Title:
Longitudinal Associations Between Hearing Loss, Vision Loss, and Dual Sensory Loss and Cognitive Decline

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Session Title:
Rising Stars of Research and Scholarship Invited Student Posters

Slot:
RS PST1: Sunday, 17 November 2019: 11:45 AM-12:15 PM

Applicable Category:
Academic, Students

Keywords:
Cognitive decline, Hearing loss and Vision loss

References:


**Abstract Summary:**

The audience will gain a good understanding of the longitudinal relationship between vision loss, hearing loss, and cognitive decline as people grow older. The audience will also gain a good understanding of the dataset and the analytical approach we used in our study.

**Content Outline:**

**Introduction**

Knowledge gaps still exist in terms of understanding the longitudinal associations between hearing loss, vision loss, dual sensory loss, and cognitive decline.

**Methods**

We analyzed data from the 2006 to 2012 cycles of Health and Retirement Study (HRS) and its supplement: The Aging, Demographics, and Memory Study (ADAMS) (waves C and D). (n = 304) underwent both audiometric and cognitive testing.

Multilevel mixed models (age models) were used to examine the association between hearing loss, vision loss, dual sensory loss, and cognitive decline while adjusting for covariates (including age, education level, race, survey wave (time), household income, number of medical conditions, and physical exercise).

**Results**

Older adults with hearing loss had a significantly faster rate of cognitive decline.

Older adults with vision loss did not have a significantly faster rate of cognitive decline.

Older adults who had dual sensory loss had a significant faster rate of cognitive decline.

**Conclusion**

Hearing loss and dual sensory loss are found to be risk factors of cognitive decline as people age.

**Topic Selection:**

Rising Stars of Research and Scholarship Invited Student Posters (25201)
Abstract Text:

Background

Hearing and visual loss have drawn increasing research attention as risk factors of cognitive decline and dementia. However, knowledge gaps still exist in terms of understanding the longitudinal associations between hearing loss, vision loss, dual sensory loss, and cognitive decline. This study aims to 1) examine the individual longitudinal associations of hearing loss and vision loss with cognitive decline; and 2) examine the longitudinal associations between dual sensory loss and cognitive decline.

Methods

We analyzed data from the 2006 to 2012 cycles of Health and Retirement Study (HRS) and its supplement: The Aging, Demographics, and Memory Study (ADAMS) (waves C and D). (n = 304) underwent both audiometric and cognitive testing. Hearing function was measured by the gold-standard pure tone thresholds test, and hearing loss was defined by the incapability of hearing 25 dB at any frequencies in the better ear. Visual acuity was measured by using a pocket Snellen card, and vision loss was defined as having corrected binocular vision worse than 20/40. Dual sensory loss was defined as having both types of sensory loss. Cognitive function was measured by the HRS Telephone Interview for Cognitive Status (TICS). Data on demographics, medical history, and APOE ε4 genotype were also available from the dataset. Multilevel mixed models (age models) were used to examine the association between hearing loss, vision loss, dual sensory loss, and cognitive decline while adjusting for covariates (including age, education level, race, survey wave (time), household income, number of medical conditions, and physical exercise).

Results

Older adults with hearing loss had a significantly faster rate of cognitive decline as they grew older ($\beta = -0.182$, $p = .01$) compared to those with normal hearing. Older adults with vision loss did not have a significantly faster rate of cognitive decline as they grew older ($\beta = -0.04$, $p = .57$) compared to those with normal vision. Older adults who had dual sensory loss had a significant faster rate of cognitive decline as they grow older ($\beta = -0.21$, $p = .04$) compared to those with no or only single sensory loss.

Conclusion

Hearing loss and dual sensory loss are found to be risk factors of cognitive decline as people age. Further research is needed to determine if intervening on sensory loss at an earlier stage would help prevent future cognitive decline.