Conclusions: This study reveals that lower odor identification performance is related to lower performance on measures of cognition and atrophy in MTL sub-regions in unimpaired and impaired older adults. Our findings support prior results demonstrating relationships between olfactory function, cognition, and MTL sub-regions. Specifically, olfactory function and episodic memory have been shown to follow similar patterns of decline in the course of AD, potentially reflecting AD pathology in shared regions of the MTL subserving episodic memory and olfactory function. Our findings demonstrate that reductions in both cortical thickness and grey matter volume of MTL regions are linked to olfactory deficits in individuals at risk for Alzheimer's dementia. Future steps will include the analysis of longitudinal cognitive and imaging indices and the incorporation of fluid biomarker data.

Categories: Dementia (Alzheimer's Disease)
Keyword 1: olfaction
Keyword 2: neuroimaging: structural
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43 Evaluating the Relationship Between Social Support, Executive Function, and Communicative Effectiveness

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Objective: Research suggests greater perceived social support is associated with better general cognitive function in community-dwelling older adults. While these findings expand our understanding of the role of social support in healthy aging, further work is needed to investigate the role of social support in mild cognitive impairment (MCI). Of particular interest is the relationship between executive function (EF), communicative effectiveness, and social support, as these are common areas of decline and are likely to impact one's ability to meaningfully interact with others. The present study aimed to evaluate the association between perceived social support, EF, and communicative effectiveness. We hypothesize better EF performance and communicative effectiveness would be associated with higher levels of perceived social support in older adults with MCI.
Participants and Methods: One hundred and twenty-one older adults with MCI were included in the current study. All participants were enrolled in Charles and Harriett Schaffer Cognitive Empowerment Program (CEP) at Emory University, a comprehensive lifestyle program for individuals diagnosed with MCI and their care partners. Upon CEP enrollment, participants completed self-report questionnaires, including the Multidimensional Scale of Perceived Social Support (MSPSS), the Communicative Effectiveness Index (CETI), and EF assessments including Letter Fluency (phonemic fluency), Digit Span Backward (working memory), and the Test of Practical Judgment (decision making). Additionally, a subset of participants completed the written Trail Making Test – Part B (set-shifting; n = 63). Pearson bivariate correlations were utilized to explore the relationship between MSPSS, CETI, and EF performance.
Results: Higher levels of perceived social support were significantly associated with communicative effectiveness ($r = .210$, $p = .021$), such that participants who endorsed having more social support also reported greater confidence in their communicative effectiveness. Perceived social support was associated with better working memory performance ($r = .342$, $p < .001$), phonemic fluency output ($r = .261$, $p = .041$), and shorter time to complete TMT-B ($r = -.244$, $p = .052$), indicating individuals with higher perceived social support demonstrated better EF abilities. Finally, greater confidence in communicative effectiveness was associated with better performances in working memory ($r = .274$; $p = .008$), phonemic fluency output ($r = .213$; $p = .020$) and decision making ($r = .192$; $p = .044$), suggesting stronger working memory, phonemic fluency, and practical decision-making abilities support better communicative effectiveness. There was no association between social support and practical decision-making abilities ($r = .146$, $p = .129$).
Conclusions: The current findings demonstrate a link between higher levels of social support, communicative effectiveness, and EF abilities, particularly in the subdomains of working memory, phonemic fluency, and set-shifting. This link suggests individuals with stronger EF

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abilities may have greater communicative effectiveness and, in turn, may be better able to maintain social relationships and garner social support. Future research is needed to evaluate the causality in this relationship, as it remains possible those with stronger social support networks maintain communicative effectiveness and EF for longer. Thus, further evaluation of the mechanism(s) underlying the relationships between social support, EF, and communicative effectiveness is needed.

Categories: Dementia (Alzheimer's Disease)
Keyword 1: cognitive functioning
Keyword 2: social processes
Keyword 3: mild cognitive impairment
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44 Can Clinical Trial data Inform our Understanding of the role of Depressive Symptoms in Alzheimer's Disease?

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Objective: Neuropsychiatric symptoms concerning mood are common in Alzheimer's disease (AD), but it is unclear if they are etiologically related to AD pathophysiology or due to factors considered to be non-pathogenic, such as small vessel cerebrovascular disease. New generation clinical trials for AD often enroll participants with evidence of AD pathophysiology, indexed by amyloid PET scanning, but who are cognitively asymptomatic. We used screening data from the Anti-Amyloid Treatment in Asymptomatic Alzheimer's (A4) study to examine the extent to which depressive symptoms are associated with amyloid pathophysiology and small vessel cerebrovascular disease, in the form of white matter hyperintensities (WMH).
Participants and Methods: The A4 study randomizes cognitively healthy older adults with evidence of amyloid pathophysiology on PET scanning. We used screening data, which included amyloid status (positive, negative) by visual read, amyloid PET standard uptake value ratio (SUVR) in cortical regions, and MRI data acquired in a subset (n=1,197, mean age 71.6 +/- 4.8 years, 57% women) to quantitate total WMH volume. Depressive symptoms were evaluated with the 15-item Geriatric Depression Scale, which we used both as a continuous variable and to define 'depressed' and 'non-depressed' groups, based on a cut score of > 5. We examined whether 1) depressive symptoms and proportion of depressed individuals differed between amyloid positive and negative groups, 2) there is a relationship between amyloid SUVR and depressive symptoms that differs as a function of amyloid positivity status, and 3) there is a relationship between WMH volume and depressive symptoms that differs as a function of amyloid positivity status.
Results: Although depressive symptom severity did not differ between groups (t=0.14, p=0.88), a greater proportion of individuals were classified as depressed in the amyloid negative group than the amyloid positive group (3.5% vs. 1.9%, $\chi 2$=4.60, p=0.032). Increased amyloid SUVR was associated with increased GDS scores among amyloid positive individuals (r=0.117, p=0.002) but not among amyloid negative individuals (r=0.006, p=0.68, Positivity Status x SUVR interaction on GDS: β=0.817, p=0.029). Increased WMH was associated with higher GDS scores (β=0.105, p=0.017) but not differentially in amyloid positive and negative participants (Positivity Status x WMH interaction on GDS: β=-0.010, p=0.243).
Conclusions: These analyses have several implications. First, individuals who are screened to participate in a clinical trial but do not have evidence of amyloidosis may be misattributing concerns about underlying AD pathophysiology to depressive symptoms. Second, the severity of AD pathophysiology, indexed by amyloid PET SUVR, may drive a small increase in depressive symptomatology among individuals over visual diagnostic thresholds. Third, small vessel cerebrovascular changes are additionally associated with depressive symptoms but in a manner that is independent of AD pathophysiology. Overall, depressive symptoms and depression are likely multiply determined among prospective clinical trial participants for preclinical AD.

Categories: Dementia (Alzheimer's Disease)
Keyword 1: depression

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