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

https://doi.org/10.1017/S1355617723003211 Published online by Cambridge University Press

demands. This study examined differences in CS use and task completion accuracy across time-based (TB) and event-based (EB) PM tasks. Based on differences in self-monitoring demands and ability to engage in cognitive offloading, it was hypothesized that participants would utilize better quality strategies for TB tasks than EB tasks, which would lead to superior accuracy in completing TB 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 two TB PM tasks (paying bill by due date, calling lab at specified time) and two EB PM tasks (presenting a packed bag to examiner upon a cue, initiating discussion about physical activity log upon cue). Participants were encouraged to use their typical CS to support task completion. Quality of CS (0-3 points per task step) and accuracy of task completion (0-4 points per task) were evaluated through lab-developed coding schemas. For each task, CS Quality scores were assigned based on how well strategies supported retrospective memory (RM) and PM task elements, and RM and PM Quality scores were summed to yield a Total Quality score. Because each task consisted of a different number of steps, CS Quality scores for each task were divided by their respective number of steps to yield measures of average quality. Paired-samples t-tests examined differences in average CS quality (Total, RM, and PM) and PM accuracy across TB and EB tasks.
Results: Participants' Total CS Quality was equivalent for TB tasks (*M* = 1.92, *SD* = 0.64) and EB tasks (*M* = 1.87, *SD* = 0.68), *t*(69) = 0.60, *p* = .55. Comparisons of subscores revealed that while participants used similar quality RM supports for TB tasks (*M* = 1.67, *SD* = 0.66) and EB tasks (*M* = 1.78, *SD* = 0.68), *t*(69) = 1.39, *p* = .17, participants utilized superior quality PM supports for TB tasks (*M* = 2.16, *SD* = 0.70) compared to EB tasks (*M* = 1.97, *SD* = 0.73), *t*(69) = 2.46, *p* = .02. Additionally, participants completed TB tasks with greater accuracy (*M* = 3.21, *SD* = 0.74) than EB tasks (*M* = 2.84, *SD* = 0.89), t(69) = 3.62, *p* < .001.
Conclusions: While participants exhibited similar quality CS for RM components across TB and EB tasks, they displayed superior quality CS for PM components of TB tasks. This difference in quality may have contributed to participants completing real-world TB PM tasks with greater accuracy than EB tasks. Results contrast with trends in lab-based PM tasks, in which participants usually complete EB tasks more accurately. Findings may have implications for interventions, such as an enhanced focus on teaching high-quality CS to support real-world EB tasks.

Categories: Cognitive Intervention/Rehabilitation
Keyword 1: everyday functioning
Keyword 2: memory: prospective
Keyword 3: aging (normal)
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3 Olfactory Dysfunction as a Preclinical Biomarker of AD: Psychophysical Olfactory Performance Reflects Hippocampal Integrity in Non-Demented Older Adults

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Objective: One of the greatest challenges of the Alzheimer's disease (AD) epidemic is identifying the disease prior to substantial neurological compromise. The established biomarkers of AD, such as measures of cognitive impairment, hippocampal atrophy, and CSF measures of beta amyloid and tau, used in research and drug trials are less indicative of AD pathology in preclinical, non-demented, populations. Olfactory dysfunction, a well-established sensory impairment of AD found to correlate strongly with tau burden and hippocampal volume measures, has shown to be a promising preclinical biomarker for AD progression. Several studies have found either impaired odor identification or odor memory at baseline to predict 5-year follow-up cognitive decline and conversion from MCI to AD, but less is known about how olfactory performance reflects the integrity of associated brain regions such as the hippocampus. The present analysis aims to

https://doi.org/10.1017/S1355617723003211 Published online by Cambridge University Press