

AGING RESEARCH

SPOTLIGHT on WEB-BASED RESEARCH

YU-CARE member Dr. Andrée-Ann Cyr and her colleagues have recently published an article entitled “Web-Based Cognitive Testing of Older Adults in Person Versus at Home: Within Subjects Comparison Study”.



Their study found that older adults performed similarly on computerized tasks of memory and attention when performed unsupervised at home and supervised in the laboratory. These are encouraging findings as online research for experimental research is increasingly popular, and participation among older adults can be restricted by mobility and transportation constraints – especially during Covid. You can access the full paper here: <https://aging.jmir.org/2021/1/e23384>

Dr. Cyr and her team are currently leveraging online testing to investigate the relationship between curiosity and episodic learning among younger and older adults. They are also looking at the role agency plays while learning new information, and whether giving individuals more control over their learning experience can bolster memory.

Abstract

Background: Web-based research allows cognitive psychologists to collect high-quality data from a diverse pool of participants with fewer resources. However, web-based testing presents unique challenges for researchers and clinicians working with aging populations. Older adults may be less familiar with computer usage than their younger peers, leading to differences in performance when completing web-based tasks in their home versus in the laboratory under the supervision of an experimenter.

Objective: This study aimed to use a within-subjects design to compare the performance of healthy older adults on computerized cognitive tasks completed at home and in the laboratory. Familiarity and attitudes surrounding computer use were also examined.

Methods: In total, 32 community-dwelling healthy adults aged above 65 years completed computerized versions of the word-color Stroop task, paired associates learning, and verbal and matrix reasoning in 2 testing environments: at home (unsupervised) and in the laboratory (supervised). The paper-and-pencil neuropsychological versions of these tasks were also administered, along with questionnaires examining computer attitudes and familiarity. The order of testing environments was counterbalanced across participants.

Results: Analyses of variance conducted on scores from the computerized cognitive tasks revealed no significant effect of the testing environment and no correlation with computer familiarity or attitudes. These null effects were confirmed with follow-up Bayesian analyses. Moreover, performance on the computerized tasks correlated positively with performance on their paper-and-pencil equivalents.

Conclusions: Our findings show comparable performance on computerized cognitive tasks in at-home and laboratory testing environments. These findings have implications for researchers and clinicians wishing to harness web-based testing to collect meaningful data from older adult populations.