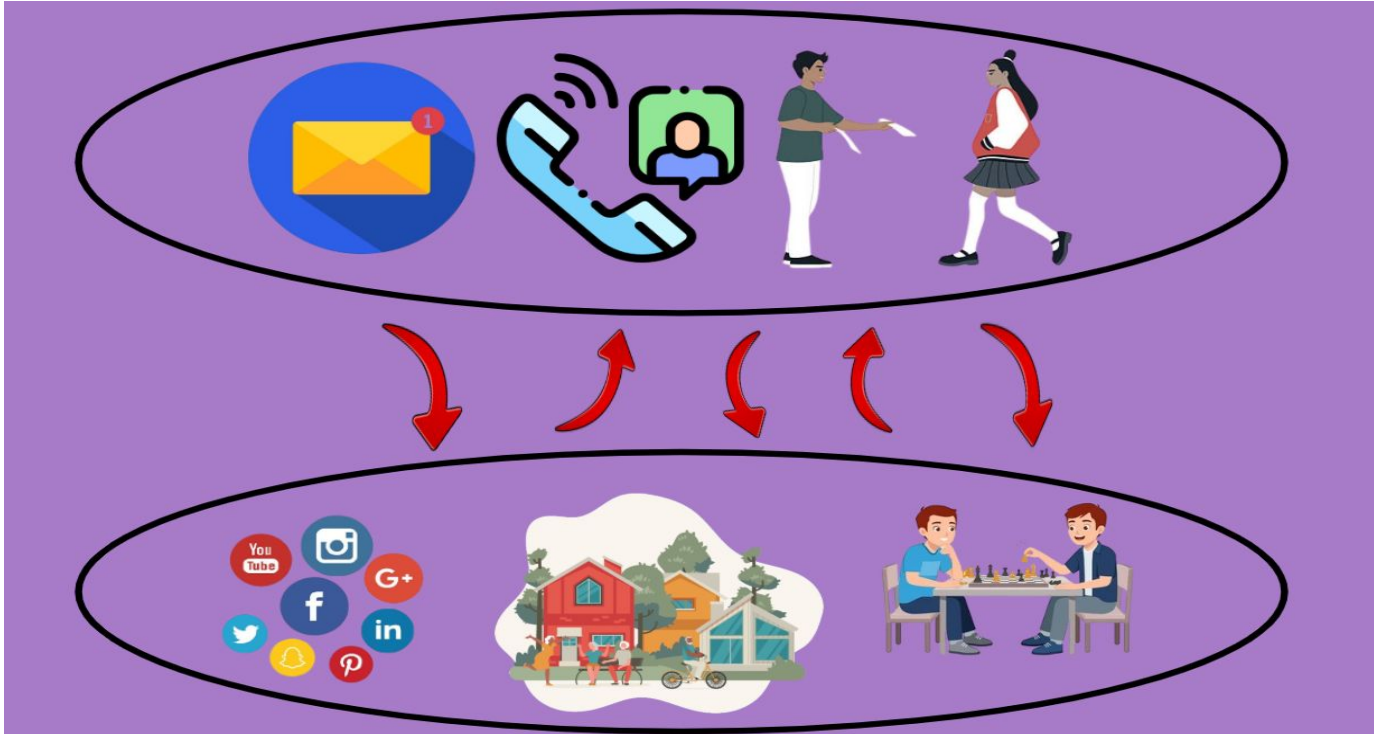
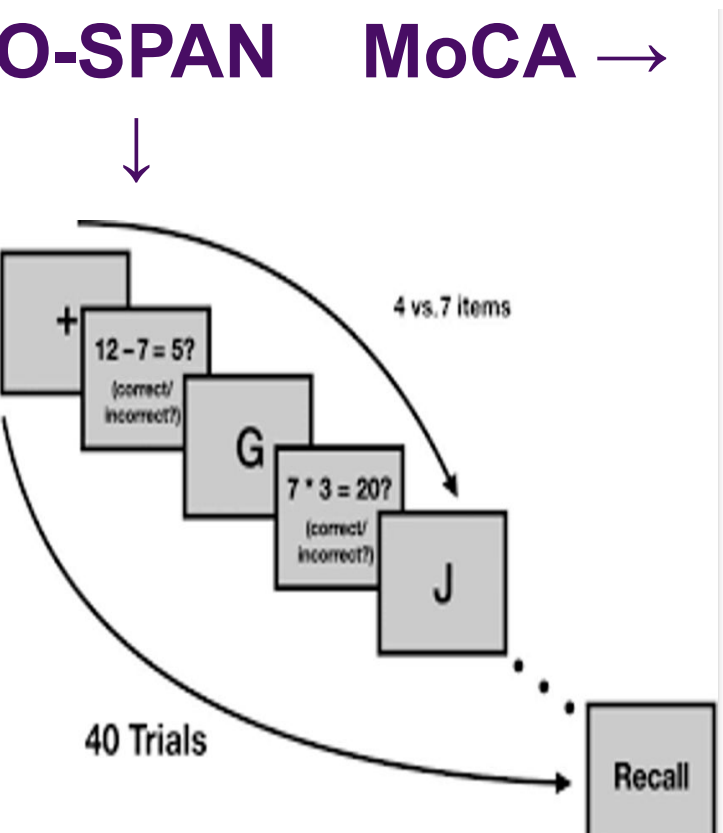
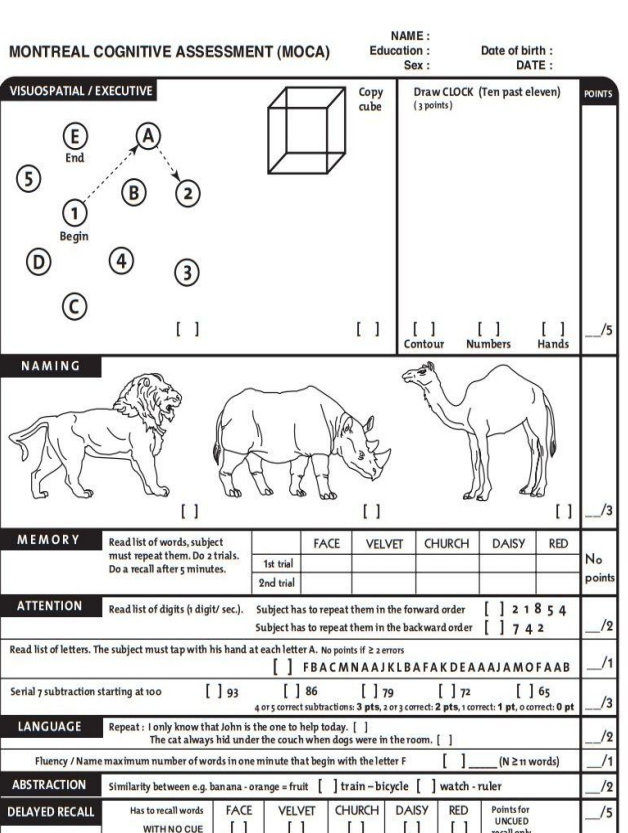
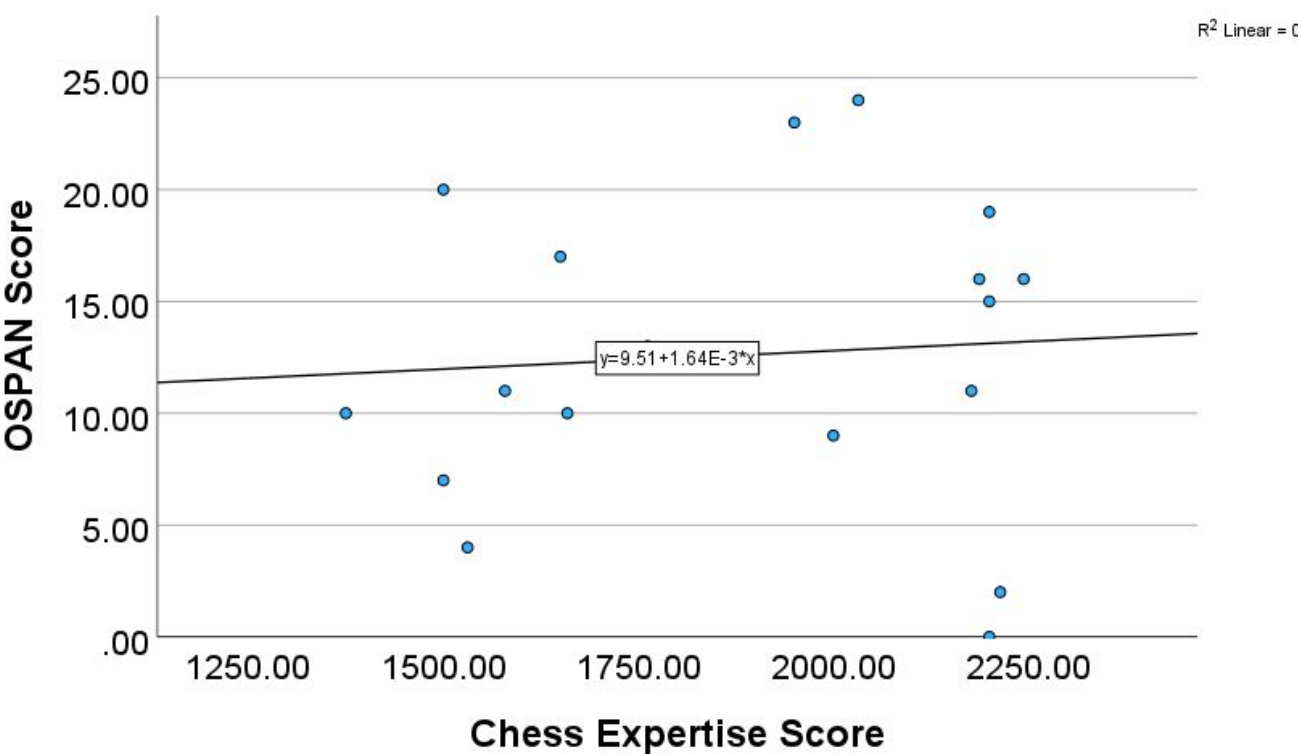
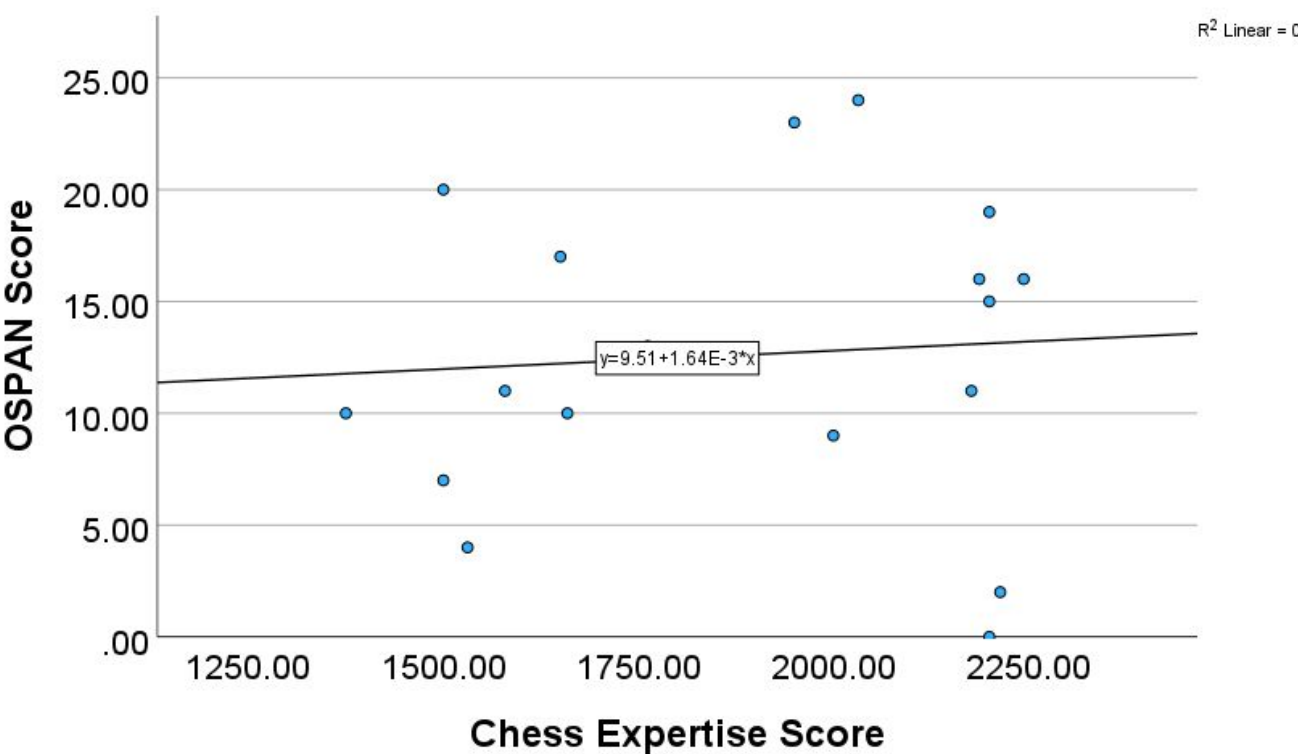


Examining the Effects of Chess Participation on Cognitive Functioning

#3387

Aman Sreshta, Caton Tsao, Dr. Kaileigh Angela Byrne

Chess is positively correlated with working memory capacity and trends towards statistical significance, so further research with a larger, more representative sample could help establish statistical significance. However, this study shows strong preliminary findings.

INTRODUCTION	METHODS	RESULTS	CONCLUSIONS	REFERENCES																					
Alzheimer’s disease is a neurodegenerative disorder that affects approximately 7.4 million Americans as of 2026 (PubMed Central). While neurodegenerative risks increase with age, engaging in mentally stimulating activities can reduce the risk of cognitive decline by up to 11% by supporting cognitive reserve (Wu, 2023). Chess engages working memory, attention, executive functioning, and visuospatial processing, yet few studies have examined its relationship with cognitive performance in older adults.	Participant Eligibility  Recruitment  Procedures: - Informed Consent - Qualtric Survey - Questionnaire - Cognitive Tests - Data Analysis O-SPAN  MoCA 	Participants included 32 older adults (Mean age = 72.91, SD = 7.97; 19 chess players, 13 non-players). Correlations <table><tr><th>Chess Score</th><th>OSPAN Total</th><th>OSPAN Absolute</th><th>MOCA</th><th>Typing</th><th>Years Education</th><th>Cognitive Engagement</th></tr><tr><td>Pearson Correlation</td><td>.260</td><td>.075</td><td>.168</td><td>.078</td><td>.030</td><td>-.325</td></tr><tr><td>Sig. (2-tailed)</td><td>.297</td><td>.768</td><td>.505</td><td>.758</td><td>.907</td><td>.183</td></tr></table> Figure 1: Correlational Data  Figure 2: Chess vs Non Chess for OSPAN  Figure 3: Chess Experience vs OSPAN Score 	Chess Score	OSPAN Total	OSPAN Absolute	MOCA	Typing	Years Education	Cognitive Engagement	Pearson Correlation	.260	.075	.168	.078	.030	-.325	Sig. (2-tailed)	.297	.768	.505	.758	.907	.183	Limitations - Chess group was exclusively male and significantly more educated than the non chess group (M = 17.79 vs 15.54 years, p = .007). They also reported higher baseline social and cognitive engagement (p = .069), presenting a potential confounding variable. Discussion - Chess players showed marginally higher working memory capacity than non chess players (p=0.56). A positive trend occurred among expertise: higher chess rating correlated with higher working memory (r = .67, p = 0.7). Future research should use larger and more representative samples.	2026 Alzheimer’s disease facts and figures. (2026b). <i>Alzheimer’s & Dementia</i>, 22(4). Fattahi, F., Geshani, A., Jafari, Z., Mahini, M. S., & Jalaie, S. (2015). Auditory memory function in expert chess players. <i>Medical Journal of the Islamic Republic of Iran</i>, 29, 275. Wu, Zimu, et al. (2023). “Lifestyle Enrichment in Later Life and Its Association With Dementia Risk.” <i>JAMA Network</i>, 6(7). CONTACT  decisionlab@clemson.edu sreshta@clemson.edu cspringsao@gmail.com  AAIC 26
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