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Objective: Previous research evidences men, on average, perform better than women on nonverbal tasks. Conversely, literature evidences women, on average, perform better on memory tasks. Proposed explanations for this discrepancy include, increased parietal lobe volume to hormonal differences. Some research also suggests men have greater working memory (WM) abilities than women on tasks involving holding visual information. As such, it is possible more robust WM performance in men may translate to better performance on nonverbal tasks with an immediate and delayed visual memory component. The current study examined if WM performance moderates the relationship between sex and nonverbal learning and memory in a community clinic population of older adults referred for cognitive concerns.

Participants and Methods: Data was drawn from archival medical records of patients who underwent neuropsychological assessment in an outpatient, community clinic after being referred for cognitive concerns in the context of a variety of neurodegenerative and neurological conditions. Records of patients between the ages of 65 and 91 who completed the Brief Visuospatial Memory Test (BVMT-R) and WAIS-IV Digit Span (DS) were selected from the broader clinic sample of patients seen between 2019 and 2022. The total sample consisted of 302 older adults with a mean age of 75.11 (SD=6.06) and an average of 15.54 years of education (SD=2.51); 145 (48%) were women. Hierarchical regression analyses were used to examine the effects of sex, WM, and the interaction between sex and WM on BVMT learning and memory scores, while controlling for age and education. An independent samples t-test was also computed to examine sex differences on DS working memory scores.

Results: The optimal linear combination of sex, WM, and the interaction between sex and WM accounted for 24.7% of the variance in BVMT total learning scores ($F_{(5, 296)}=20.79$, $p>0.05$). There were no significant main effects of sex or the interaction between sex and WM on nonverbal learning or nonverbal memory ($p>0.05$). However, a strong trend was observed for the effect of sex on nonverbal memory (B=-0.69, $t_{(5)}=-1.91$, $p=0.057$). A main effect of WM on nonverbal learning (B=0.42, 95% CI [0.25,

0.59], $p<0.05$) and memory (B=0.21, 95% CI [0.12, 0.29], $p<0.05$) was observed. Sex differences on WM measures were not observed ($p>0.05$).

Conclusions: Significant main effects of sex on nonverbal learning and memory were not found, though strong trends were observed between sex and nonverbal memory performance. While the relationships between WM and nonverbal learning and memory were trending toward significance, the predicted sex differences on WM performance were not found. The trend toward significance observed between sex and nonverbal memory may be the "carryover" effect from ancillary spatial skills that prior research has shown to be more robust amongst men, including mental rotation and visual construction. Findings from the current study align with the BVMT-R technical manual, which reported no significant contribution from sex in any learning or recall scores within their normative sample.

Categories: Memory Functions/Amnesia
Keyword 1: working memory
Keyword 2: learning
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15 The Role of Race and Adverse Childhood Experiences on Predicting Cognitive Ability on the Montreal Cognitive Assessment (MoCA).

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Objective: Awareness of risk factors associated with any form of impairment is critical for formulating optimal prevention and treatment planning. Millions worldwide suffer from some form of cognitive impairment, with the highest rates amongst Black and Hispanic populations. The latter have also been found to achieve lower scores on standardized neurocognitive testing than other racial/ethnic groups. Understanding the socio-demographic risk factors that lead to this discrepancy in neurocognitive functioning across racial groups is crucial. Adverse

childhood experiences (ACEs), are one aspect of social determinants of health. ACES have been linked to a greater risk of future memory impairment, such as dementia. Moreover, higher instances of ACEs have been found amongst racial minorities. Considering the current literature, the purpose of this exploratory research is to better understand how social determinants, more specifically, ACEs, may play a role in the development of cognitive impairment.

Participants and Methods: This cross-sectional study included data from an urban, public Midwestern academic medical center. There was a total of 64 adult clinical patients that were referred for a neuropsychological evaluation. All patients were administered a standardized neurocognitive battery that included the Montreal Cognitive Assessment (MoCA) as well as a 10-item ACE questionnaire, which measures levels of adverse childhood experiences. The sample was 73% Black and 27% White. The average age was 66 (SD=8.6) and average education was 12.6 years (SD=3.4). A two-way ANOVA was conducted to evaluate the interaction of racial identity (White; Black) and ACE score on MoCA total score. An ACE score ≥4 was categorized as "high"; ACE <4 was categorized as "low."

Results: There was not a significant interaction of race and ACE group on MoCA score (p=.929) nor a significant main effect of ACE score (p=.541). Interestingly, there was a significant main effect of Race on MoCA (p=.029). White patients had an average MoCA score of 21.82 (sd=4.77). Black patients had an average MoCA score of 17.54 (sd=5.91).

Conclusions: Overall, Black patients demonstrated statistically lower scores on the MoCA than White patients. There was no significant difference on MoCA score between races when also accounting for ACE scores. Given this study's findings, one's level of adverse childhood experiences does not appear to impact one's cognitive ability later in life. There is a significant difference in cognitive ability between races, specifically Black and White people, which suggests there may be social determinants other than childhood experiences to be explored that influence cognitive impairment.

Categories: Memory Functions/Amnesia
Keyword 1: cognitive functioning
Keyword 2: childhood maltreatment

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16 Relative Contributions of Motor and Non-Motor Symptoms to Caregiver Burden in Parkinson's Disease Patients Being Evaluated for Deep Brain Stimulation

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Objective: Parkinson's disease (PD) is a neurodegenerative disorder affecting over 10 million people worldwide. PD is characterized by both motor (e.g., tremor, rigidity, and bradykinesia) and non-motor (including cognitive impairment and neuropsychiatric symptoms such as apathy, disinhibition, executive dysfunction) symptoms. Caregiver burden is prevalent in those providing care for patients with PD and can result in negative health complications. Past work shows associations between motor symptoms, cognitive impairment, neuropsychiatric symptoms, and caregiver burden in PD. However, their relative contributions are poorly understood. This study examined these relationships, hypothesizing that while motor symptoms, cognitive impairment, and neuropsychiatric symptoms would all affect caregiver burden, neuropsychiatric symptoms would predict burden above and beyond the contribution of the other factors

Participants and Methods: Participants were 42 people living with PD who were assessed at a hospital-based tertiary movement disorders specialty clinic for deep brain stimulation (DBS) candidacy evaluation with their caregiver. Motor exam was assessed by a PD specialist using the Unified Parkinson's Disease Rating Scale (UPDRS). The Mini Mental State Examination (MMSE) assessed global cognition. Frontal Systems Behavior Scale (FrSBe) Family Form captured caregiver ratings of neuropsychiatric symptoms under 3 subscales: apathy, disinhibition, and executive dysfunction. The Multidimensional Caregiver Strain Index (MCSI) captured caregiver burden. Linear regression