

The Effect of Audibility Regarding Performance on the Montreal Cognitive Assessment



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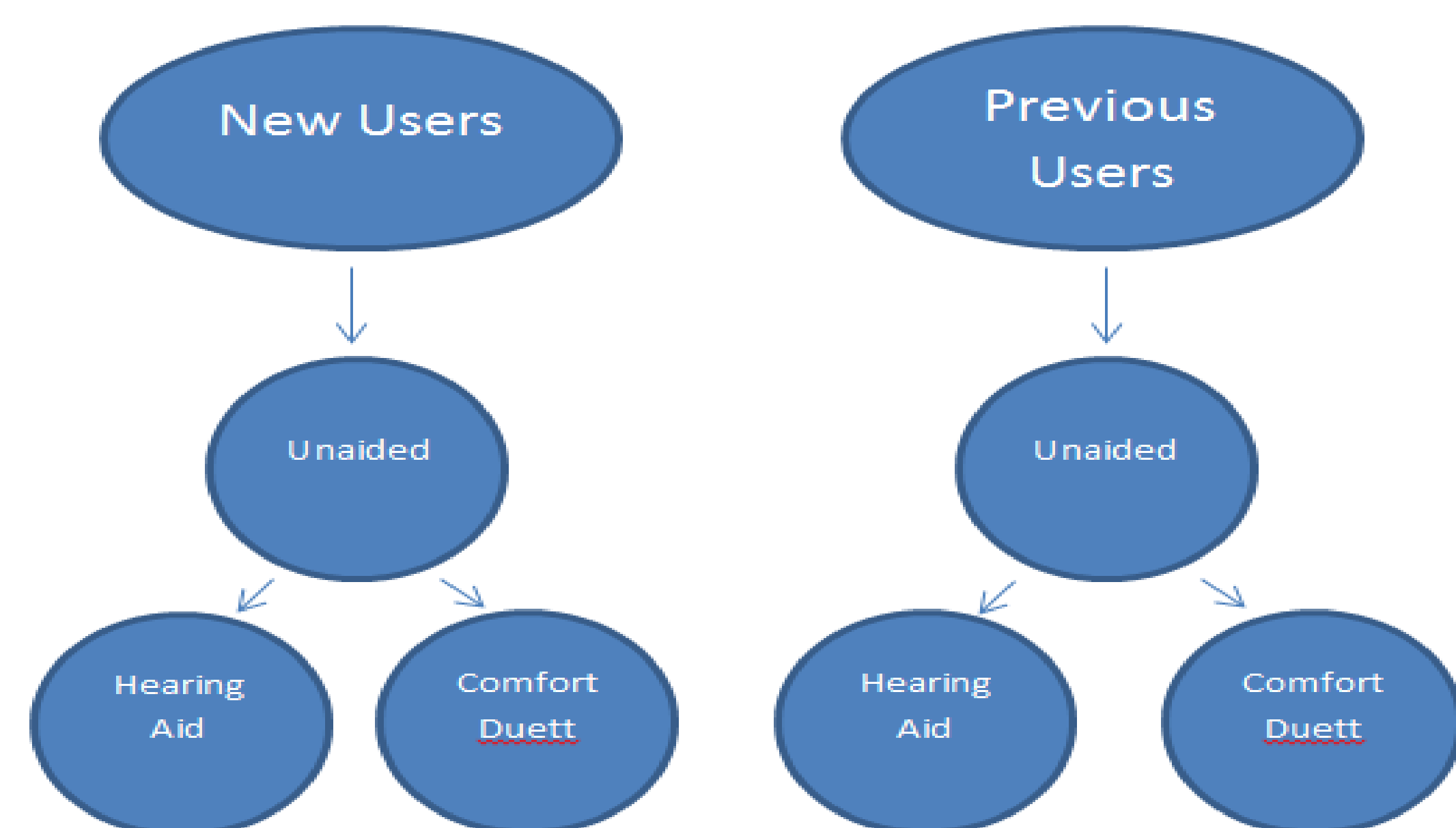


Introduction

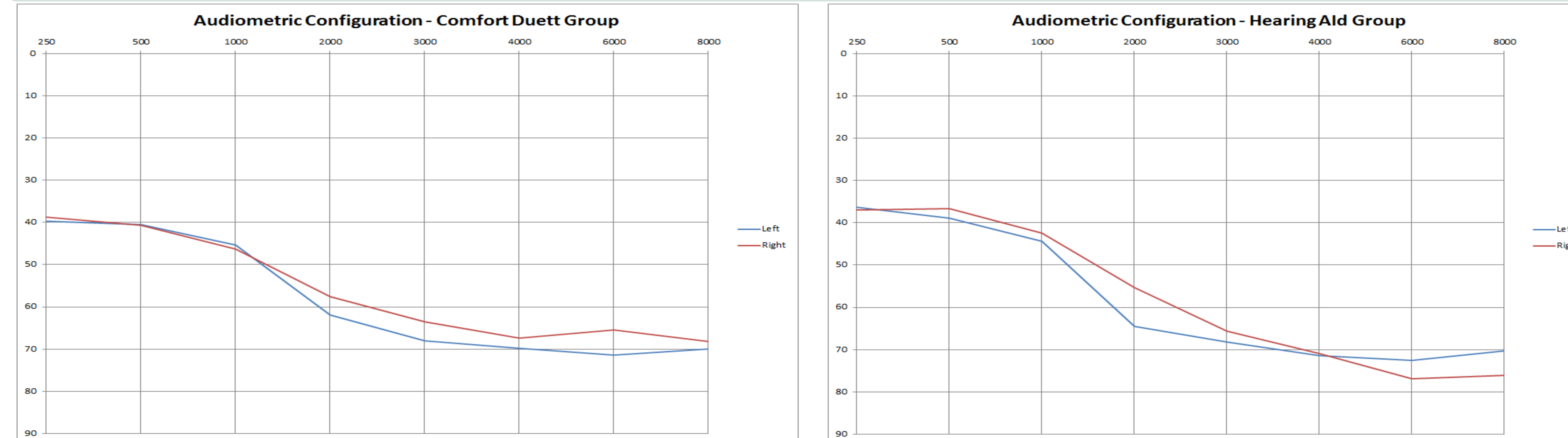
- Hearing loss and cognitive decline are two common pathologies in the elderly. Hearing loss occurs in approximately 61.3% of the U.S. population aged 70 years and above.
- Research indicates long term auditory deprivation due to hearing loss may lead to cognitive decline (Mick et al. 2015).
- Currently, many orally based cognitive screening tests are utilized for the diagnosis and treatment of cognitive impairment and cognitive decline.

Methods

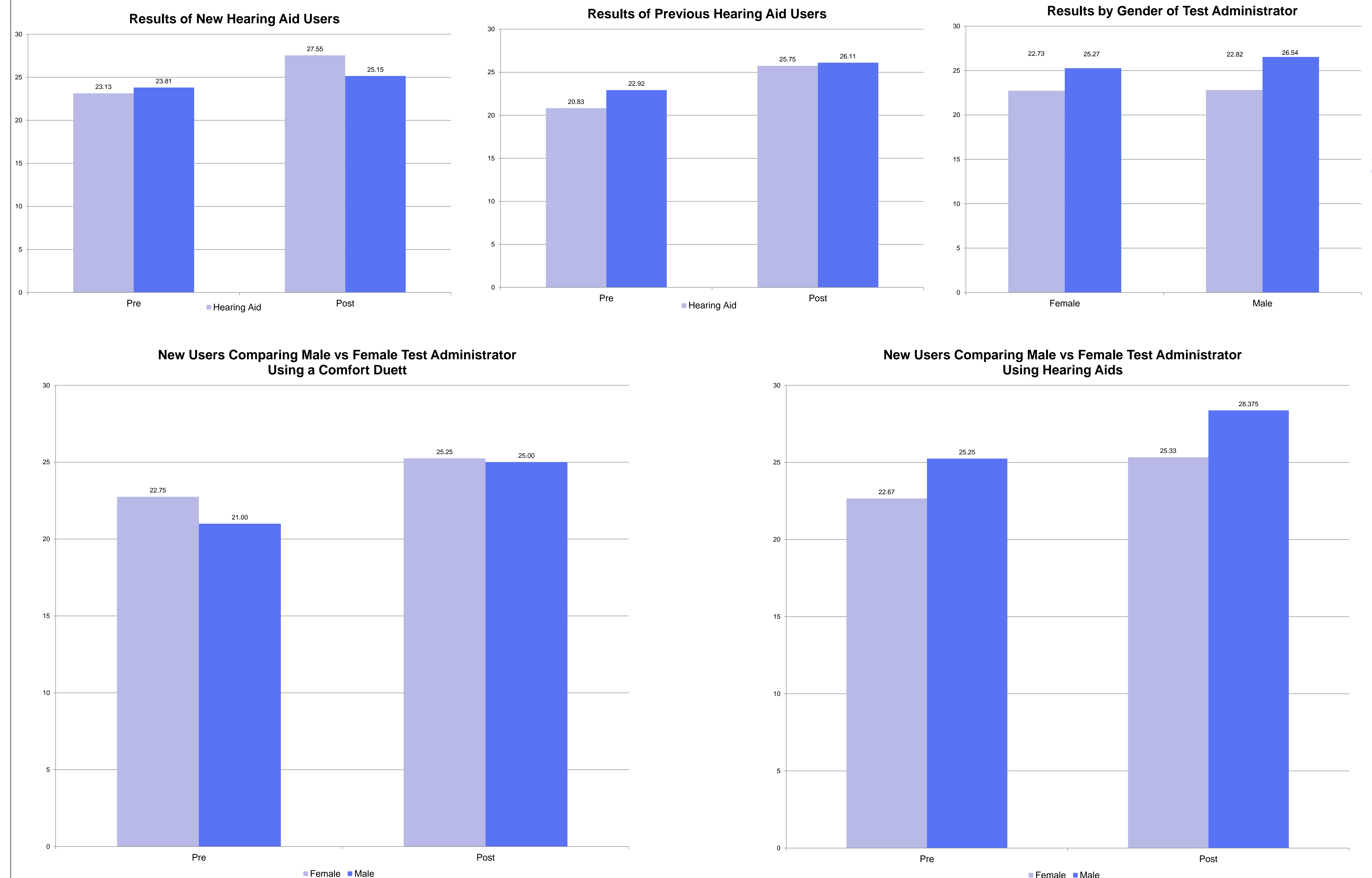
- The aim of this project is to compare performance on the Montreal Cognitive Assessment (MoCA) considering several variables.
- Veterans completed the MoCA test, unaided, during a hearing aid evaluation, and again with hearing aids or a Comfort Duett approximately 1 month later.
- Comparisons in this study include: New vs previous users, male vs female test administrator performance, and testing using hearing aids vs Comfort Duett (Pocket Talker / Listenaid) scores.
- For the male vs female groups, the Veteran was tested by the same administrator during pre and post measures
- Veterans using a Comfort Duett during the MoCA were instructed to set the volume to a comfortable level.
- The previous user group was tested using a male administrator only.



Average Audiometric Thresholds - Comfort Duett Group vs Hearing Aid Group



Results



Initial Findings

- Results indicate that patients with hearing loss perform better when completing the MoCA using some form of amplification.
- Hearing aids programmed using best practices (comprehensive real-ear measures) led to better scores than the Comfort Duett set at patient preferred levels.
- The gender of the test administrator did not have any significant effect on test performance.
- There were no significant differences in performance between new or previous hearing aid users in either the pre or post fitting condition.

Implications

- Amplification must be considered prior to administering any oral based test if the patient is suspected of having a hearing loss.
- When possible, an audiometric evaluation should be completed prior to administering orally based cognitive testing.
- Hearing aid functionality should always be verified to be providing appropriate audibility prior to administering the MoCA or any other oral based test.
- Following best practices during hearing aid fittings and ensuring audibility may prevent misdiagnosis of cognitive impairment and misdiagnosis of cognitive decline in the geriatric population.

References

- Lin, F. R., Thorpe, R., Gordon-Salant, S., & Ferrucci, L. (2011). Hearing Loss Prevalence and Risk Factors Among Older Adults in the United States. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, 66A(5), 582-590. doi:10.1093/gerona/66a5
- Mick, P., Reed, M., & Pichora-Fuller, M. (2015). Hearing, Cognition, and Healthy Aging: Social and Public Health Implications of the Links between Age-Related Declines in Hearing and Cognition. *Seminars in Hearing*, 36(03), 122-139. doi:10.1055/s-0035-1555116
- Smith, T., Gildeh, N., & Holmes, C. (2007). The Montreal Cognitive Assessment: validity and utility in a memory clinic setting. *The Canadian Journal of Psychiatry*, 52(5), 329-332.