



# Resting-state Functional Connectivity Analysis in North Korean Defectors with PTSD and Complex PTSD

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## BACKGROUND

- North Korean Defectors (NKDs) have been exposed to various traumatic events especially during their flights, increasing the risk of trauma-related disorders.
- Recently, ICD-11 suggested two distinguished traumatic stress disorders such as PTSD and complex PTSD (CPTSD).
- However, little has been studied regarding the changes in brain functional connectivity (FC) according to PTSD and CPTSD diagnostic criteria.

## OBJECTIVE

- Characteristics of the brain FC network of the NKDs diagnosed with non-symptom, PTSD, and CPTSD were evaluated.

## METHODS

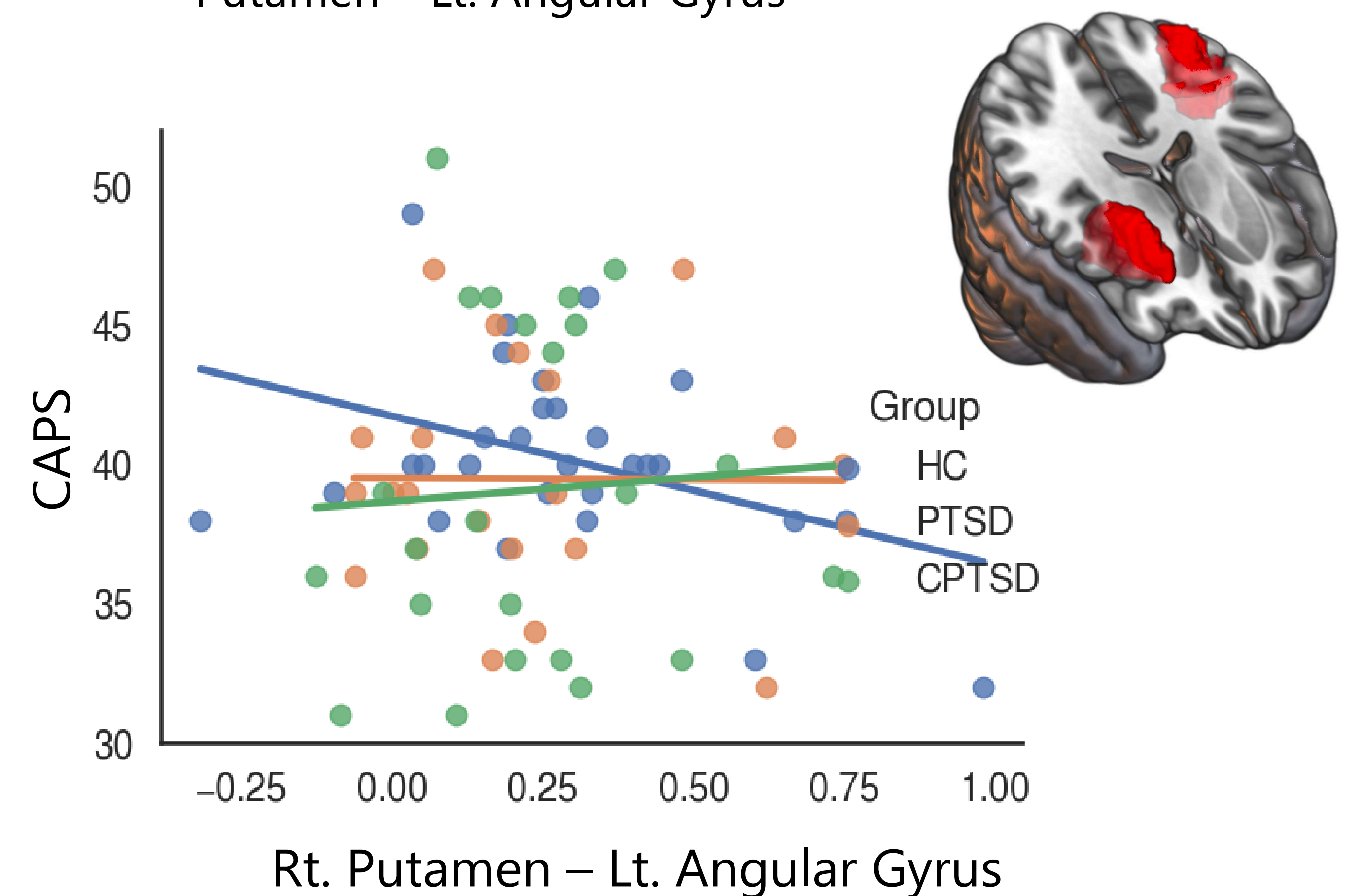
- A total of 73 NKDs (29 non-symptom, 21 PTSD, and 23 CPTSD) were surveyed using Coping and Adaptation Processing Scale (CAPS) and Posttraumatic Growth Inventory (PTGI), and the resting-state fMRI acquisition was obtained.
- Group difference analysis of ROI-to-ROI FC with the automated anatomical labeling atlas was performed with the CONN toolbox with FDR cluster-level correction.
- Post-hoc Tukey and correlation tests were performed between the significant FC strength and the scale scores.

## RESULTS

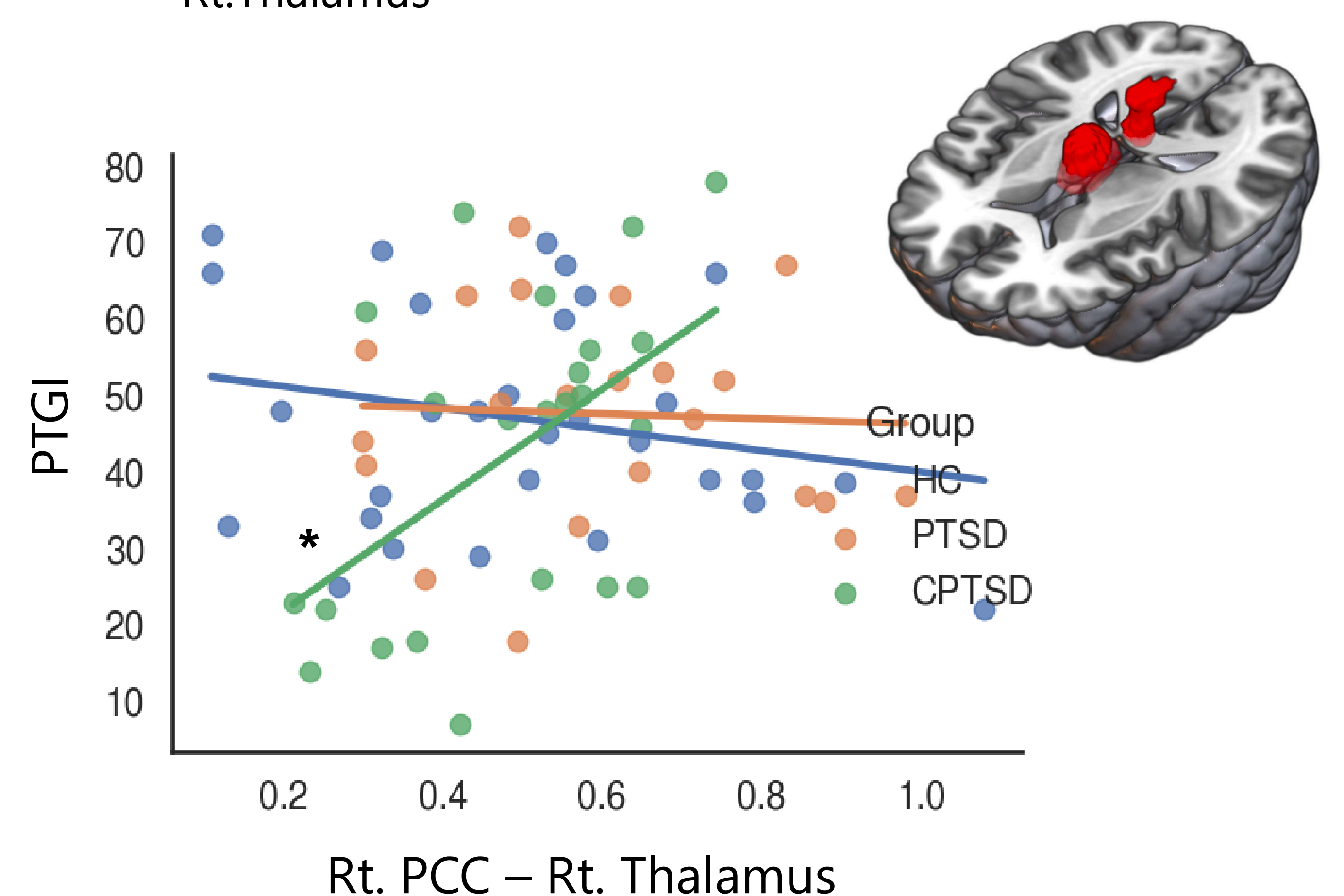
**Table 1. Functional Connectivity Analysis**  
- ANOVA (Non-symptom<sup>a</sup> / PTSD<sup>b</sup> / CPTSD<sup>c</sup>)

Functional Connectivity	F	p	Post-hoc tukey test
Lt. PCC – Lt. Middle Cingulate Cortex	9.45	<0.001	
Rt. PCC – Lt. Middle Cingulate Cortex	7.96	0.001	c < b
Rt. PCC – Rt. Middle Cingulate Cortex	7.58	0.001	c < b
Rt. Putamen – Lt. Angular Gyrus	7.23	0.001	
Lt. PCC – Rt. Putamen	5.29	0.007	c < a
Lt. PCC – Rt. Middle Cingulate Cortex	4.91	0.010	
Rt. PCC – Rt. Thalamus	3.88	0.025	
Rt. PCC – Lt. Thalamus	4.33	0.017	
Lt. PCC – Rt. Pallidum	3.17	0.048	

**Figure 1.** Post-hoc Correlation analysis between CAPS and Rt. Putamen – Lt. Angular Gyrus



**Figure 2.** Post-hoc Correlation analysis between PTGI and Rt. PCC – Rt. Thalamus



## CONCLUSIONS

These findings provide initial evidence of altered FC grounded on the PCC, underlying the neuropathological mechanisms of CPTSD distinct from PTSD.

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