

AB029. Investigating the link between reduced reading ability and cognitive decline in older adults with acquired vision impairment: a feasibility study

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Background: Reading enables us to obtain information, to engage in leisure, educational, business and other activities, and fosters cognitive stimulation. Acquired vision loss can have a negative effect on an individual's ability to read, and, by extension, reduce overall quality of life. In addition, a growing body of research on the association between reading and cognition has linked a decrease in reading ability with negative changes in cognitive function. Therefore, the purpose of the current study is to test the feasibility of a research protocol that will be used to study the association between reduced reading ability and cognitive impairment, specifically in older adults with acquired vision loss.

Methods: Seven participants (age range, 27–60 years, Mage =44, 4 males) completed a series of questionnaires and assessments that measured their cognitive, hearing, and reading abilities. All participants had normal hearing, vision and cognition, with the exception of one (two pre-existing

hearing conditions). Cognition was tested using the Rey Auditory Verbal Learning Test (RAVLT), the RAVLT 50-word Recognition test, the Verbal Fluency Test, an auditory Trail-Making task, and an auditory 1-N-back memory task. Otoscopy was used to assess ear health, and hearing was measured with self-administered computerized audiometry (Home Hearing Test) and a speech-in-noise test (Canadian Digit Triplet Test). Questionnaires included the Hearing Handicap Inventory for the Elderly, and a multiple-choice questionnaire on subjective reading ability and reading habits. Finally, reading acuity, speed and comprehension were assessed using the International Reading Speed Texts and the MNRead.

Results: In testing the feasibility of this protocol, the uninterrupted length of testing time, including obtaining consent, was determined to be between 60–90 min. Several of the assessments and tests (RAVLT, MNRead, audiogram) were reported to be mentally taxing. However, all pilot participants were able to complete all tasks. With the exception of standardized tests, some of the instructions required refinement and clarification, in order to better explain the tasks for each test.

Conclusions: Anticipating that the protocol will be more demanding for the ultimate target population, who will be older adults with sensory impairment, these pilot results were used to guide a strategy for collecting the dependent measures. It was decided to administer the most important measure in each of the domains (e.g., MNRead, audiogram, RAVLT) to ensure that data on vision, hearing, reading and cognition are collected. Depending on the level of fatigue and motivation of the participants, secondary measures in each domain (the International Reading Speed Texts, CDTT, the 1-N-back task) will be administered afterward. Multiple sessions and breaks will be offered as needed. Data collection with novice vision rehabilitation clients will begin at the end of January 2019.

Keywords: Cognition; vision impairment; reading rehabilitation

doi: 10.21037/aes.2019.AB029

Cite this abstract as: Balaji S, Elalouf K, Urqueta-Alfaro A, Marinier JA, Johnson A, Phillips N, Kehayia E, Pichora-Fuller MK, Wittich W. Investigating the link between reduced reading ability and cognitive decline in older adults with acquired vision impairment: a feasibility study. *Ann Eye Sci* 2019;4:AB029.