

Prevalence of adult unilateral hearing loss and hearing aid use in the United States

Justin S. Golub, MD; Lawrence R. Lustig, MD; Anil K. Lalwani, MD

Department of Otolaryngology—Head and Neck Surgery, Columbia University College of Physicians and Surgeons, NewYork-Presbyterian/Columbia University Medical Center, New York, NY

Abstract

Objectives: The prevalence of unilateral hearing loss and corresponding hearing aid usage in adults has not been definitively assessed. (1) To establish the prevalence of unilateral hearing loss, and (2) to establish the prevalence of hearing aid use with unilateral hearing loss in US adults using a nationally representative study.

Study Design: Cross sectional national epidemiologic study (n=6,242)

Methods: Subjects aged 18 years and over with audiometric testing in the 2005-2006, 2009-2010, and 2011-2012 cycles of the National Health and Nutrition Examination Study (NHANES) were included. Unilateral hearing loss was defined as normal hearing (≤ 25 dB HL pure tone average; PTA) in one ear and at least mild hearing loss (> 25 dB HL PTA) in the other ear. Hearing aid usage was defined by at least 5 hours per week (2005-2006) or at least seldom (2009-2012) use. Sampling weights were utilized to ensure generalizability to the US population.

Results: The overall prevalence of unilateral hearing loss in adult Americans was 7.2% (95% CI 6.1-8.6%). The prevalence of mild and moderate-or-worse unilateral hearing loss was 5.7% (4.8-6.7%) and 1.5% (1.1-2.1%), respectively. Of those with unilateral hearing loss, the overall prevalence of hearing aid usage was 2.0% (0.6-6.7%). Hearing aid usage for mild and moderate-or-worse unilateral hearing loss was 1.4% (0.2-8.0%) and 4.2% (0.1-22%), respectively.

Conclusions: The prevalence of unilateral hearing loss is common among US adults. The prevalence of at least occasional hearing aid usage for this condition is surprisingly low at 2% overall and 4% for moderate-or-worse unilateral hearing loss.

Background

- Recent studies have focused on the prevalence¹ and associations² of adult HL (primarily bilateral, i.e. presbycusis)
- The prevalence of **unilateral** hearing loss (UHL) in the United States has **not been rigorously assessed**
- The **prevalence of hearing aid** use among those with unilateral hearing loss is also unclear

Methods

- US National Health and Nutrition Examination Study (NHANES) cycle 05-06, 09-10, 11-12 (had audiograms), n=6,242
- Adults ≥ 18 years old
- HL:** 4-frequency pure tone average (PTA) > 25 dB HL (Mild HL: 26-40 dB HL, Moderate HL+: ≥ 41 dB HL)
- UHL:** HL in one ear, no HL in other ear
- Hearing aid use:** ≥ 5 hours/week (2005-06) or at least “seldom” (2009-12)
- Sampling weighting methods utilized to ensure generalizability to US population

Results

Percent of US Population with UHL

Age (Years)	HL Severity in Impaired Ear		
	Mild	Moderate+	Total
18-19	1.2%	1.1%	2.3%
20-29	0.8%	0.5%	1.4%
30-39	1.8%	0.9%	2.7%
40-49	3.8%	0.8%	4.6%
50-59	9.1%	2.8%	11.8%
60-69	11.8%	3.2%	14.9%
70-79	12.1%	1.8%	13.8%
80+	8.0%	0.8%	8.8%
Tot	5.7% (4.8-6.7%)	1.5% (1.1-2.1%)	7.2% (6.1-8.6%)

(95% CI in parentheses)

- Prevalence of UHL in US adults is 7.2%** (95% CI = 6.1-8.6%)

Percent of Those with UHL Who Wear Hearing Aids

HL Severity in Impaired Ear		
Mild	Moderate+	Total
1.4% (0.2-8.0%)	4.2% (0.1-22%)	2.0% (0.6-6.7%)

(95% CI in parentheses; prevalence too low to stratify by age)

- Prevalence of hearing aid use in UHL is 2.0%** (95% CI = 0.6-6.7%)

Conclusions

- UHL is common** among US adults (**7% of American adults have UHL**)
- Among those with UHL, prevalence of at least occasional **hearing aid use is very low (only ~2% of American adults with UHL wear hearing aids)**
- Implication of adult UHL requires further study

References

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- Lin FR. Hearing loss in older adults: who's listening? *JAMA*. 2012; 307(11): 1147-1148.

