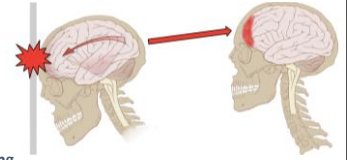


Somatic symptoms historically termed “post-concussive” are common in the weeks after sexual assault but unrelated to head injury

Byron Maltez, Jenyth Sullivan, April Soward, Teresa D’Anza, Kathy Bell, Lynn Galloway, Megan Lechner, Aryn Gieger-Sedgwick, Jennie Buchanan, Jeffrey Ho, Catherine Rossi, Kim Hurst, Ralph Rivello, Amanda Corzine, Theresa Moriarty, Samuel A. McLean

Somatic symptoms frequently occur after traumatic stress exposure

- Headache
- Light Sensitivity
- Dizziness
- Nausea
- Difficulty concentrating
- Blurred vision
- Restlessness
- Insomnia/difficulty sleeping
- Fatigue



Somatic symptoms occurring after trauma have historically been termed “post-concussive”

- Term derives from belief that such symptoms caused solely by brain injury (trauma, anoxia)
- “Post-concussive” symptoms common in trauma survivors, may persist for years, and cause substantial morbidity/disability

?

- Headache
- Light Sensitivity
- Dizziness
- Nausea
- Difficulty concentrating
- Blurred vision
- Restlessness
- Insomnia/difficulty sleeping
- Fatigue

CLINICAL PRACTICE
**Landstuhl Regional Medical Center:
 Traumatic Brain Injury Screening
 Program**

Dempsey, Kenneth E, RN, RRT; Dorlac, Warren C, MD, FACS; Martin, Kathleen, MSN, RN; Fang, Raymond, M...
Journal of Trauma Nursing; Jan-Mar 2009; 16, 1; ProQuest Central

Wide range of trauma exposure + “Feeling disconnected from the environment” immediately afterward + “post-concussive” symptoms = Diagnosis of minor traumatic brain injury
 ? Head injury

Somatic Symptoms

- Increasing evidence suggests that such symptoms may also be caused by stress exposures that do not involve brain trauma

-e.g., McLean et al 2009, Auvergne et al 2016, Carroll et al 2004

Health status, not head injury, predicts concussion symptoms after minor injury²

Samuel A. McLean MD, MPH^{1,*}, Ned L. Kirsh PhD², Cheribeth U. Tan-Schriener PhD³, Ananda Sen PhD⁴, Shirley Frederickson RN, MS⁵, Richard E. Harris PhD⁶, William Maloney DDS, PhD⁷, Ronald F. Haio DO, MS^{8,†}

Association of Epidemiologic Factors and Genetic Variants Influencing Hypothalamic-Pituitary-Adrenocortical Axis Function With Postconcussive Symptoms After Minor Motor Vehicle Collision

Laurence Anagnostou MD, Andrew V. Barbeau MD, PhD, David C. Ehrlich, BS, David A. Poth, MD, John S. Koenig, MD, Robert A. Nease, PhD, Robert H. Drexler, MD, David C. Lee, MD, Nathi K. Kulkarni, MD, Phyllis L. Flansburg, MD, and Samuel A. McLean, MD, MPH

Somatic Symptoms

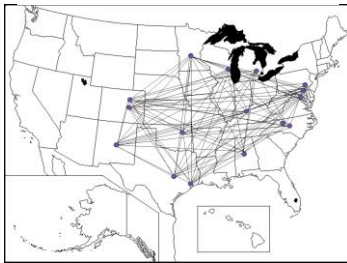
- Increasing evidence suggests that such symptoms may also be caused by stress exposures that do not involve brain trauma
-e.g., McLean et al 2009, Auvergne et al 2016, Carroll et al 2004
- Evaluating somatic symptoms in patient population that experiences stress exposure, but in which head injury is uncommon, provides opportunity to evaluate this hypothesis



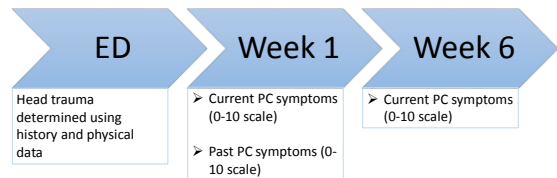
Study Aims

- Data for this analysis were drawn from the Women's Health Study, the first large-scale, multi-site, prospective study of adult women sexual assault survivors
- In this prospective observational study, we evaluated the incidence of somatic symptoms traditionally termed "post-concussive" after sexual assault

better tomorrow network



Methodology



Selected Characteristics of Subsample (N=205)

Age, mean (SD)	28 (10)
Ethnicity, n (%)	
African American	39 (19)
European American	117 (57)
Multi-ethnic/other	49 (24)
Hispanic or Latino, n (%)	52 (25)

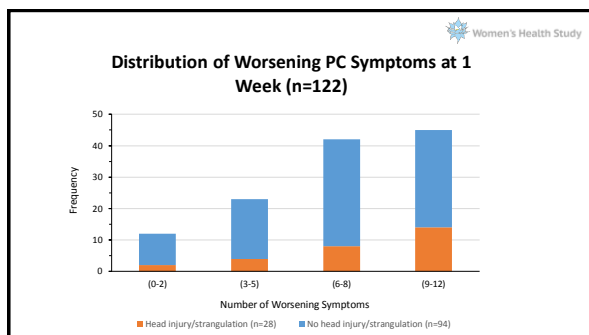
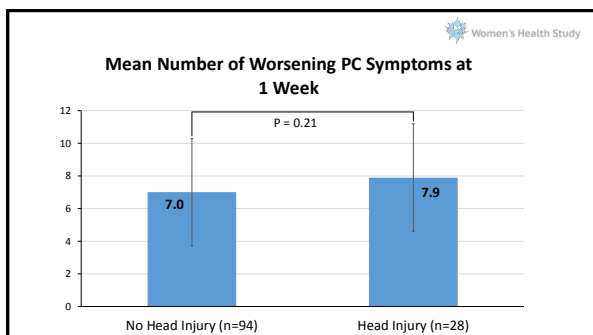
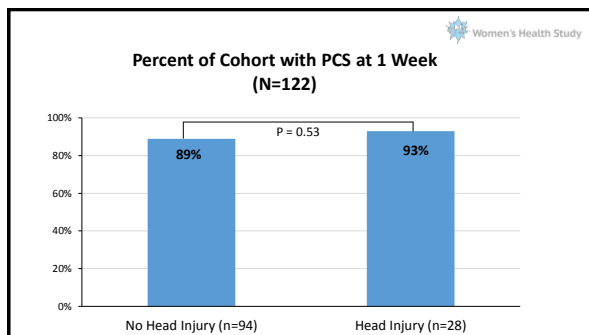
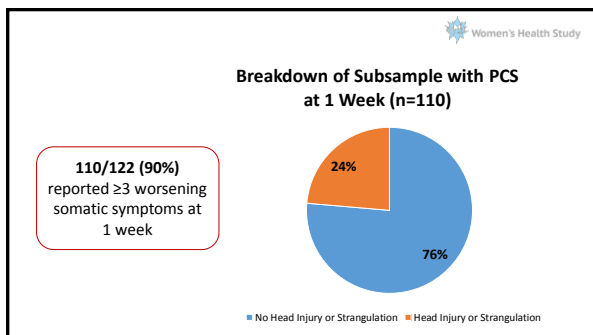
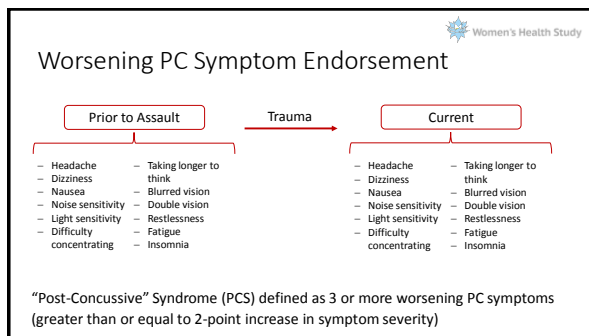
Assault Characteristics of Subsample (N=205)

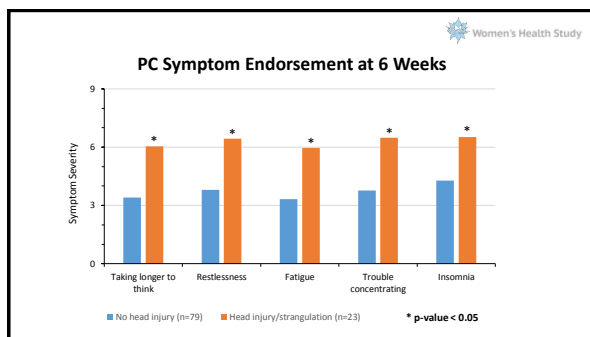
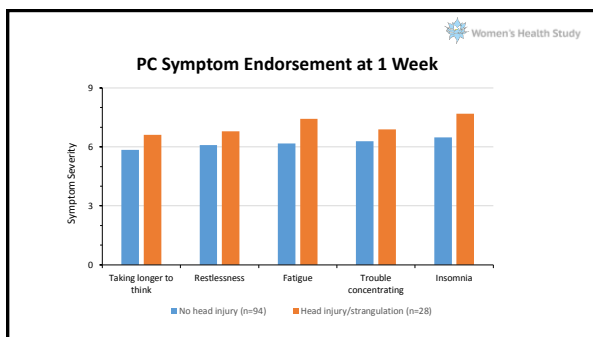
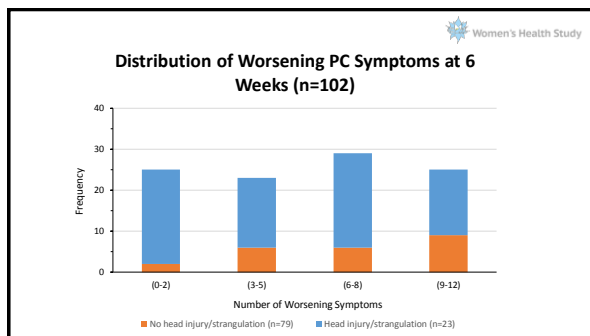
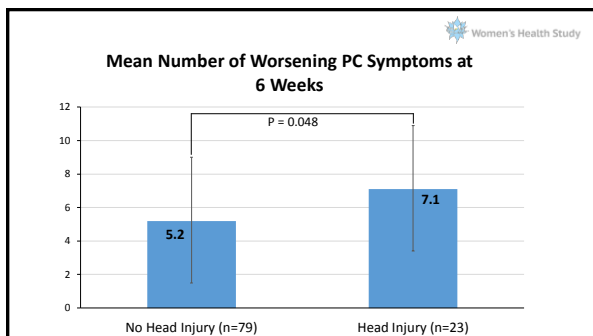
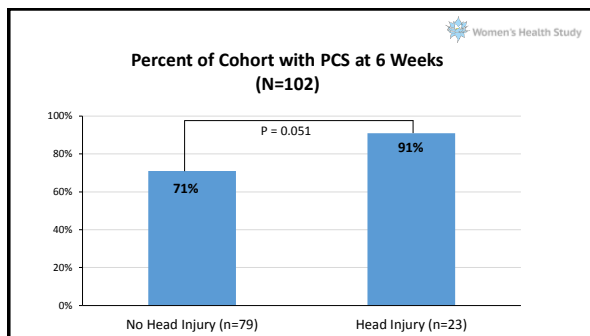
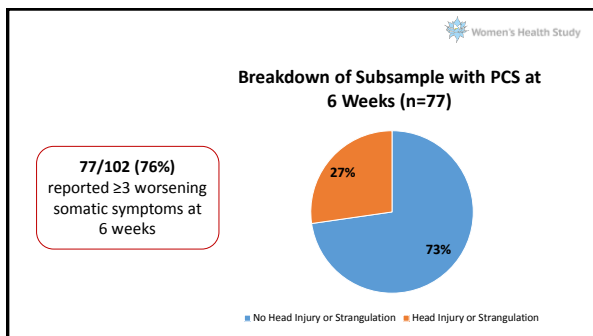
	n (%)
Physical Assault	66 (32)
Multiple Assaultants	18 (9)
Drug-Facilitated Sexual Assault	68 (33)
Assailant Relationship	
Known	132 (64)
Unknown	52 (25)
Relative	2 (1)
Penetration of	
Vagina	141 (70)
Anus	32 (16)
Mouth	46 (22)
Multiple forms of Assault	88 (43)

Women's Health Study

Assault Characteristics of Subsample (N=205)	n (%)
Conscious throughout entire assault, n (%)	122 (60)
No reported head injury or strangulation	94 (77)
Reported head injury (no LOC)	17 (14)
Reported strangulation (no LOC)	11 (9)

Only those participants who were conscious throughout entire assault (to provide complete history of head trauma) were included in analysis





Conclusions



- "Post-concussive" syndrome common in sexual assault survivors (90% at 1 Week, 76% at 6 Weeks)
- Majority of patients meeting "post-concussive" syndrome criteria had no reported head injury (76% at 1 Week, 73% at 6 Weeks)
- Same "post-concussive" symptoms were commonly endorsed in those with and without head injury

Limitations



- 40% of recruited participants were excluded due to loss of consciousness during assault
- Rivermead Post-Concussion Symptoms Questionnaire is self-report, and established baseline is retrospectively determined

Future Directions



- Perform additional analyses with full cohort at conclusion of study
- Assess outcomes at 6 months and 1 year post-assault

Final Takeaways



- Provides further evidence that head trauma is not necessary for the onset of "post concussive" symptoms
- Use of these symptoms to denote minor traumatic brain injury is problematic

Acknowledgements



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Questions?