Regional Cerebral Blood Flow in Self-Reported Post-Traumatic Stress Disorder in Adults

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Objective

The aim of this study is to identify regional cerebral blood flow (rCBF) differences between adults who self-reported high symptoms of Post-Traumatic Stress Disorder.

Method

- Subjects were selected from a de-identified database for adult SPECT scans. Scores were standardized to T-scores for each database.
- Twenty percent of the sample from each database were selected on the basis of self-reported levels of PTSD symptoms using the Amen Adult General Symptom Checklist (Amen, 1997).
- The final sample consisted of 350 Adults [Mage=36.70, majority-white (65.4%) and female (56.9%)].
- Significant differences existed between groups for age.
- A MANOVA was utilized to test the difference in concentration rCBF between adults controlling for age.

Results

- Groups were compared across 17 variables representing different areas of the brain.
- Significant differences ($p<.05$) in rCBF were found in high levels of self-reported PTSD. Specifically, significant differences were noted in the left and right limbic areas with adults reporting high levels of PTSD having increased rCBF in these regions.
- Differences were also significant in the left and right basal ganglia regions with those reporting higher levels of PTSD having increased rCBF.

Discussion

Results indicate that there are significant differences in rCBF between adults with high self-reported levels of symptoms of PTSD. This suggests that adults with PTSD experience increased rCBF in the limbic and basal ganglia which both play a role in memory, emotions, and anxiety. Clinicians can use this information in the future to identify individuals that are at a high-risk for developing PTSD.

References

Amen, D. (1997). Amen adult general symptom checklist - ancron medical centre. Retrieved June 14, 2022, from https://ancronmedical.com/wp-content/uploads/2015/04/Amen-Adult-General-Symptom-Checklist.pdf