shown by a growing body of literature to impact many health outcomes, including cognition. The development of community-level measures including the Child Opportunity Index (COI) have allowed for increased understanding of the resources and conditions in neighborhoods and their impact on children's health. Given the limited existing research on how neighborhood factors impact cognitive development, this study aimed to examine associations between neighborhood context (COI) and cognitive outcomes in children and adolescents who presented for neuropsychological evaluations.

Participants and Methods: Participants included 4,633 youth (ages 2-22; M = 10.8 years; SD = 4.1 years; 63% Male; 33% with a medical condition involving the central nervous system [CNS]) living in the DC-VA-MD-WV Metro Area who presented to an outpatient clinic for evaluation and completed an intellectual functioning (IQ) measure (88% Weschler, 11% DAS, <1% Leiter, <1% RIAS). COI values were extracted from electronic medical records based on home address. COI values include an overall index and three domain scores in educational (educational access, quality, and outcomes), health/environment (access to healthy food, healthcare, and greenspace) and social/economic (income, employment, poverty); higher scores indicate higher opportunity. Using metro-based norms, children from all opportunity levels were represented (14% Very Low, 13% Low, 18% Moderate, 21% High, 34% Very High). Multiple regression analyses were conducted to examine main effect associations between COI and Full-Scale IQ (FSIQ), Verbal IQ (VIQ), and Non-Verbal IQ (NVIQ) and explore moderation of age, gender, and medical condition on these associations. Additional regression analyses examined these relationships for the three COI domains.

Results: Controlling for age, gender, and medical condition, neighborhood opportunity was positively associated with cognitive function (FSIQ: $\beta=0.198$; VIQ: $\beta=0.202$; NVIQ: $\beta=0.148$, p's <0.01). Models accounted for approximately 10-14% percent of the variance in cognitive outcomes (FSIQ: $F_{[6,4476]}=180.331$), Adj.$R^2=0.138$; VIQ: $F_{[6,4556]}=161.931$), Adj.$R^2=0.124$; NVIQ: $F_{[6,4548]}=123.893$), Adj.$R^2=0.098$). Age moderated the association between overall COI and cognitive outcomes (FSIQ: $\beta=0.005$, p=0.018; VIQ: $\beta=0.005$, p=0.043; NVIQ: $\beta=0.005$, p<0.01) such that the association between neighborhood opportunity and cognitive outcomes was stronger at older ages, though this was a small effect. When examining subdomains of COI, cognitive outcomes were associated with educational (FSIQ: $\beta=0.094$; VIQ: $\beta=0.099$; NVIQ: $\beta=0.078$, p's <0.01) and social/economic opportunity (FSIQ: $\beta=0.115$; VIQ: B=0.121; NVIQ: $\beta=0.084$, p's <0.01) but not health/environmental opportunity (FSIQ: $\beta=-0.001$, p=0.991; VIQ: $\beta=-0.008$, p=0.581; NVIQ: $\beta=-0.008$, p=0.553). Medical diagnosis moderated the association between social/economic opportunity and FSIQ; there was a stronger association between IQ and COI in youth with a medical diagnosis ($\beta=-0.071$, p<0.05).

Conclusions: These findings demonstrate the importance of neighborhood factors, especially education and social/economic opportunities, on cognitive development. Children living in higher opportunity neighborhoods showed higher cognitive functioning. Older age and CNS-involved medical conditions were associated with higher risk in the context of reduced neighborhood opportunities. These findings emphasize the need for advocacy and other efforts to improve community resources (e.g., access to early childhood education) to address inequities in cognitive development.

Categories: Cross Cultural Neuropsychology/ Clinical Cultural Neuroscience
Keyword 1: intellectual functioning
Keyword 2: environmental pollutants / exposures
Keyword 3: pediatric neuropsychology
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Poster Session 03: Dementia | Amnesia | Memory | Language | Executive Functions

12:00 - 1:15pm
Thursday, 2nd February, 2023
Town & Country Foyer

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1 Efficacy of Digital and Non-Digital Compensatory Strategies in Supporting Prospective Memory Task Completion

Among Community-Dwelling Older Adults

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Objective: Compensatory strategies (CS) can assist in supporting everyday memory and functional independence. Digital compensatory strategies (e.g., calendar and notes apps) are being used more by older adults, but their effectiveness compared to paper-based strategies has been questioned due to their novelty and potential suitability. This study examined whether digital and non-digital strategies vary in quality and lead to accuracy differences in carrying out a set of real-world prospective memory (PM) tasks.
Participants and Methods: Seventy community-dwelling older adults (M_{age}= 70.80, SD = 7.87) completed two testing sessions remotely from home via Zoom. Participants were presented four real-world PM tasks (packing for overnight trip, creating physical activity summary, paying bill by due date, and calling lab to leave message) and were encouraged to use their typical CS to support task completion. The type and quality of CS, as well as accuracy of PM task completion, were assessed using lab-developed coding schemas. Quality scores were on a 0-3 point scale per task step (maximum total score = 63), and accuracy scores were on a 0-4 point scale (maximum score = 16). Participants were differentiated into two groups: those who used at least one digital CS (40 participants) and those who did not use digital CS (30 participants). T-tests were examined for group differences in number of CS utilized, CS quality, and PM accuracy. Within each group, correlations between CS quality and PM accuracy were conducted. Group comparisons were also conducted for demographics, cognitive test performances, and questionnaires.
Results: The technology group (M = 13.90, SD = 5.43) utilized significantly more strategies than the non-technology group (M = 9.50, SD = 4.12), $t(68)$ = -3.71, p < .05, d = 0.91, and the technology group's strategies (M = 42.48, SD = 10.47) were significantly higher quality than the non-technology groups (M = 33.80, SD = 13.02), $t(68)$ = -3.09, p < .05, d = 0.73. However, the technology (M = 12.30 , SD = 2.48) and non-technology (M = 11.87, SD = 3.16) groups completed the four PM tasks with equivalent accuracy, p > .05. Correlational analyses revealed that higher quality strategies were associated with better PM performance for both the technology (r = .67 , p < .001) and the non-technology group (r = .71, p < .001). Although the technology group reported higher comfort with technology, both groups reported comparable levels of quality of life and functional independence and performed similarly on cognitive tests. The technology group trended towards being younger and having a higher level of global cognitive status (p = .07), but there were no group differences in education level or premorbid verbal ability.
Conclusions: Digital compensatory strategies resulted in higher CS quality scores and more strategies used, but there was no significant difference in PM accuracy scores between digital and non-digital CS. Regardless of technology use, using high quality CS supported real-world PM performance. Interventions that focus on improving the quality of compensatory strategies being utilized by older adults may enhance everyday functioning.

Categories: Cognitive Intervention/Rehabilitation
Keyword 1: technology
Keyword 2: memory: prospective
Keyword 3: everyday functioning
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2 Differences in Older Adults' Compensatory Strategy Use Across Time-Based and Event-Based Prospective Memory Tasks

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Objective: Older adults often spontaneously use compensatory strategies (CS) to support everyday memory and daily task completion. Recent work suggests that evaluating the quality of CS provides utility in predicting real-world prospective memory (PM) task completion. However, there has been little exploration of how CS quality may vary based on PM