



2018
AUDIOLOGY SURVEY

**Survey Methodology,
Respondent Demographics,
and
Glossary**

Jeanette Janota, Surveys & Analysis
American Speech-Language-Hearing Association
2200 Research Boulevard
Rockville, MD 20850-3289
800-498-2071, ext. 8738
jjanota@asha.org

Contents

Executive Summary1

Survey Methodology2

 Sample Design2

 Weighting.....2

 Response Rate.....2

 Experimental Design3

 Data Entry4

 Nonresponse.....4

 Respondents Versus Population.....5

Demographics.....7

 Primary Employment Facility7

 Excluding “Other”7

 Employment Status.....7

 Salary Basis8

 Primary Employment Function9

 Highest Degree.....9

 Years of Experience.....10

 Population Setting.....10

 Region of the Country11

 Sex12

Glossary12

 Types of Facilities.....12

 Stratified Random Sample13

 Response Rate.....13

 Types of Averages.....13

Audiology Survey Reports.....14

Suggested Citation.....14

Resources14

Electronic Copy.....14

Thank You14

Additional Information14

Figures

Figure 1: Primary Employment Facility7
Figure 2: Employment Status8
Figure 3: Salary Basis8
Figure 4: Primary Employment Function.....9
Figure 5: Highest Degree9
Figure 6: Mean Years of Experience10
Figure 7: Population Setting10
Figure 8: Region of the Country.....11
Figure 9: Sex12

Tables

Table 1: Calculation of Response Rate, Unweighted2
Table 2: Response Rate, by Experimental Design.....3



Executive Summary

In Fall 2018, the American Speech-Language-Hearing Association (ASHA) conducted a survey of audiologists. This survey was designed to provide information about salaries, working conditions, and service delivery as well as to update and expand information gathered from previous *ASHA Audiology Surveys*.

Overall Findings

- ◆ The response rate was 40%.
- ◆ Respondents were *similar* to the population of audiologists from which they were drawn with regard to employment status, function, state, sex, and age but *dissimilar* with regard to highest degree earned.
- ◆ 74% worked full time.
- ◆ 73% received an annual salary.
- ◆ At least 90% of the audiologists who worked in industry and colleges and universities were employed full time.
- ◆ 81% were clinical service providers.
- ◆ 66% held an AuD degree.
- ◆ Median number of years of experience was 20.
- ◆ 51% worked in cities or urban areas.
- ◆ 32% worked in the South.
- ◆ 84% were female; 16% were male.

Survey Methodology

A stratified random sample of 4,500 ASHA-certified audiologists was selected for this survey from a population of 8,293 audiologists. They were stratified on the basis of type of facility and private practice.

Sample Design

The survey was mailed on September 12, 2018, to 4,500 ASHA-certified audiologists working in the United States. Individuals who returned their surveys were removed from second (October 10) and third (November 7) mailings. Half received prenotification emails, and half received postnotification emails (see Experimental Design, below). Each postal mailing consisted of a personalized cover letter, a numbered survey, and a #10 postage-paid business return envelope inserted into a #11 window envelope with an ASHA return address. Commemorative postage stamps were used on window envelopes at the full, first-class rate.

Weighting

Because facilities with fewer audiologists (e.g., universities) were oversampled and those with many (e.g., hospitals) were undersampled, weighting was used when presenting data to restore all groups to their actual proportion in the population of ASHA audiologists.

Response Rate

Of the original 4,500 audiologists in the sample, 44 had undeliverable addresses, nine had retired, 22 were employed in ineligible facilities, three were not employed in the professions, and two were ineligible for other reasons, leaving 4,420 possible respondents. The actual number of respondents was 1,756, resulting in a 39.7% response rate (see Table 1).

Table 1: Calculation of Response Rate, Unweighted

Disposition	Number
Original (gross) sample size	4,500
Undeliverable addresses	44
Retired	9
No longer employed in audiology	25
Ineligible for other reasons	2
Net sample size	4,420
Number of respondents	1,756
$1,756 \div 4,420 = 39.7\%$	

Experimental Design

All surveys were printed on 25.5 in. × 11 in. paper folded to 8.5 in. × 11 in. and printed with two columns per page. The font was Arial, 11 pt. The final page contained a thank-you note; an announcement about ASHA Special Interest Groups 6, 7, 8, and 9; and contact information should respondents have questions.

A methodological experiment was designed into the survey to test whether final response rates would be different if sample members were notified about the survey shortly before or shortly after the first fielding of the survey. Specifically, a randomly selected half of the sample received email prenotification that was sent 2 days *before* the first fielding of the survey. The other half received an email reminder that was sent 5 days *after* the first fielding.

Table 2 shows that there was no difference ($p = .121$) in the unit response rate when the timing of the email notification was varied.

Table 2: Response Rate, by Experimental Design

Disposition	Experimental: Prenotification	Control: Postnotification
Original (gross) sample size	2,251	2,249
Undeliverable addresses	19	25
Retired	4	5
No longer employed in audiology	13	12
Ineligible for other reasons	1	1
Net sample size	2,214	2,206
Number of respondents	895	854
Response rate	40.4%	38.7%
	z score = 1.175; $p = .121$	

Note. An additional 7 respondents removed their identification numbers, obscuring whether they were part of the experimental or the control group.

Data Entry

To ensure the highest quality data reasonably possible, each of the 1,756 completed surveys was checked, and erroneous responses were corrected or deleted by the ASHA staff member with primary responsibility for the project. The forms were then sent to an outside firm for two-pass (key and verify) data entry. This process was completed by December 21.



Nonresponse

Not only is it typically the case that some individuals who receive a survey do not complete it (unit nonresponse), but it is likewise true that some who return their surveys do not answer every question (item nonresponse) and thus do not qualify for inclusion in portions of a report. They may be excluded from analyses because they did not answer a question at all or because their answer disqualified them (such as stating that they were employed part time when a particular analysis was limited to full-time employees). For example, among the 1,756 audiologists who responded, only 1,643 were included in the analysis of primary employment facility (see Figure 1) because they were the only respondents who indicated that they had ASHA certification in audiology (CCC-A), were employed either full time or part time, and identified the type of facility where they were employed. Comparable restrictions apply to other analyses in the report.

As is our practice, we did not report data for cells with fewer than 25 respondents. This both protects respondent confidentiality and increases data stability. Note, too, that some percentages total 99% or 101% because of rounding.

**Respondents
Versus
Population**

As a rule of thumb, the closer a sample approximates the characteristics of the population from which it is drawn – and which it is designed to represent – the greater the external validity or ability to generalize to that population. The population for this survey consisted of ASHA-certified audiologists whose primary employment facility was a college/university, hospital, audiology franchise/retail chain, nonresidential health care facility, or industry. Below are comparisons of characteristics of the survey respondents with the database population from which they came.

Facility

- Small groups (such as colleges/universities) were oversampled to ensure sufficient respondents from that facility for reporting purposes. Likewise, large groups (such as hospitals) were undersampled. Therefore, where totals are reported, either in text or tables, they have been weighted to reflect the distribution of ASHA-certified audiologists in each type of facility. The number of respondents (*n*) shown in figures and tables is the weighted number who responded to the question.
- Because of stratification, comparing the distribution of the sample's facility to that of the population's would not be worthwhile and was not performed.

Employment Status (Full Time and Part Time)

- Sample: 78% full time, 22% part time
- Population: 81% full time, 18% part time

Function

- Sample: 81% clinical service provider; 6% faculty; 6% administrator; 2% researcher; 2% consultant; < 1% other; 4% sales, training, and technical support
- Population: 81% clinical service provider, 5% faculty, 7% administrator, 2% researcher, 1% consultant, 4% other

Highest Degree

- Sample: 25% master's, 66% AuD, 8% PhD, < 1% other doctorate, 2% multiple doctorates
- Population: 46% master's, 48% AuD, 6% PhD, 1% other doctorate

State

- Sample: 22% Northeast, 30% Midwest, 32% South, 16% West
- Population: 21% Northeast, 26% Midwest, 36% South, 18% West

Sex

- Sample: 84% female, 16% male
- Population: 85% female, 15% male

Age

- Sample median age: 47 years
- Population median age: 46 years

Years of experience, salary basis, and population setting are variables that are available only for the sample, so those comparisons cannot be made.

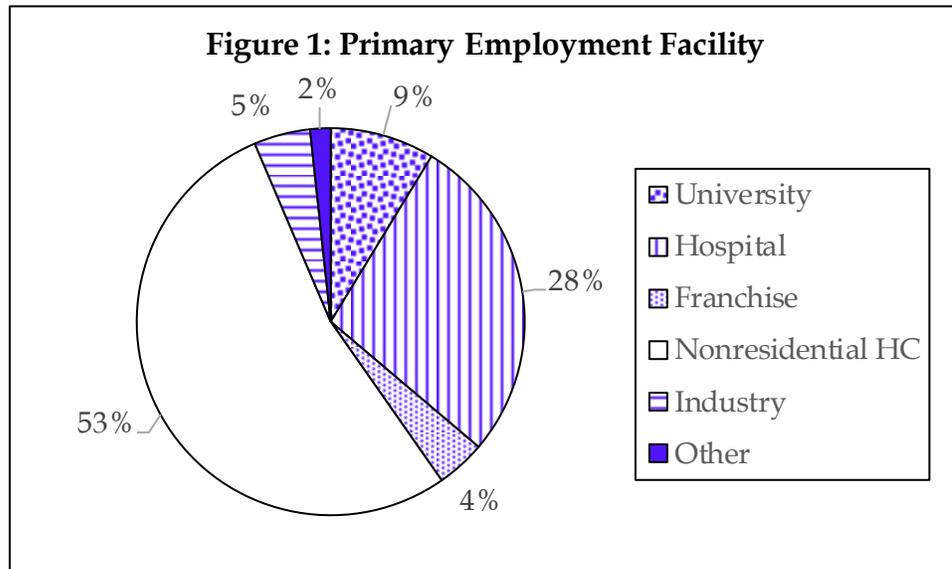
In conclusion, there was virtually no difference between the sample and the population from which it was drawn with regard to employment status, function, state, sex, and age.

However, the respondents reported fewer master's and more AuD degrees as highest degrees than did the population from which they were drawn. This may be because of a recent influx of audiologists attaining AuD degrees. The Council on Academic Accreditation in Audiology and Speech-Language Pathology stopped accrediting master's programs in audiology several years ago. At the same time, a number of academic institutions offered AuD degrees via distance learning to practicing audiologists. As a result, the number of ASHA-certified audiologists with an AuD degree increased, as is reflected by the survey's demographics. However, if members have not informed ASHA that they received an AuD degree, their membership records would still indicate a master's as the highest degree earned, and any apparent disparity could be due to recordkeeping rather than to actual differences in degrees attained.

Demographics

Slightly more than half of the respondents who were employed either full time or part time worked in nonresidential health care facilities, and more than one quarter worked in hospitals (see Figure 1).

Primary Employment Facility



Note. $n = 1,643$. HC = health care.

Excluding “Other”

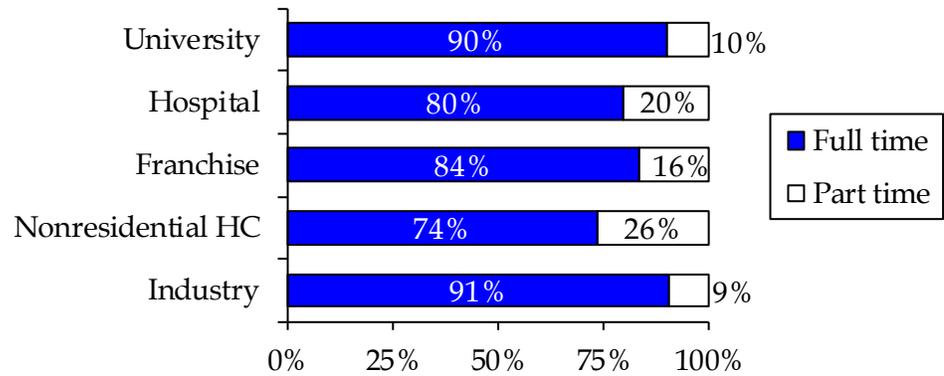
The 29 individuals who worked in an *other* type of facility, either full time or part time, have been included in the ASHA 2018 Audiology Survey Reports only where *totals* are reported – not as a separate category of facility – because of the ambiguous nature of this small group of individuals. Also included in the *total* is the group of five respondents who were employed full time or part time but who did not answer the question about the type of facility in which they were employed.

Employment Status

Nearly three-fourths (74%) of the respondents were employed full time, and 21% were employed part time. The rest were not currently employed.

A closer look at the audiologists who were employed shows that full-time and part-time status varied significantly by the type of facility where they worked. Part-time audiologists were more likely to be found working in nonresidential health care facilities or hospitals than in other types of facilities ($p = .000$; see Figure 2).

Figure 2: Employment Status



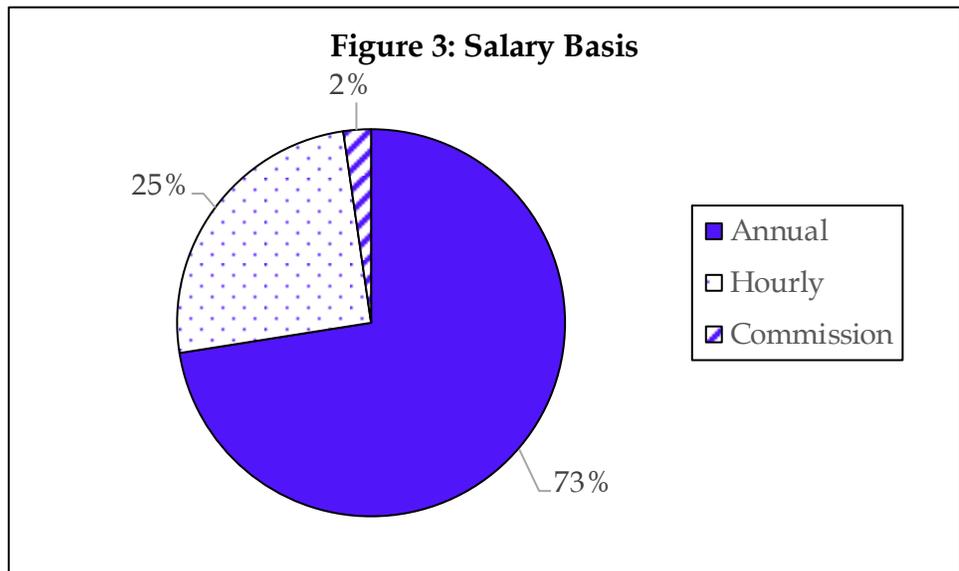
Note. *n* = 1,615.



Salary Basis

Nearly three-fourths of the audiologists reported receiving primarily an annual salary (see Figure 3).

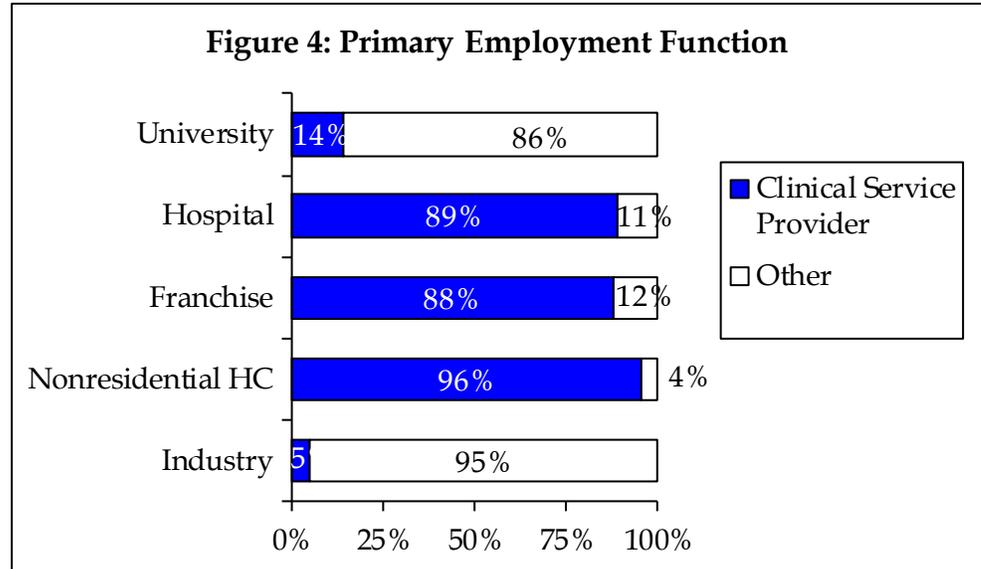
Figure 3: Salary Basis



Note. *n* = 1,620.

Primary Employment Function

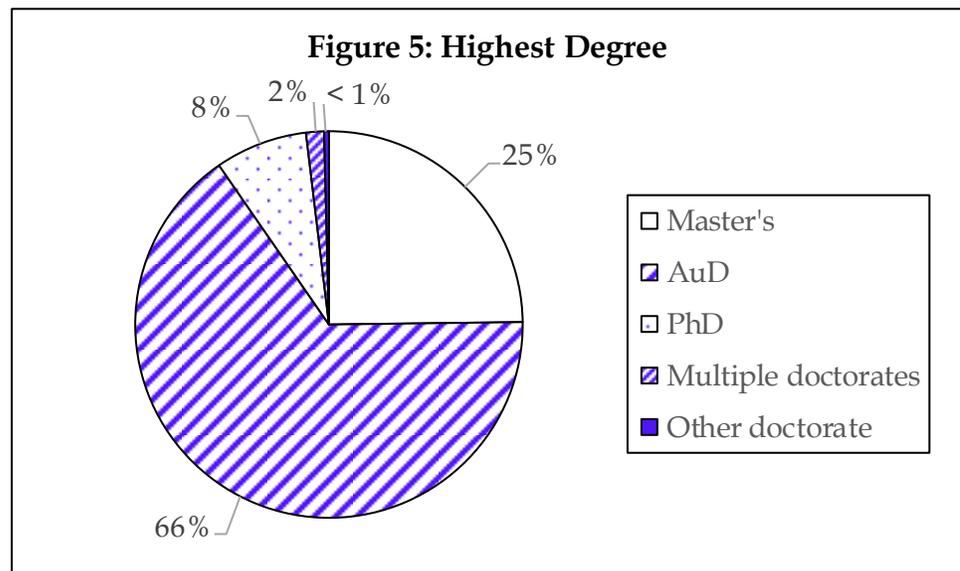
The vast majority of respondents who were employed full time or part time were clinical service providers (81%). Clinicians were more likely to be employed in hospitals, franchises and retail chains, and nonresidential health care facilities than in colleges and universities or industry ($p = .000$; see Figure 4).



Note. $n = 1,601$.

Highest Degree

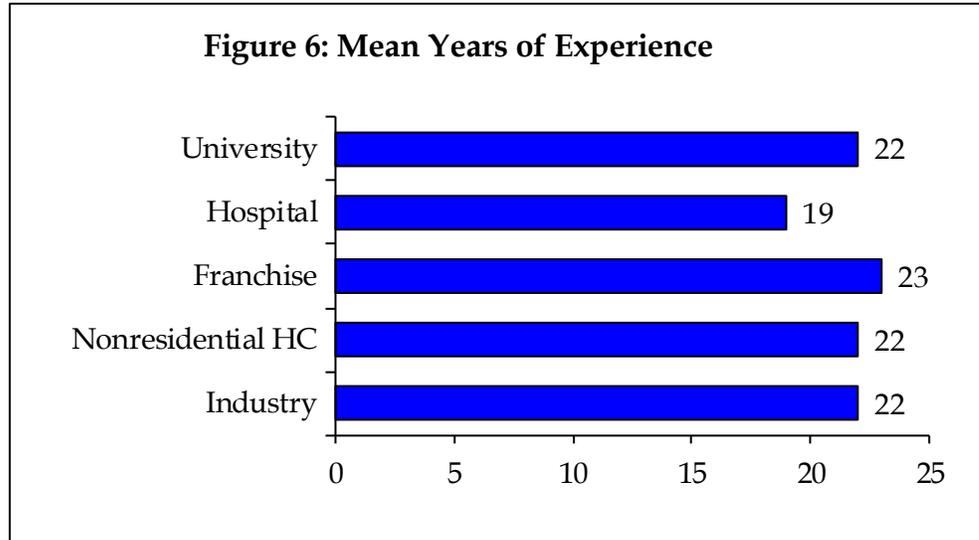
One quarter of the respondents held a master's as the highest degree. Recipients of doctoral degrees included 66% who held only an AuD degree, 8% who held only a PhD, 2% who held multiple doctorates, and fewer than 1% who held an *other* doctorate (see Figure 5).



Note. $n = 1,756$.

Years of Experience

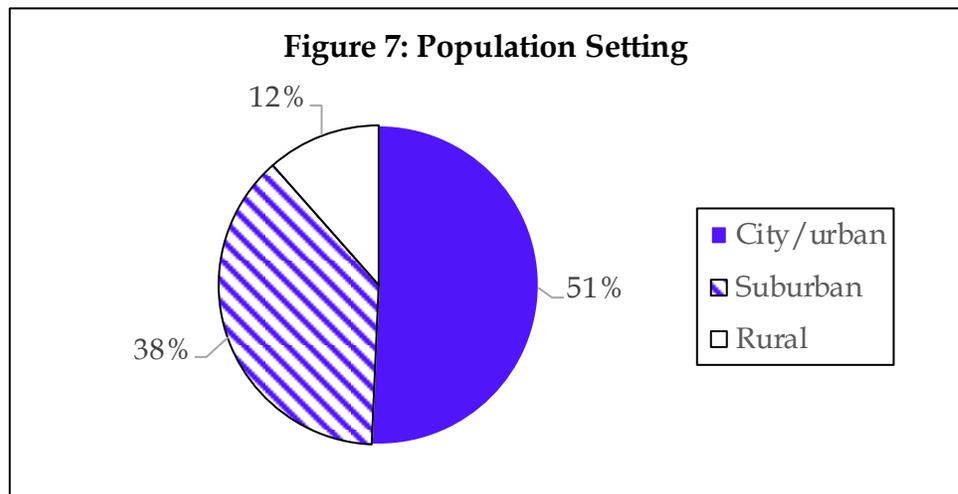
The median number of years of experience was 20. It was lowest in hospitals (18 years) and highest in audiology franchises and retail chains and in industry (22 years; median numbers are not shown in any figure). The mean number of years of experience was 21 and varied by type of facility ($p = .015$; see Figure 6).



Note. $n = 1,615$.

Population Setting

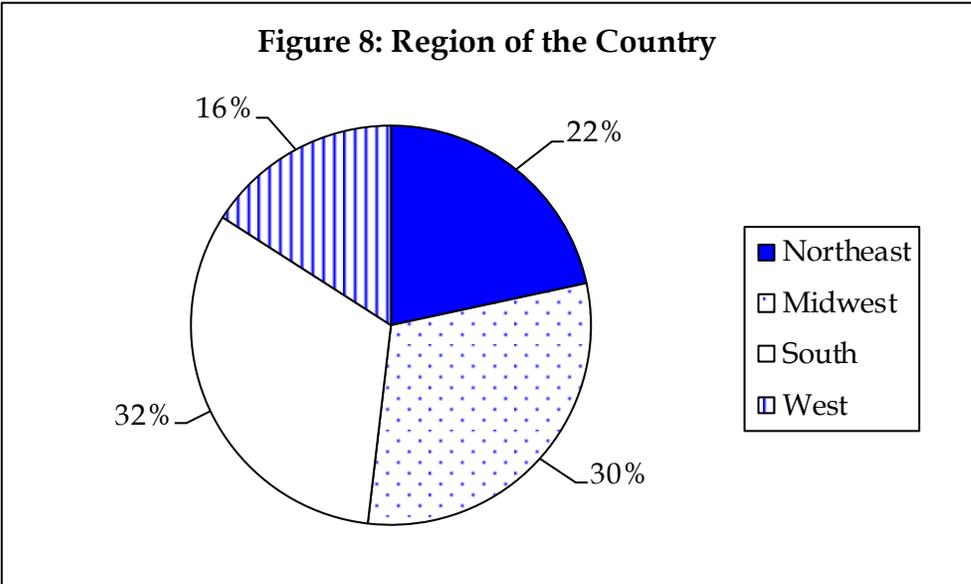
Half of the audiologists who were employed either full time or part time worked in a city/urban area (see Figure 7). Those employed in hospitals were more likely to work in city/urban areas (68%) than were audiologists in other facilities. Audiologists who worked in nonresidential health care facilities (46%) and audiology franchises and retail chains (45%) were more likely to be employed in suburban areas than were audiologists in other types of facilities ($p = .000$; not shown in any figure).



Note. $n = 1,628$.

Region of the Country

Overall, more of the audiologists who completed the survey worked in the South and Midwest than in other regions of the country (see Figure 8).



Note. *n* = 1,641.

Northeast: CT, MA, ME, NH, NJ, NY, PA, RI, VT

Midwest: IA, IL, IN, KS, MI, MN, MO, ND, NE, OH, SD, WI

South: AL, AR, DC, DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV

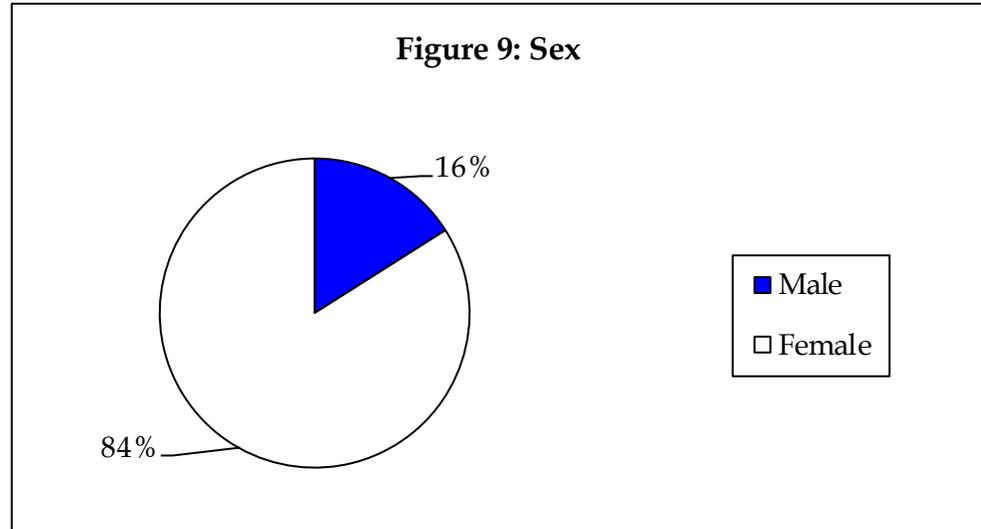
West: AK, AZ, CA, CO, HI, ID, MT, NV, NM, OR, UT, WA, WY

The type of facility in which they worked was related to the region of the country where audiologists were employed ($p = .006$; not shown in any figure).

- More of the audiologists who worked in hospitals (33%) and in industry (36%) worked in the Midwest than in other regions.
- More of the audiologists who worked in colleges and universities (30%), audiology franchises and retail chains (37%), and in nonresidential health care facilities (35%) worked in the South than in other regions.

Sex

Nearly one sixth of the survey respondents were male (see Figure 9). Men represented a higher percentage of audiologists in colleges and universities (27%) and in audiology franchises and retail chains (23%) than in hospitals (16%), nonresidential health care facilities (15%) or industry (13%; $p = .003$; not shown in any figure).



Note. $n = 1,756$.

Glossary

Terms used in the *ASHA 2018 Audiology Survey Reports*:

Types of Facilities

College/university

- Hospital:
- General medical hospital
 - Pediatric hospital
 - Military hospital
 - VA hospital/medical center
 - Any other hospital

Audiology franchise or retail chain

- Nonresidential health care facility:
- Home health agency or client's home
 - Private physician's office
 - Audiologist's or SLP's office
 - Speech and hearing center or clinic
 - Outpatient rehabilitation center
 - Any other nonresidential facility

- Industry:
- Hearing aid manufacturing
 - Hearing conservation

Stratified
Random
Sample

A stratified random sample was used to select 4,500 ASHA-certified audiologists for this survey from a population of 8,293 audiologists. They were stratified on the basis of type of facility and private practice. A random sample is a probabilistic sample in which each person has an equal chance of being selected. This is a requirement for generalizing responses from a sample to the broader population from which the members were selected.

Response Rate

The response rate was calculated using the following equation:

$$RR = \frac{(C + P)}{S - (Ret + I)}$$

where

- RR = Response rate
- C = Number of completed surveys
- P = Number of partial surveys
- S = Sample size
- Ret = Number ineligible because of retirement
- I = Number ineligible for other reasons (e.g., does not work in a school, no longer in the field, or on leave of absence)

$$RR = \frac{1,756}{4,500 - (9 + 71)} = 39.7\%$$

Types of
Averages

Mean: Add the total of all the values and divide by *n* (the number of items).

Median: Arrange the values in order, from lowest to highest. Select the value in the middle position.

Mode: This is the value that occurs more often than any other value.

Example: Sample data set

1, 1, 7, 34, 88

Mean: $(1 + 1 + 7 + 34 + 88) / 5 = 26.2$

Median: 7

Mode: 1

Median statistics are more stable and less sensitive to extreme values than are means.

Audiology Survey Reports

Results from the *ASHA 2018 Audiology Survey* are shared in a series of reports:

- Annual Salaries
- Hourly Wages
- Clinical Focus Patterns
- Private Practice
- Survey Summary
- Survey Methodology, Respondent Demographics, and Glossary

Suggested Citation

American Speech-Language-Hearing Association. (2019). *2018 Audiology Survey report: Survey methodology, respondent demographics, and glossary*. Available from www.asha.org.

Resources

Agresti, A., & Finlay, B. (1986). *Statistical methods for the social sciences* (2nd ed.). San Francisco, CA: Dellen.

Dillman, D. A. (2000). *Mail and Internet surveys: The tailored design method* (2nd ed.). New York, NY: Wiley.

Electronic Copy

An electronic copy of this report will be available on the ASHA website at www.asha.org/research/memberdata/AudiologySurvey.htm.

Thank You

ASHA would like to thank the audiologists who received the *ASHA 2018 Audiology Survey* and completed it. Reports like this one are only possible because people like *you* participated. If you find this information valuable, please accept the invitation to participate in other ASHA-sponsored surveys and focus groups. You are the experts, and we rely on you to provide data to share with your fellow members.

Additional Information

For additional information regarding the *ASHA 2018 Audiology Survey*, please contact ASHA's audiology practices unit at audiology@asha.org. To learn more about how the Association is working on behalf of ASHA-certified audiologists, visit ASHA's website at www.asha.org/aud/.