

Supplemental Material

Gender Differences in the Association between Hearing Loss and Cognitive Function

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Table a Regression coefficients β (95% confidence intervals) of Hearing Loss and Hearing Aid Use for Cognitive Function (composite z-score), NHANES 2011-2012

	Model 1	Model 2	Model 3	Model 4
Male				
Hearing loss	-12.29 (-20.01 to -4.56)**	-7.38 (-13.69 to -1.07)*	-7.26 (-12.28 to -2.24)**	-7.37 (-11.98 to -2.75)**
Hearing aid use	56.37 (28.11 to 84.64)**	37.89 (13.92 to 61.86)**	39.78 (14.92 to 64.64)**	38.84 (13.23 to 64.44)**
Female				
Hearing loss	-8.56 (-11.68 to -5.44)**	-4.49 (-9.51 to 0.52)	-4.83 (-10.83 to 1.17)	-4.96 (-10.70 to 0.79)
Hearing aid use	47.56 (18.93 to 76.19)**	17.29 (-14.38 to 48.96)	19.45 (-15.56 to 54.46)	17.38 (-12.51 to 47.27)

Notes: β -Coefficients indicated the change in composite z-scores when hearing loss increased by 10 dB or with hearing aid use. Adjusted covariates: Model 1 = hearing aid use, age. Model 2 = Model 1 + (race/ethnicity, education, marital status, poverty income ratio, total cholesterol and high-density lipoprotein cholesterol). Model 3 = Model 2 + (smoking status and alcohol consumption). Model 4 = Model 3 + (diabetes, hypertension and stroke). * $P < 0.05$; ** $P < 0.01$.

Table a contains the result of multiple linear regression models that describe the gender differences in the relationship between hearing loss and cognitive function. In a fully adjusted model, when hearing loss was expressed as a continuous variable, hearing loss was statistically significantly associated with composite z-scores in males (β -7.37, 95% CI -11.98 to -2.75). In contrast, there was no association in females (β 38.84, 95% CI 13.23 to 64.44). Hearing aid use remained associated with higher cognitive scores only among males (β 38.84, 95% CI 13.23 to 64.44).