E-Poster

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Assessing Subjective Hearing Loss Screening in Older Adults: Comparing Self-Report Questions and HHIE-S With WHO Audiometric Criteria in a Bronx-Based Study

Topic: Diagnosis

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BACKGROUND

This study examined the effectiveness of subjective hearing assessments, including the Hearing Handicap Inventory for the Elderly - Screening (HHIE-S) and a single-question (SQ) self-report, in detecting hearing loss among older adults in The Bronx. Given the high prevalence of undiagnosed hearing loss in aging populations, simple and effective screening tools are needed for early detection.

METHODS

Fifty-two older adults were categorized into hearing loss (HL) and non-hearing loss groups based on World Health Organization (WHO) criteria. In the first phase, HL was defined as a pure-tone average (PTA) > 20 dB, and participants completed the HHIE-S and the SQ: "Do you have significant hearing loss?" In the second phase, HL was redefined as PTA > 40 dB (moderate-to-severe hearing loss). Correlations between HL and subjective measures were analyzed, followed by sensitivity and specificity calculations for significant variables. Principal component analysis (PCA) was performed to explore response patterns.

RESULTS

When HL was defined as PTA > 20 dB, no subjective measures were significantly associated with HL. However, at PTA > 40 dB, the SQ was strongly correlated with HL ($r = 0.584$, $p < 0.001$), as were the HHIE-S item "Does a hearing problem cause you difficulty when listening to TV or radio?" ($r = 0.356$, $p = 0.01$) and an HHIE-S cut-score of 8 ($r = 0.339$, $p = 0.015$). The SQ had 86% sensitivity and 80% specificity, followed by the TV/radio question (84% sensitivity, 57% specificity) and the HHIE-S cut-score of 8 (79% sensitivity, 62.5% specificity). Surprisingly, the HHIE-S question "Do you feel handicapped by a hearing problem?" (HHIE-S3) was not significantly associated with HL and did not load onto the same PCA factor as the SQ, despite both aiming to assess hearing handicap.

CONCLUSION

Subjective hearing screening tools can effectively identify moderate-to-severe HL in community settings. The SQ demonstrated high accuracy, making it a valuable addition to public health screening programs for early HL detection in older adults. Principal component analysis results suggest that including an additional screener can capture different dimensions of HL.

Statement of Disclosures

None

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