



AUDIOLOGY SURVEY 2004



Survey Methodology, Respondent Demographics, and Glossary

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Table of Contents

Executive Summary	1
Survey Methodology	2
Sample Design	2
Response Rate	2
Experimental Design	2
Data Entry	3
Demographics	3
The Others	3
Primary Employment Facility	4
Primary Employment Function	4
Salary Basis	5
Highest Degree	6
Years of Experience	6
Population Density	7
Geographic Distribution	7
Sex	8
Age	8
Ethnicity and Race	9
Glossary	9
Types of Facilities	10
Random Sample	10
Response Rate	10
Types of Averages	10
Regions of the Country	11
Other Reports	12
Suggested Citation	12
Supplemental Sources	12
Additional Information	12
Appendix: Data Tables	13
Table 1: Primary Employment Facility	14
Table 2: Primary Employment Function	15
Table 3: Salary Basis	15

Table 4: Highest Degree in the Professions16
Table 5: Years of Experience16
Table 6: Population Density17
Table 7: Geographic Region.....17
Table 8: Sex.....18
Table 9: Age.....18
Table 10: Ethnicity and Race.....19

List of Figures

Figure 1: Primary Employment Facility4
Figure 2: Percentage of Individuals Providing Clinical Service by Facility5
Figure 3: Salary Basis by Facility5
Figure 4: Highest Degree in the Profession by Facility6
Figure 5: Average Years Experience by Facility6
Figure 6: Population Density by Facility7
Figure 7: Geographic Region by Facility7
Figure 8: Sex by Facility8
Figure 9: Age by Facility8
Figure 10: Percentage of Minorities by Facility9

List of Tables

Table 1: Calculation of Response Rate2

Executive Summary

During the fall and winter of 2004 the American Speech-Language-Hearing Association (ASHA) conducted a survey of audiologists. This survey was designed to provide information about issues important to our members and the profession of audiology and to update and expand upon information gathered during previous Omnibus and Audiology Surveys. The results are presented in a series of reports.

Overall Findings:

- ◆ Response rate = 51.6%
- ◆ 40.4% were employed in nonresidential health care facilities
- ◆ 85.9% were employed as clinical service providers
- ◆ 98.4% worked full or part time
- ◆ 24.7% possessed a doctoral degree (AuD or PhD)
- ◆ Average experience: 16.5 years
- ◆ 47.3% of respondents were employed in a metropolitan/urban area
- ◆ In all employment settings, there were more audiologists in the South and the Midwest than in other regions
- ◆ Average age: 42

Survey Methodology

- ◆ Sample Design
- ◆ Response Rate
- ◆ Experimental Design
- ◆ Data Entry

Demographics

- ◆ The Others
- ◆ Primary Employment Facility
- ◆ Primary Employment Function
- ◆ Salary Basis
- ◆ Highest Degree
- ◆ Years of Experience
- ◆ Population Density
- ◆ Geographic Distribution
- ◆ Sex
- ◆ Age
- ◆ Ethnicity and Race

Glossary

Other Reports

Suggested Citation

Supplemental Sources

Additional Information

Appendix: Data Tables

Survey Methodology

Sample Design

The survey was mailed on September 29, 2004, to a random sample of 4,000 ASHA-certified audiologists living in the United States. Individuals who returned their surveys were removed from second (October 28) and third (December 8) mailings. Each 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. Metered postage was at the full, first-class rate.

Response Rate

Of the original 4,000 audiologists in the sample, 44 were ineligible. The number of respondents was 2,041, resulting in a 51.6% response rate. Table 1 presents an in-depth look at how the response rate was calculated.

Experimental Design

A methodological experiment was designed into the survey to test whether the color of the ink on the survey would have an effect on response rate. Half of the sample received a survey printed on ivory paper with black ink and half received one printed on ivory paper in purple ink. All surveys had 40 questions on 25.5" x 11" paper folded to 8.5" x 11" and printed two columns per page. Font was Arial 10. The sixth page contained two tables used to answer survey questions, a message about the survey, and a message about where to find reports from previous surveys. Table 1 shows that ink color had a negligible effect on response rates.

Table 1. Calculation of Response Rate

Disposition	Black Ink	Purple Ink	Total
A. Original (gross) sample size	2,000	2,000	4,000
B. No longer employed in the field	9	8	17
C. Ineligible for other reasons (including retirement)	14	13	27
D. Net sample size = A - (B + C)	1,977	1,979	3,956
E. Number of respondents	1,018	1,023	2,041
Response rate = E / D	51.5%	51.7%	51.6%

Data Entry

In order to ensure the highest quality data reasonably possible, each of the 2,041 completed surveys was checked, and erroneous responses were corrected or deleted by the ASHA staff member with primary responsibility for the survey. The forms were then sent to an outside firm for two-pass (key and verify) data entry. This process was completed by mid-January 2005.

**Demo-
graphics**

Not only is it typically the case that some individuals who receive a survey do not complete it (unit nonresponse), it is likewise true that some who return theirs do not answer every question (item nonresponse) and thus do not qualify for inclusion in portions of a report. They may be excluded 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 2,041 respondents, only 1,912 were included in much of the reporting because they indicated that they were employed full time or part time.

As is our practice, to preserve anonymity, we do not report data for cells with fewer than 25 respondents.

The Others

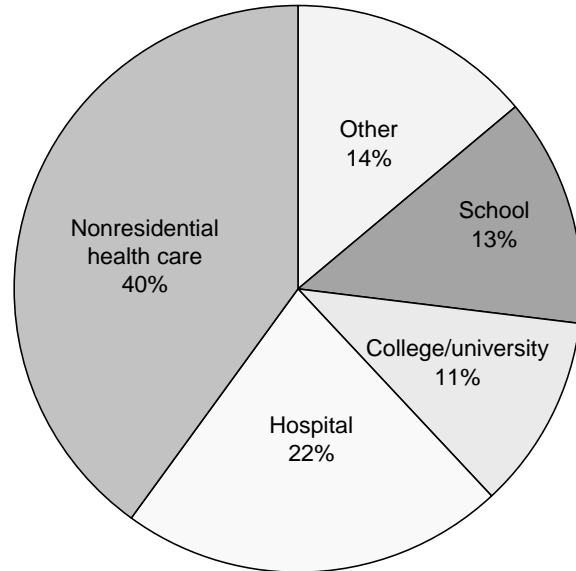
When asked to identify their primary employment facility, 254 individuals chose one of several groups that by themselves were too small for analysis. These facilities included those working in industry ($n = 73$), health agencies ($n = 42$), education agencies ($n = 29$), research/scientific organizations ($n = 16$), and “any other facility” with a write-in response ($n = 94$).

Because of the size of these groups, they have been combined into one “other” category. Because of the ambiguous nature of this “other” group, these individuals have been included in the 2004 Audiology Reports only as part of the totals, not as a separate category of facility.

**Primary
Employment
Facility**

The greatest numbers of individuals (40%) were employed in a nonresidential health care facility (Figure 1) (Appendix, Table 1).

Figure 1. Primary Employment Facility

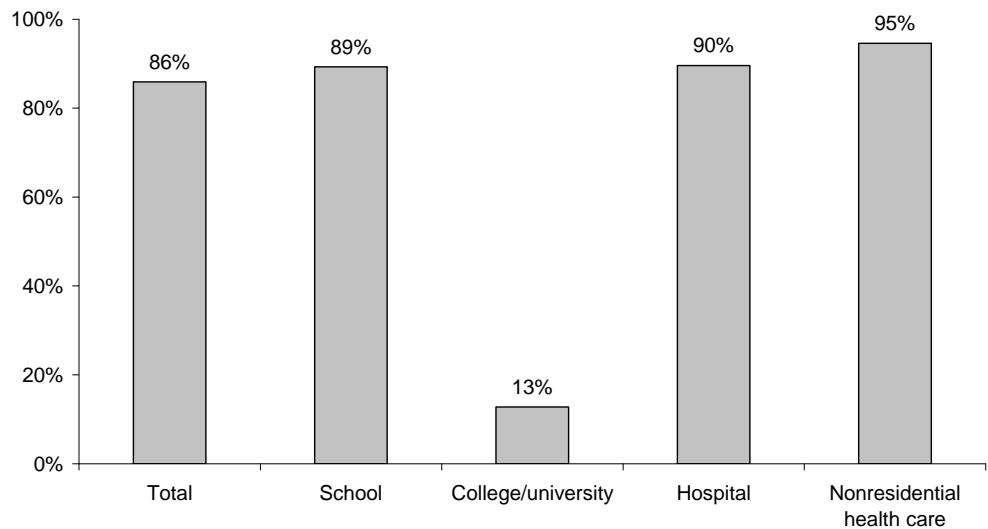


**Primary
Employment
Function**

Aside from those working in a college or university setting, respondents were most likely to identify themselves as clinical service providers (Figure 2). As one might expect, the majority (73%) of those working for a college or university identified themselves as educators (Appendix, Table 2).



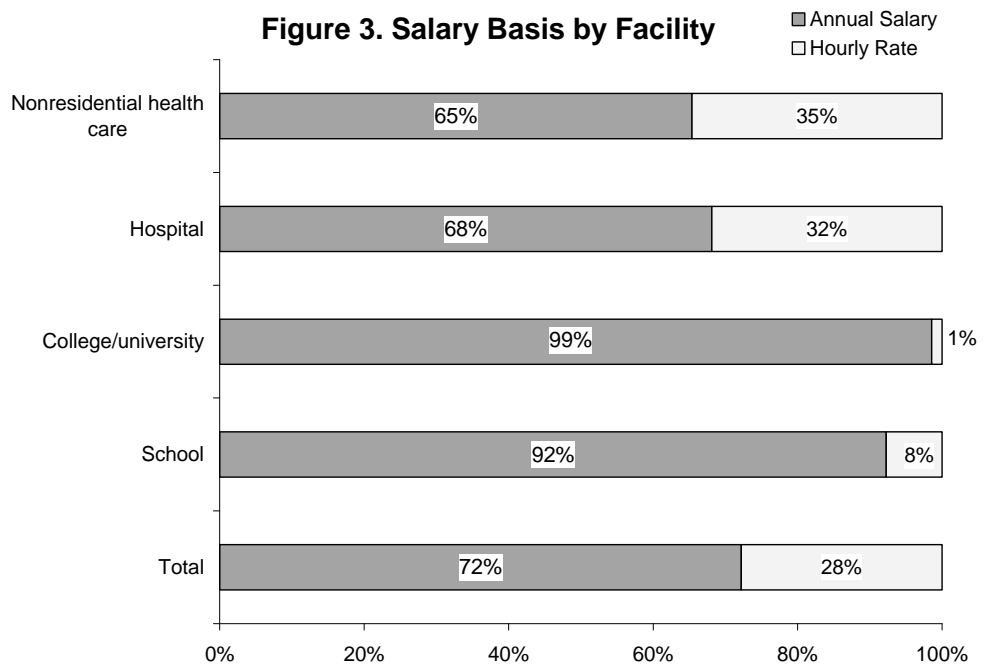
Figure 2. Percentage of Individuals Providing Clinical Service by Facility



Salary Basis

Seventy-two percent of audiologists surveyed worked for an annual salary (Appendix, Table 3). Individuals working in hospitals and nonresidential health care facilities were more likely than those in other settings to be paid an hourly wage (Figure 3).

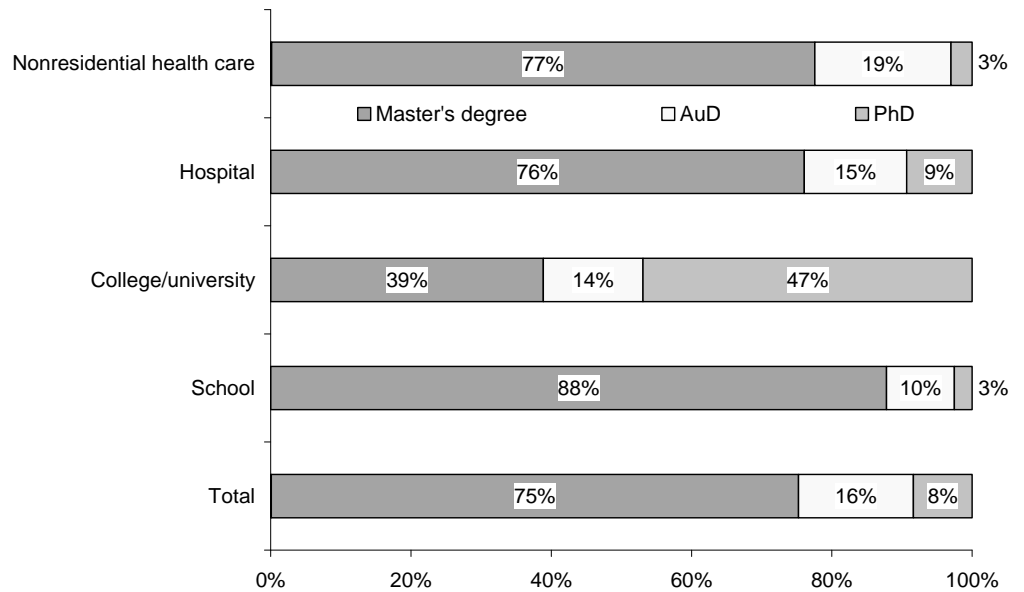
Figure 3. Salary Basis by Facility



Highest Degree

With the exception of college and university settings where a PhD was most commonly the highest degree (47%), between 76% and 88% of audiologists held a master's degree as their highest degree in the professions (Figure 4) (Appendix, Table 4).

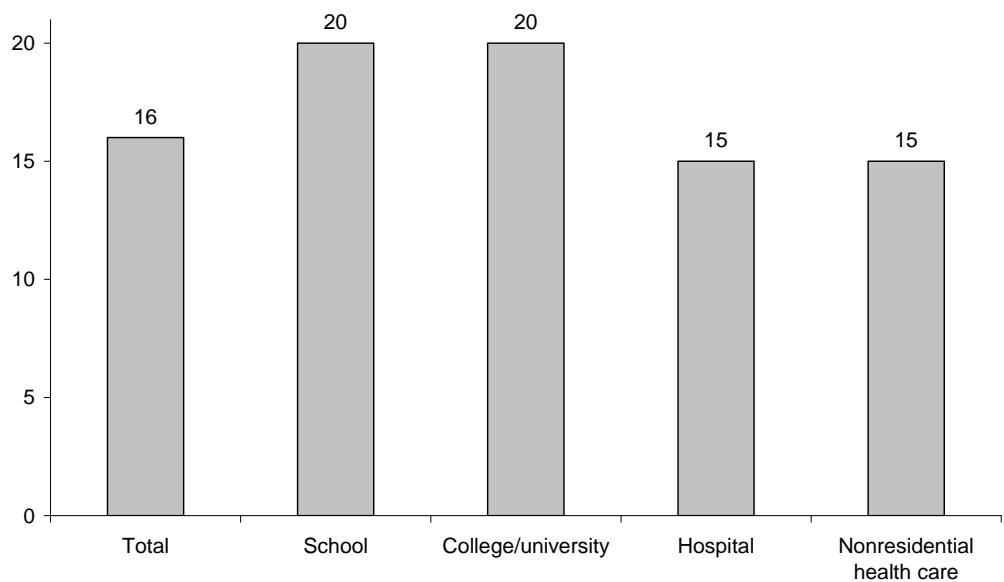
Figure 4. Highest Degree in the Profession by Facility



Years of Experience

Audiologists' average (median) years of experience ranged from 15 years in hospitals and nonresidential health care facilities to 20 years in educational facilities. Across all facilities, the average was 16 years (Figure 5) (Appendix, Table 5).

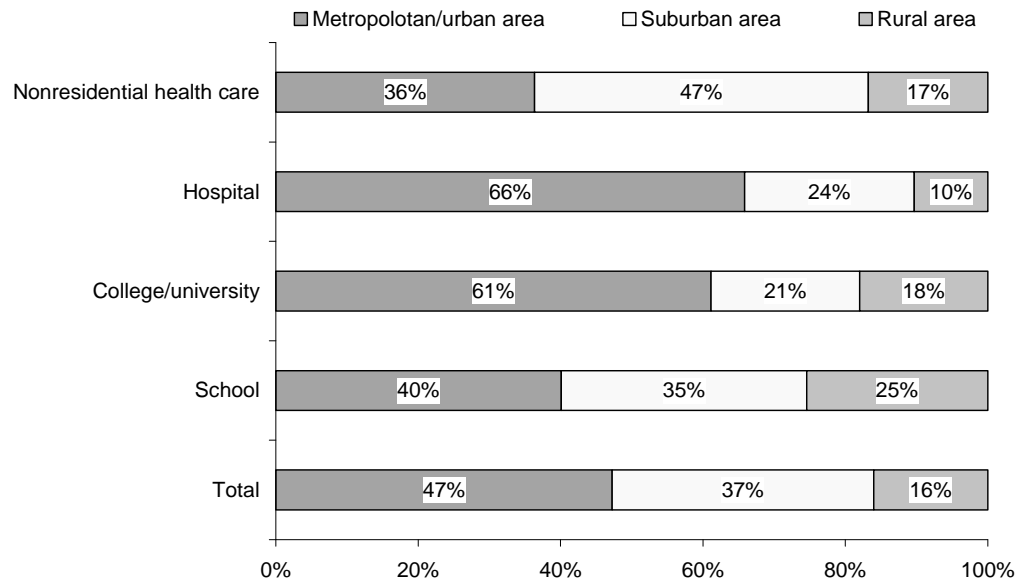
Figure 5. Median Years of Experience by Facility



Population Density

Across facilities, respondents were most likely to work in a metropolitan or urban area. However, in nonresidential health care audiologists were more likely to work in the suburbs. Rural audiologists ranged from 10% in hospital settings to 25% in schools (Figure 6) (Appendix, Table 6).

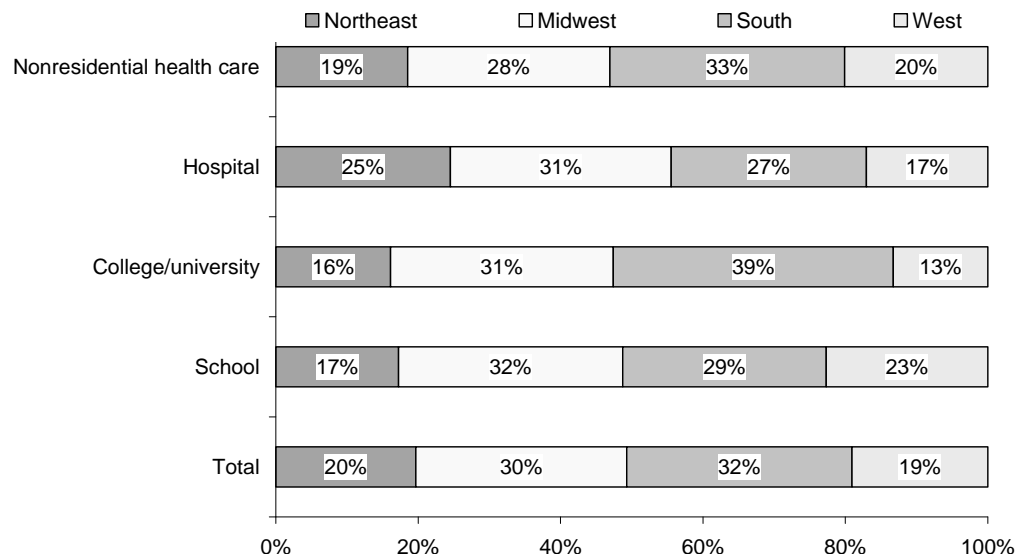
Figure 6. Population Density by Facility



Geographic Distribution

Audiologists in a college or university setting were most likely to work in the South (39%). Across all settings, audiologists were least likely to work in either the Northeast or the West (Figure 7) (Appendix, Table 7).

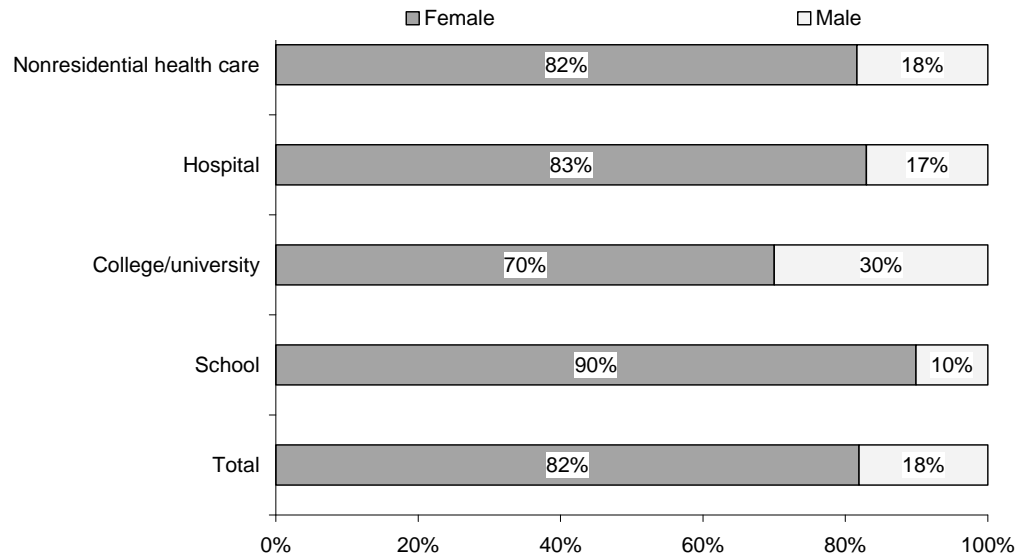
Figure 7. Geographic Region by Facility



Sex

In college and university settings audiologist were most likely to be male (30%); in school settings, audiologist were most likely to be female (90%). Across all facilities, 82% of audiologists were female (Figure 8) (Appendix, Table 8).

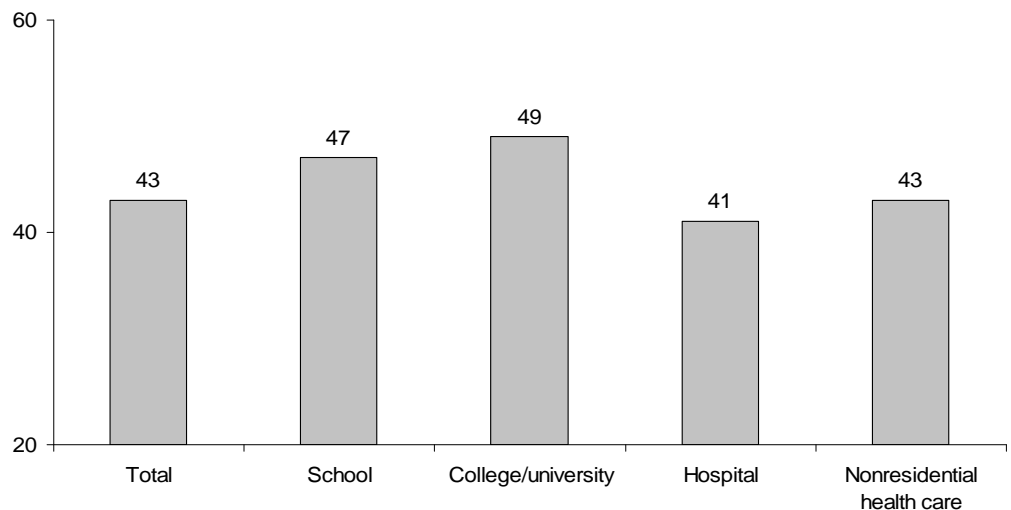
Figure 8. Sex by Facility



Age

The median age of the audiologists who participated in the survey was highest in college and university settings (49) and lowest in hospitals (41). There was a 22 year range in the modes between facilities (30-52) (Figure 9) (Appendix, Table 9).

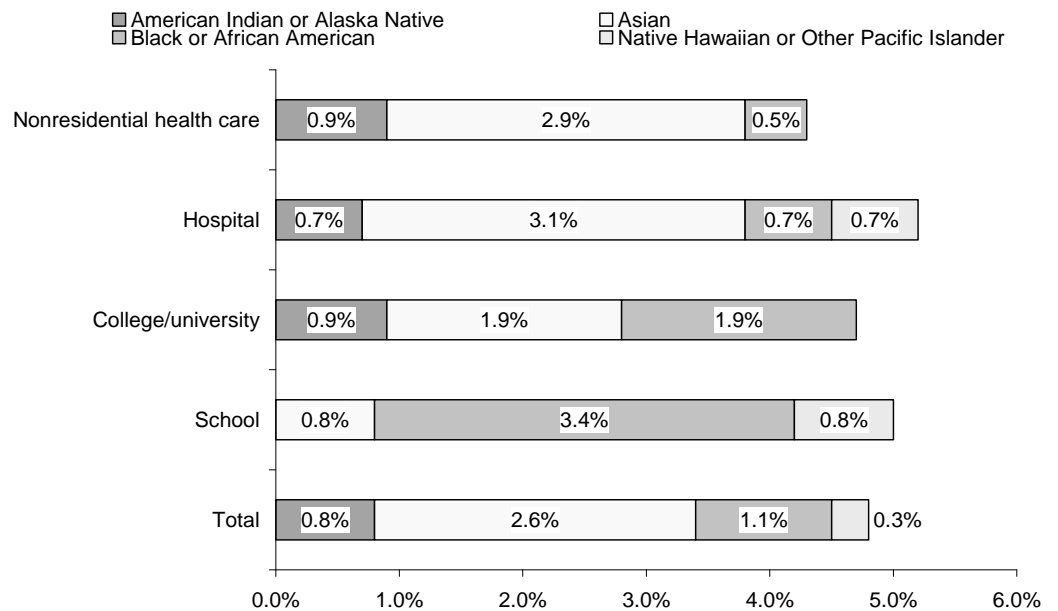
Figure 9. Median Age by Facility



Ethnicity and Race

The overall percentage of Hispanics/Latinos among the audiologists chosen to participate was less than 2%, although it did increase to nearly 3% in colleges, universities, and hospitals (Appendix, Table 10).

Figure 10. Percentage of Minorities by Facility



While the percentage of white audiologists held relatively steady across facilities (93.7–95.0%), the racial makeup of the minority population varied significantly. Black or African American audiologists made up 3.4% of those in schools but only 0.5% of those employed in nonresidential health care.

Glossary

A glossary of terms used in the 2004 Audiology Survey Reports is included.

Types of Facilities

Respondents were given the opportunity to self-identify their primary employment facility from a 28 item list comprising the following categories:

- Facility: School
- College/university
- Hospital facility
- Residential health care
- Nonresidential health care facility
- Industry
- Agency, organization, research facility
- Any other facility (Specify)

Random Sample

Response Rate

A sample of 4,000 ASHA-certified audiologists was randomly selected to participate in this survey. 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 they were selected.

The response rate was calculated using the following equation:

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

where RR = response rate,
 C = number of completed surveys,
 S = sample size,
 NIF = ineligible because not in field, and
 I = ineligible for other reasons (e.g., retirement, on leave of absence).

$$RR = \frac{2,041}{4,000 - (17 + 27)} = 51.6\%$$

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:** 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

The statistic that is reported as the “average” in the 2004 Audiology Survey is the median (middle) statistic unless otherwise noted. Median statistics are presented because they are more stable and less sensitive to extreme values than are means.

Regions of the Country

Northeast

- ◆ Middle Atlantic
 - New Jersey
 - New York
 - Pennsylvania
- ◆ New England
 - Connecticut
 - Maine
 - Massachusetts
 - New Hampshire
 - Rhode Island
 - Vermont

South

- ◆ East South Central
 - Alabama
 - Kentucky
 - Mississippi
 - Tennessee
- ◆ South Atlantic
 - Delaware
 - District of Columbia
 - Florida
 - Georgia
 - Maryland
 - North Carolina
 - South Carolina
 - Virginia
 - West Virginia
- ◆ West South Central
 - Arkansas
 - Louisiana
 - Oklahoma
 - Texas

Midwest

- ◆ East North Central
 - Illinois
 - Indiana
 - Michigan
 - Ohio
 - Wisconsin
- ◆ West North Central
 - Iowa
 - Kansas
 - Minnesota
 - Missouri
 - Nebraska
 - North Dakota
 - South Dakota

West

- ◆ Mountain
 - Arizona
 - Colorado
 - Idaho
 - Montana
 - Nevada
 - New Mexico
 - Utah
 - Wyoming
- ◆ Pacific
 - Alaska
 - California
 - Hawaii
 - Oregon
 - Washington

Other Reports

The results of the 2004 Audiology Survey are presented in a series of reports:

- Survey Methodology, Respondent Demographics, and Glossary
- Practice Trends
- Salaries
- Private Practice Salaries
- Workforce
- Frequencies Responses

Suggested Citation

American Speech-Language-Hearing Association. (2004). *2004 Audiology Survey Report: Survey methodology, respondent demographics, and glossary*. Rockville, MD: Author.

Supplemental Sources

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

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

Additional Information

For additional information regarding the 2004 Audiology Survey, please contact Pam Mason, Director of Audiology Professional Practices, extension 4135 (pmason@asha.org). To learn more about how the Association is working on behalf of audiologists, visit ASHA's Web site at <http://www.asha.org/members/aud/default>

Appendix: Data Tables

Table 1: Primary Employment Facility

Primary Employment Facility. Review the list in Table 1 at the end of this survey, and then, in the space below, write the number of the primary facility that best describes the one in which you work most of the time in your typical week. (For individuals engaged in private practice, indicate the type of facility in which you deliver most of your services.)

- Working full or part time
- Since the “Total” category is calculated using weights based on facility, only values for individual facilities are shown.

	Schools	Colleges & Universities	Hospitals	Nonresidential Health Care Facilities	Total
Unweighted	12.5	11.3	22.3	40.4	(n = 1,878)
Weighted	10.4	8.2	26.1	51.9	(n = 1,840)

Table 2: Primary Employment Function

Primary Employment Function. Review the list in Table 2 at the end of this survey, and then, in the space below, write the number of the one position that best describes how you spent most of your time in your typical week.

- Working full or part time

	Schools (n = 215)	Colleges & Universities (n = 188)	Hospitals (n = 395)	Nonresidential Health Care Facilities (n = 739)	Total (n = 1,733)
Clinical service provider	89.3	12.8	89.6	94.6	85.9
Educator	5.1	72.9	0.5	0.4	6.6
Administrator	0.9	3.2	1.0	2.3	2.3
Chair	2.3	4.8	0.3	0.1	0.8
Supervisor	2.3	6.4	8.6	2.6	4.4

Table 3: Salary Basis

In your primary job, are you paid on an annual or hourly basis?

- Working full or part time

	Schools (n = 233)	Colleges & Universities (n = 209)	Hospitals (n = 414)	Nonresidential Health Care Facilities (n = 731)	Total (n = 1,803)
Annual salary	92.3	98.6	68.1	65.4	72.2
Hourly salary	7.7	1.4	31.9	34.6	27.8

Table 4: Highest Degree in the Professions

Check the appropriate boxes to identify degrees you have earned both

(a) **in the professions** – that is, in audiology; speech-language pathology; or speech, language, hearing science—and

(b) **outside these fields.**

(Check all that apply but count only actual degrees, not equivalencies or certificates and do not include degrees expected but not yet conferred.)

Highest Degree in the Professions	Schools (n = 238)	Colleges & Universities (n = 211)	Hospitals (n = 418)	Nonresidential Health Care Facilities (n = 762)	Total (n = 1,883)
Bachelor's	0.0	0.0	0.0	0.1	0.1
Master's	87.8	38.9	76.1	77.4	75.2
AuD	9.7	14.2	14.6	19.4	16.4
PhD	2.5	46.9	9.3	3.0	8.4

Table 5: Years of Experience

How many years have you been employed in the profession of audiology? (Round to the nearest full year. Enter "0" if you have never been employed as a member of the profession.)

Years of Experience	Schools (n = 237)	Colleges & Universities (n = 212)	Hospitals (n = 419)	Nonresidential Health Care Facilities (n = 761)	Total (n = 1,883)
Mean	18.5	20.3	15.4	16.1	16.5
Median	20.0	20.0	15.0	15.0	16.0
Mode	20.0	30.0	20.0	7.0	20.0
Standard Deviation	8.2	9.6	9.0	9.2	9.2

Table 6: Population Density

Which one of the following best describes where you work?

- Working full or part time

	Schools (n = 232)	Colleges & Universities (n = 211)	Hospitals (n = 416)	Nonresidential Health Care Facilities (n = 751)	Total (n = 1,832)
Metropolitan/urban area	40.1	61.1	65.9	36.4	47.3
Suburban area	34.5	20.9	23.8	46.9	36.7
Rural area	25.4	18.0	10.3	16.8	16.0

Table 7: Geographic Region

In what state do you currently reside? (Use standard post office two-letter code, e.g., MD for Maryland.)

Geographic Division and Region	Schools (n = 238)	Colleges & Universities (n = 211)	Hospitals (n = 416)	Nonresidential Health Care Facilities (n = 761)	Total (n = 1,879)
Northeast	17.2	16.1	24.5	18.5	19.7
Midwest	31.5	31.3	31.0	28.4	29.6
South	28.6	39.3	27.4	33.0	31.6
West	22.7	13.3	17.1	20.1	19.1

Table 8: Sex

What is your sex?

	Schools (n = 238)	Colleges & Universities (n = 210)	Hospitals (n = 416)	Nonresidential Health Care Facilities (n = 762)	Total (n = 1,880)
Female	89.9	70.0	82.9	81.6	81.9
Male	10.1	30.0	17.1	18.4	18.1

Table 9: Age

In what year were you born?

➤ Average ages shown.

Average Age	Schools (n = 235)	Colleges & Universities (n = 206)	Hospitals (n = 409)	Nonresidential Health Care Facilities (n = 754)	Total (n = 1,856)
Mean	46	47	42	42	43
Median	47	49	41	43	43
Mode	45	52	33*	30	30
Standard Deviation	8.4	9.8	9.8	9.8	9.8

* Multiple modes. Lowest mode shown.

Tables 10 & 11: Ethnicity and Race

The U.S. Census Bureau has made a distinction between “ethnicity” and “race.” We follow the federal guidelines which state that individuals can select one ethnicity but more than one racial heritage. Describe **both** your ethnicity and race.

Which one of the following best describes your ethnicity?

Ethnicity	Schools (n = 236)	Colleges & Universities (n = 209)	Hospitals (n = 415)	Nonresidential Health Care Facilities (n = 744)	Total (n = 1,852)
Hispanic or Latino	2.1	2.9	2.7	0.9	1.7
Not Hispanic or Latino	97.9	97.1	97.3	99.1	98.3

Which of the following best describes your race? (Circle all that apply.)

Race	Schools (n = 238)	Colleges & Universities (n = 213)	Hospitals (n = 420)	Nonresidential Health Care Facilities (n = 763)	Total (n = 1,888)
American Indian or Alaska Native	0.0	0.9	0.7	0.9	0.8
Asian	0.8	1.9	3.1	2.9	2.6
Black or African American	3.4	1.9	0.7	0.5	1.1
Native Hawaiian or Other Pacific Islander	0.8	0.0	0.7	0.0	0.3
White	93.7	93.9	94.5	95.0	94.5