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BACKGROUND

- Financial exploitation (FE) vulnerability in older adults is a growing public health concern, yet its neurobiological underpinnings remain poorly understood.
- Although psychosocial and cognitive factors confer risk, emerging evidence suggests that structural brain changes in regions vulnerable to early Alzheimer's disease pathology may contribute to FE vulnerability before overt cognitive impairment.

OBJECTIVE

- To examine whether whole-brain voxelwise gray matter volume relates to FE vulnerability and whether associations vary as a function of age.

METHODS

Sample

- 128 cognitively unimpaired older adults (68.38±7.51 years; MMSE = 28.63 ± 1.19; race = 68% White, 20% Asian, 6% Black or African American, 2% Other) with no history of major neurological or psychiatric disorders.
- Participants were stratified into younger (<70 years; n=67) and older (≥70 years; n=61) groups based on a median age split.

Measures

- Financial Exploitation Vulnerability:** Participants completed the Perceived Financial Vulnerability Scale (PFVS; Lichtenberg et al., 2020), a 6-item self-report measure of FE risk. Items were rated on a 3-point scale, yielding total scores from 6 to 18. Higher scores indicated greater perceived FE vulnerability.

Neuroimaging Analysis

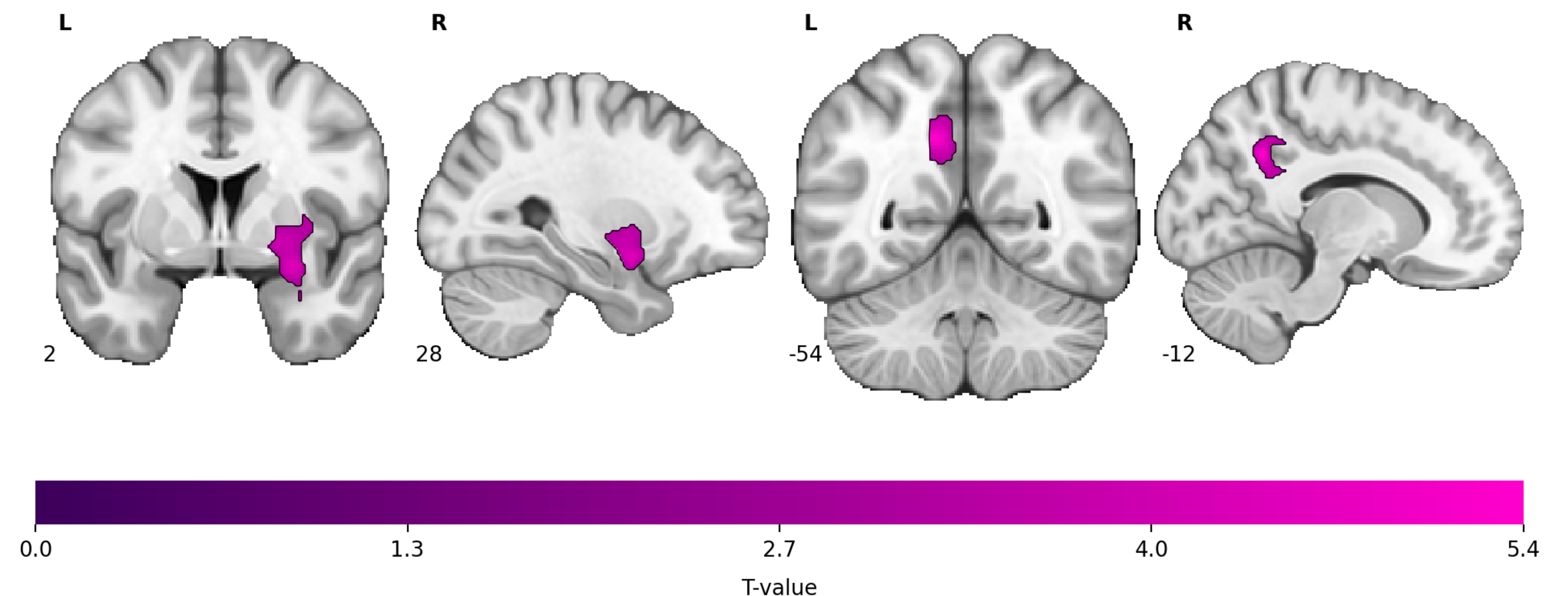
- Structural brain MRI scans were acquired using a 7-Tesla Siemens Magnetom scanner.
- Whole-brain voxel-based morphometry analyses were conducted separately within each age group to identify regions in which gray matter volume was associated with FE vulnerability, controlling for age, sex, and years of education.

ACKNOWLEDGEMENTS

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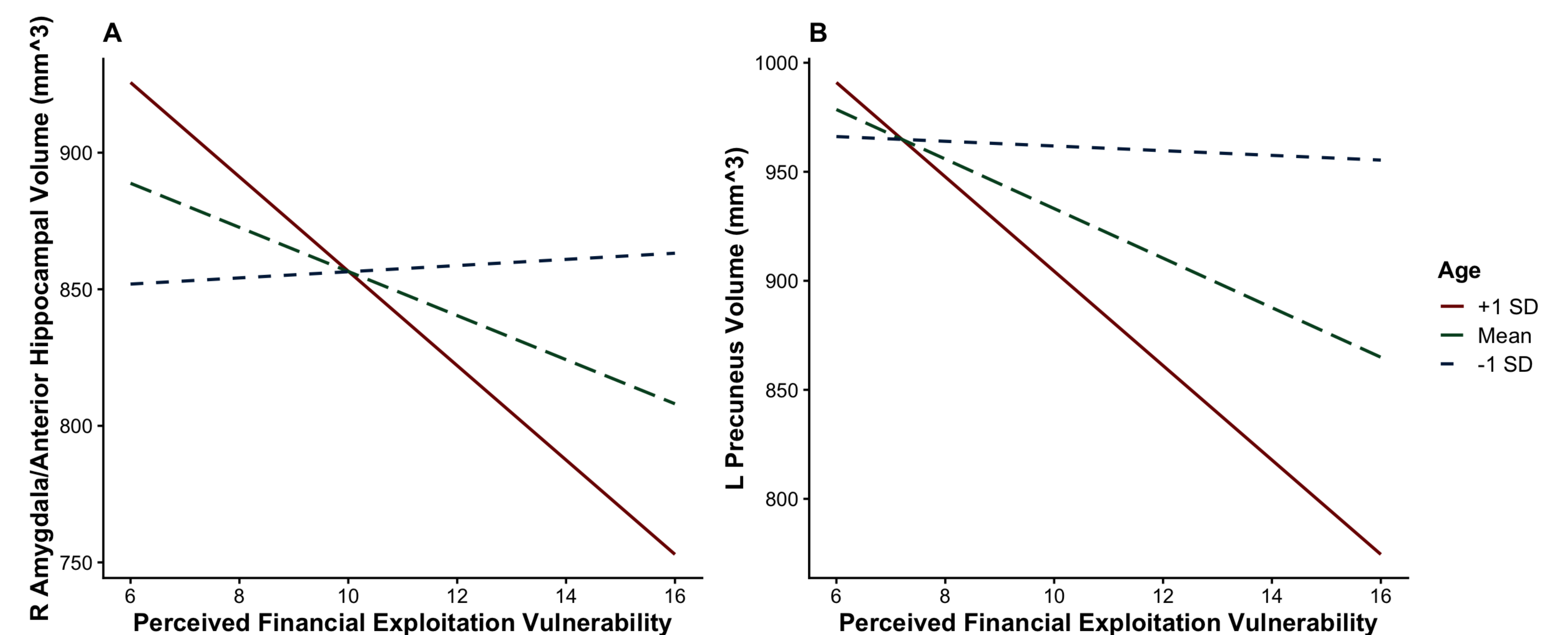
RESULTS

Figure 1. Gray matter volume maps for the older group only. Lower gray matter volume in the R amygdala/anterior hippocampus and the L precuneus was associated with greater perceived FE vulnerability.



Note. Color bar represents T-values, and results are shown at $p_{FWE} < .05$. R amygdala/anterior hippocampus cluster volume = 801; max $t = 4.55$, $p_{FWE} = .029$. L precuneus cluster volume = 751; max $t = 5.40$; $p_{FWE} = .031$.

Figure 2. Interaction between age and FE vulnerability, such that higher FE vulnerability was associated with lower gray matter volume more strongly in older than younger participants.



Note. Lines represent predicted gray matter volume at +1 SD, mean, and -1 SD of age, adjusting for sex, years of education, and MMSE scores.

DISCUSSION

- FE vulnerability may be related to structural variation within medial temporal-limbic and default mode network regions, even in the absence of overt cognitive impairment.
- The age-specific pattern suggests that FE vulnerability in later life may serve as an early behavioral marker of emerging neurobiological risk.