

Saturday

Higher prevalence of STEM occupations in frontotemporal dementia compared to Alzheimer's disease and the US general population.

Zachary Miller, Kyra Neylan, Ryan Diggs, Isabel Allen, Rian Bogley, Emily Eijansantos, Eleanor Palser, Jet Vonk, Maxime Montembeault, David Perry, Virginia Sturm, Jesse Brown, Salvatore Spina, Gil Rabinovici, Joel Kramer, Hilary Heuer, Adam Boxer, Howie Rosen, Kate Rankin, Lea Grinberg, Bill Seeley, Maria Luisa Gorno Tempini, Bruce Miller

STATE OF THE ART: Demographic risk factors specific to frontotemporal dementia (FTD) are conspicuously absent. **METHODOLOGY:** We screened occupation histories (employing US Bureau of Labor Statistics classifications) in 638 UCSF FTD participants evaluated between 1998-2019 (behavioral variant FTD, semantic and nonfluent variant primary progressive aphasia) and 600 Alzheimer's disease (AD) participants matched for age at symptom onset. **RESULTS:** FTD participants possessed more years of education (15.7 ± 2.9 vs. 15.3 ± 3.5 , $p=0.03$) and a greater proportion of male sex (50.2% vs. 43.7%, $p=0.02$) than AD. Adjusted for these differences, FTD occupation history revealed relatively more "Architecture & engineering," "Computer & mathematical," and "Life, physical, & social sciences," occupations, which constitute the STEM (Science, Technology, Engineering, and Mathematics) professions, and less "Arts, design, entertainment, sports, & media," "Personal care & services," "Production," "Other," and "Education" (APPOE) professions. STEM occupations predicted FTD over AD (OR, 2.3; 95% CI, 1.7 to 3.2), APPOE occupations predicted AD over FTD (OR, 2.2; 95% CI, 1.6 to 3.1). STEM professions were observed at higher rates in FTD compared to the US general population (20.7% vs. 6.2%, $p<0.001$). **CONCLUSIONS:** We identified divergent patterns of occupation history between FTD and AD along with an overrepresentation of STEM professionals in FTD compared to the US general population. The higher prevalence of STEM occupations in FTD may represent the first identified FTD-specific demographic risk factor. It remains unclear if occupation history embodies a developmental predisposition that influences neurodegenerative disease susceptibility or reflects a novel actionable lifestyle risk/protective factor towards the development of dementia.

Conflicts of interest

I have no formal disclosures.