A Pilot Study of Executive Functions in PTSD

Jared F. Bengeab, Robert Collinsea, Thomas Kentab

a Michael E. DeBakey VAMC, b Baylor College of Medicine

Introduction

Studies of neuropsychology in Post-Traumatic Stress Disorder (PTSD) samples have focused on characterizing the cognitive deficits seen in patient populations. Overall intellectual functioning has been reported to be protective for the development of PTSD (Vasterling et al 1997). A myriad of other abnormalities, including in memory, attention, and executive functioning spheres have been reported. (Vasterling et al 2005). While the neuropsychology of PTSD literature has blossomed over recent years, relatively little research has looked at how the different symptom clusters that define PTSD (reexperiencing, hyperarousal, and avoidance) might be differentially related to the cognitive deficits observed in the disorder. There is evidence that the fractionation of symptoms may have different cognitive underpinnings. For example, response inhibition may be associated with reexperiencing and negatively associated with avoidance symptoms (Vasterling, 1998). The purpose of the current study was to explore the relationship between core PTSD symptom clusters and executive and intellectual functioning.

Methods

Twenty-three mostly Vietnam war era veterans completed a PTSD symptom checklist (Weathers et al 1993) and selected executive function measures drawn from the Delis Kaplan Executive Function System (DKEFS; Delis et al, 2001) as a part of a broader emotional and neuropsychological evaluation. Patients were recruited from the Trauma Recovery Program at the MEDVAMC. Demographic information is presented in Table 1.

Results

Overall, executive functioning was within normal limits in this sample. PTSD severity was negatively correlated with set-shifting and conceptualization variables across all domains. Category fluency, but not letter fluency, seemed to be more uniquely associated with avoidance and hyperarousal symptoms. Estimated premorbid FSIQ, consistently viewed as a protective factor in PTSD studies was found again to be associated with fewer reexperiencing symptoms in a linear fashion, but a curvilinear relationship was found for hyperarousal and avoidance symptoms, suggesting a more complex relationship between these variables.

Conclusion

• Overall executive functioning was within normal limits in this sample. However, veterans with more PTSD symptoms tended to have more difficulty with speeded set-shifting and concept formation.
• Category fluency, a task thought to tap both frontal/executive and temporal semantic networks was found to be associated with hyperarousal and avoidance symptoms.

Acknowledgement

This research was supported by a Veteran’s Affairs Medical Center South Central Mental Illness and Research Clinical Care Student Trainee Grant to the first author.