PCS symptom endorsement rates among a variety of healthy populations, raising concerns around the validity of PCS diagnostic criteria (Wang et al., 2006; Zakzanis & Yeung, 2011; Iverson & McCracken, 1997).
- PCS-like symptoms are not best predicted by the brain injury, rather they are better predicted by preinjury psychiatric problems (Ponsford et al., 2012; Donnell et al., 2012).
- **Are there significant base rates of PCS present in psychiatric samples, and are there important differences between psychiatric disorders?**

METHODS

PARTICIPANTS

- Archival dataset from a private practice in Ontario, Canada
- $n = 140$; Mean age = 40.6

PROCEDURE

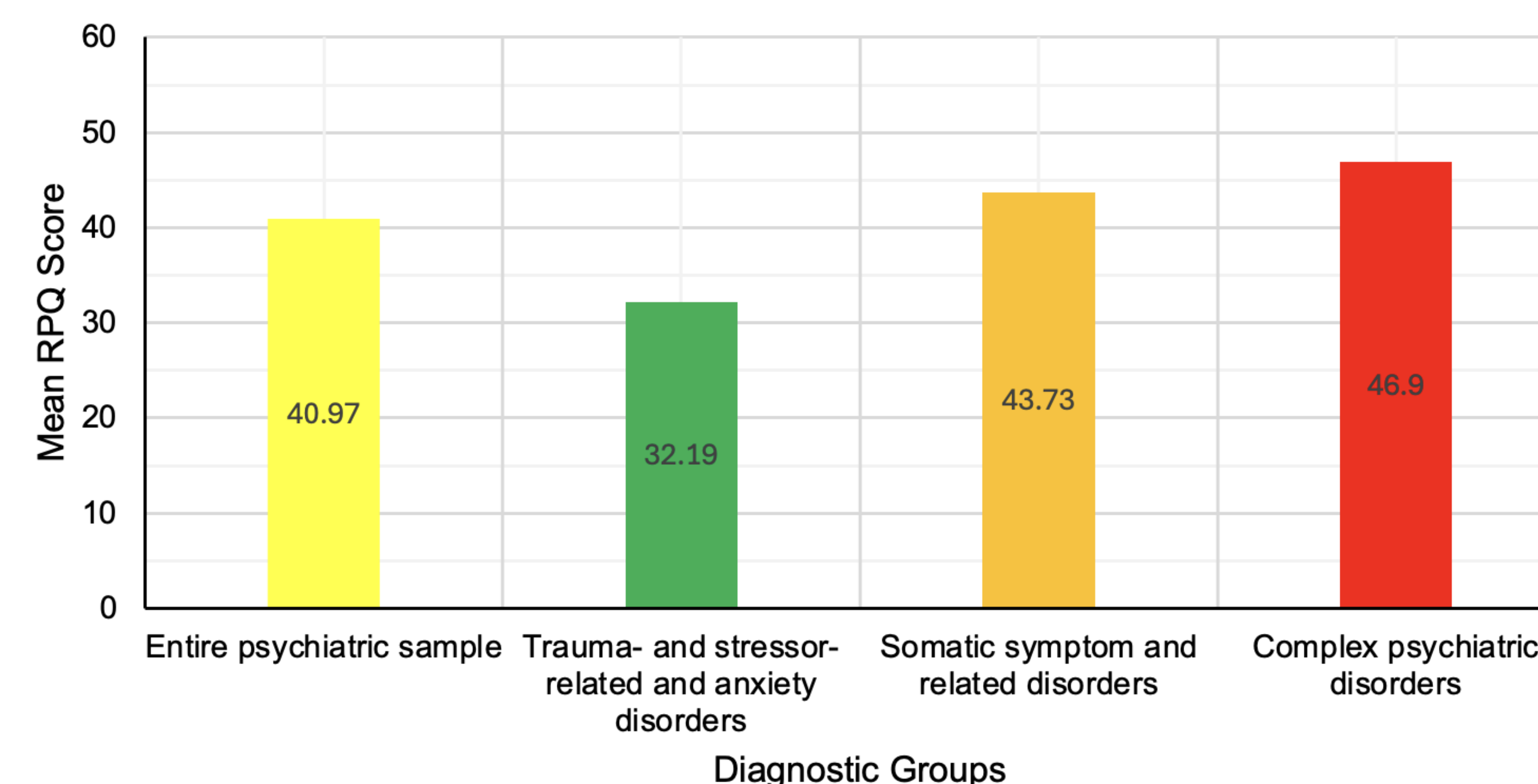
- Completion of a battery of psychological assessments (*Rivermead Post-Concussion Symptoms Questionnaire*, *Pain Catastrophizing Scale*, *Posttraumatic Stress Disorder Checklist for DSM-5*, *Survey of Pain Attitudes*, *Depression Anxiety Stress Scale*, and the *Pain Patient Profile*)
- All diagnoses were made by a registered psychologist (J.F.) based on extensive file review, psychometric testing, clinical interview, and case-conceptualization
- Diagnostic groups investigated in this study include trauma- and stressor-related disorders, anxiety disorders, somatic symptom and related disorders, and complex psychiatric disorders (3+ psychiatric diagnoses)

MEASURE OF INTEREST

- *Rivermead Post-Concussion Symptoms Questionnaire* (RPQ)
- Self-report measure of PCS consisting of 16 items measuring severity of symptoms following a mTBI.
- Total score ranges from 0 to 64, with a higher score indicating greater symptom severity
- Three-factor structure underlying post-concussion symptoms: cognitive, emotional, and somatic (Potter et al., 2006)

PRELIMINARY RESULTS

Mean RPQ Total Score by Diagnostic Group



- Mean total score for entire psychiatric sample = 40.97 ($SD = 13.4$) demonstrating significant base rates of PCS symptoms
- Certain psychiatric disorders are associated with greater PCS symptom severity

DISCUSSION

- Prominent clinical risks of a false positive PCS diagnosis include iatrogenesis, challenges with treatment effectiveness due to expectation as etiology, good old days bias, and the prevalence of nocebo effects
- Further investigation is warranted to better understand the role of moderators (e.g., age, sex, education level) on PCS symptom endorsement
- Next steps: role of moderators, comparisons to TBI sample, between group differences in specific symptom endorsements

REFERENCES

- Bigler, E. D. (2008). Neuropsychology and clinical neuroscience of persistent post-concussive syndrome. *Journal of the International Neuropsychological Society*, 14(1), 1–22. <https://doi.org/10.1017/s135561770808017x>
- Donnell, A. J., Kim, M. S., Silva, M. A., & Vanderploeg, R. D. (2012). Incidence of postconcussion symptoms in psychiatric diagnostic groups, mild traumatic brain injury, and comorbid conditions. *The Clinical Neuropsychologist*, 26(7), 1092–1101. <https://doi.org/10.1080/13854046.2012.713984>
- Iverson, G. L., & McCracken, L. M. (1997). Postconcussive symptoms in persons with chronic pain. *Brain Injury*, 11(11), 783–790. <https://doi.org/10.1080/026990597122990>
- Ponsford, J., Cameron, P., Fitzgerald, M., Grant, M., Mikocka-Walus, A., & Schönberger, M. (2012). Predictors of postconcussive symptoms 3 months after mild traumatic brain injury. *Neuropsychology*, 26(3), 304–313. <https://doi.org/10.1037/a0027888>
- Potter, S., Leigh, E., Wade, D., & Fleminger, S. (2006). The Rivermead Post Concussion Symptoms Questionnaire: a confirmatory factor analysis. *Journal of Neurology*, 253(12), 1603–1614. <https://doi.org/10.1007/s00415-006-0275-z>
- Zakzanis, K. K., & Yeung, E. (2011). Base rates of post-concussive symptoms in a nonconcussed multicultural sample. *Archives of Clinical Neuropsychology*, 26(5), 461–465. <https://doi.org/10.1093/arclin/acr021>