

DEAF PEOPLE AND EMPLOYMENT IN THE UNITED STATES: 2019

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This report was developed under a jointly funded grant through the US Department of Education's Office of Special Education Programs (OSEP) and the Rehabilitation Services Administration (RSA), #HD326D160001. However, the contents do not necessarily represent the positions or policies of the federal government.

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Deaf People and Educational Attainment in the United States: 2019
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INTRODUCTION

Employment is one of many possible outcome measures, but one that is typically used as an indicator for the ability to live independently, attain financial stability, and maintain a quality of life that is aligned with one's goals. To meet national employment goals, federal initiatives, policies, and funding drive employment training, placement, and rehabilitation programs across the country. Despite positive postsecondary enrollment trends and improvements in legal policies surrounding access for deaf people, particularly through the Americans with Disabilities Act, employment gaps between deaf and hearing people continue to be significant. Employment experiences for deaf people are also qualitatively different than for hearing people in the United States in terms of earnings, part-time or full-time employment, opportunities for advancement over time, and the likelihood of being self-employed.

This updated report provides a comprehensive overview of the most current data on employment trends and trajectories for deaf people in the United States, serving as a resource for community members, advocates, educators, researchers, and policy makers. Data from the 2017 American Community Survey (ACS), a national survey conducted by the U.S. Census Bureau, was used in this report. Data from 2017 reflects current trends, while 2008-2017 data was used to explore how employment trends have changed over time. We limited our sample to people aged 25 to 64 years old, or what is typically considered the "working age" population. People who identified

as having any type of hearing loss were included in these analyses. Further information about this dataset and the analyses are shared in the Methods section of this report.

It is necessary to recognize the many intersecting identities of deaf people when thinking about employment experiences and outcomes.

Key findings:

- 53% of deaf people were employed in 2017.
- Deaf people are actively looking for work to a greater extent than hearing people.
- A large percentage of deaf people are not in the labor force.
- Deaf people who are employed full time report median earnings that are comparable to hearing people.
- Employment rates for deaf people have not increased from 2008 to 2017.
- Educational attainment appears to narrow employment gaps.
- Deafdisabled people are most likely to experience pay inequality and underemployment.

In this report, the term deaf is used in an all-inclusive manner, to include people who may identify as deaf, deafblind, deafdisabled, hard of hearing, late-deafened, and hearing impaired. NDC recognizes that for many people, identity is fluid and can change over time or with setting. NDC has chosen to use one term, deaf, with the goal of recognizing experiences that are shared by people from diverse deaf communities while also honoring their differences.

GENERAL EMPLOYMENT DATA

The employment gap between deaf and hearing people in the United States is a significant area of concern. In 2017, only 53.3% of deaf people were employed, compared to 75.8% of hearing people. This is an employment gap of 22.5%.

A common assumption is that if 53.3% of deaf people are employed, 46.7% of deaf people are unemployed. This is incorrect. The federal government describes people without a job as people who are *unemployed* or *not in the labor force*. People who reported being currently, or recently, looking for work, are counted as *unemployed*. People who are not currently employed, and are not looking for work, are

counted as *not in the labor force*. This latter group may include students, parents, caretakers, or retired people, for example.

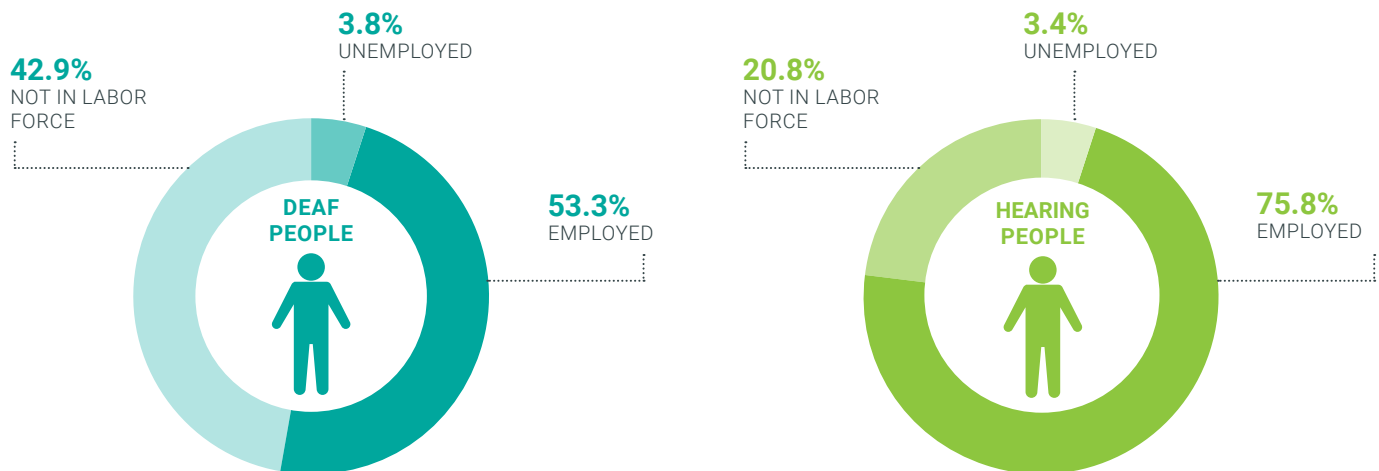
Deaf and hearing people have unemployment rates of 3.8% and 3.4%, respectively. This difference, while small, is statistically significant.

This suggests that deaf people are more likely to be actively looking for work than hearing people.

The largest disparity between deaf and hearing people, however, is that of labor force involvement. A large number of deaf people (42.9%) were not in the labor force, compared to 20.8% of hearing people (Figure 1). We will talk about this group in more detail later on in this report.

Figure 1

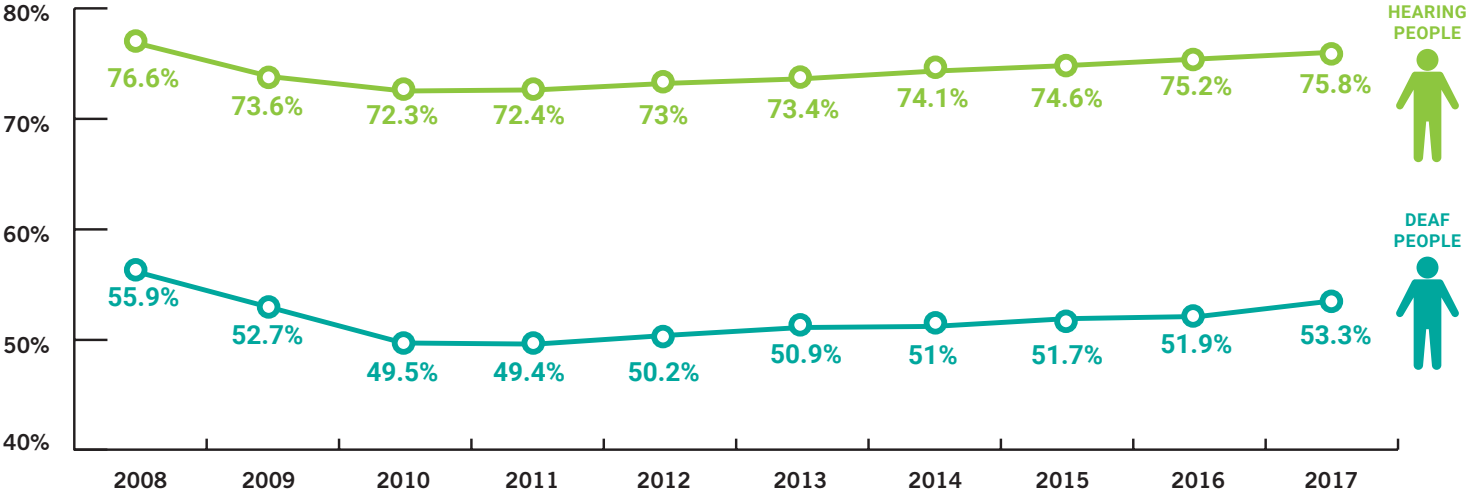
RATES OF UNEMPLOYMENT, EMPLOYMENT, AND NOT IN THE LABOR FORCE



From 2008 to 2017, employment rates have increased by a small, yet significant, amount for hearing people, but did not increase for deaf people (Figure 2). The figure shows employment declines from 2008 to 2010. These declines may be influenced by the economic recession in the United States

occurring at that time. Greater growth in employment rates for deaf people is needed in order to narrow the employment gap between deaf and hearing people, and this is not happening yet.

Figure 2
EMPLOYMENT RATES FROM 2008 TO 2017



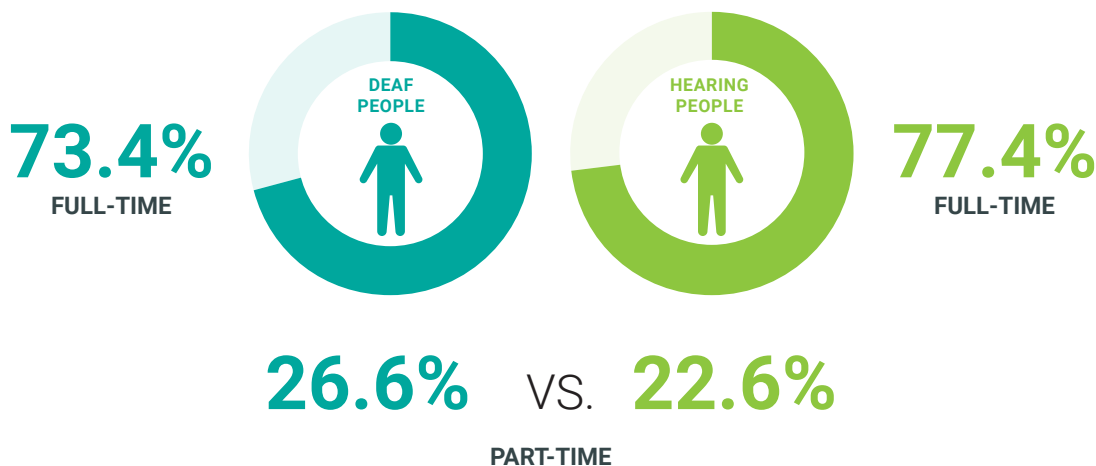
When considering work status, deaf people are more likely to work part-time than their hearing counterparts (Figure 3).

Among people who are employed, a higher percentage of deaf people than hearing people are self-employed (11.6% vs. 9.8%) or business owners (4.1% vs. 3.8%). The higher incidence of self-employment and business ownership may be an effective strategy to bypass challenges and biases in the workplace that deaf people are deeply familiar with.

If deaf people work full-time, they report similar median annual earnings as their hearing peers, \$50,000 and \$49,900, respectively. Half the population earn more than the median, and half earn less. However, employment rates and median annual earnings vary widely within deaf communities, just as it does in the hearing population. We will be discussing this in more detail throughout this report.



Figure 3
WORK STATUS



LABOR FORCE PARTICIPATION

Close to half (42.9%) of deaf people between the ages of 25 and 64 are not working or looking for work. However, not all deaf people participate in the labor force at similar rates. People experience different opportunities and barriers that are related to their intersecting identities, and that becomes visible when looking at labor force participation rates across race, gender, and ethnicity (Figure 4, next page). For example, 61.1% of deaf men versus 50.5% of deaf women are in the labor force, a statistically significant difference. Also, only 44.8% of deaf African Americans and 43.6% of deaf Native Americans are in the labor force, compared to 59% of deaf Whites. Average labor force participation rates drop by 12.3% for African Americans, 13.5% for Native Americans, and 18.1% for deafdisabled people.

By far the largest difference between those deaf people who are and are not in the labor force is the presence of additional disabilities.

Overall, 75.5% of deaf people without an additional disability were in the labor force, while only 39% of deafdisabled people were in the labor force, a statistically significant difference.

An understanding of how labor force participation rates vary within the population of deaf people can help researchers, policy makers, and educators design policies and practices that take those differences into account. Ultimately, further research is needed to understand why large numbers of deaf people have opted out of the labor force.

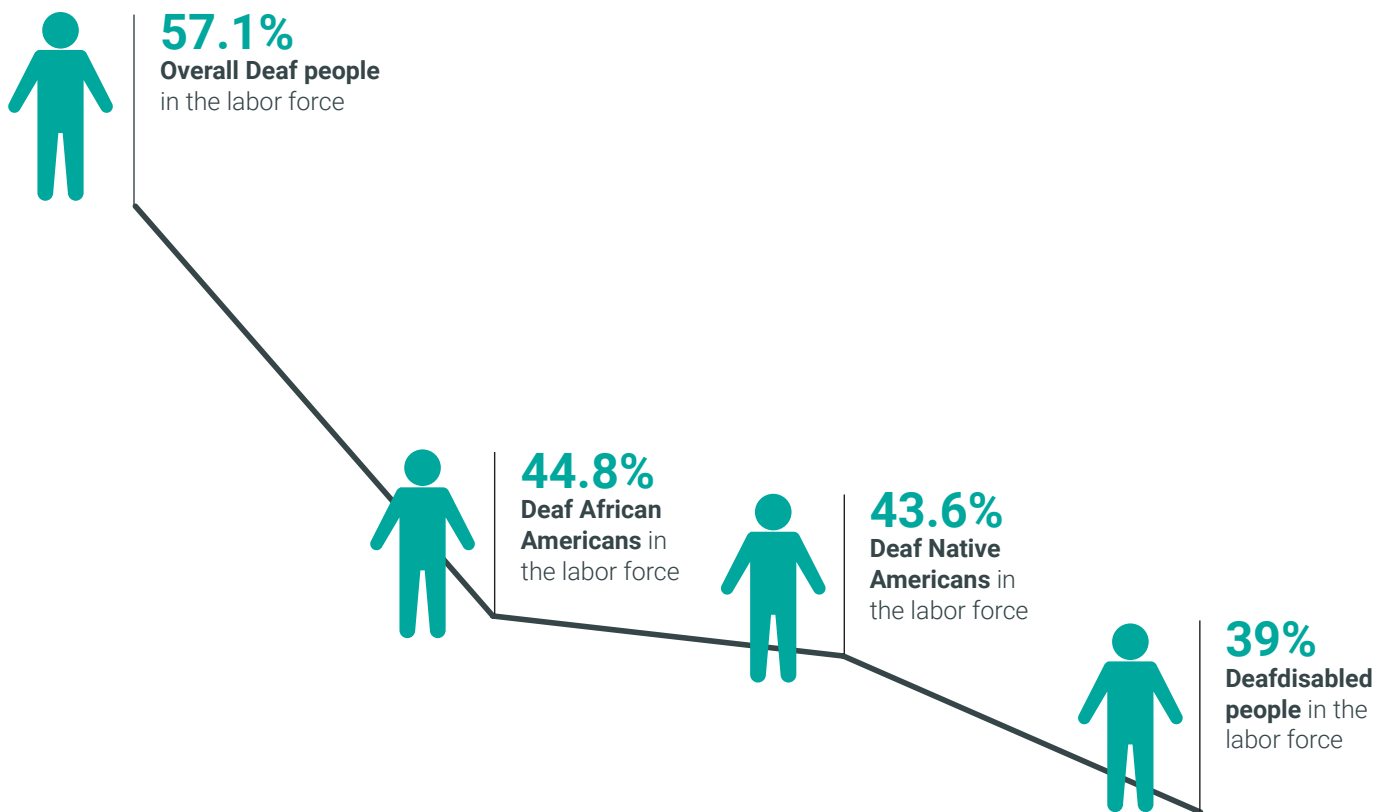
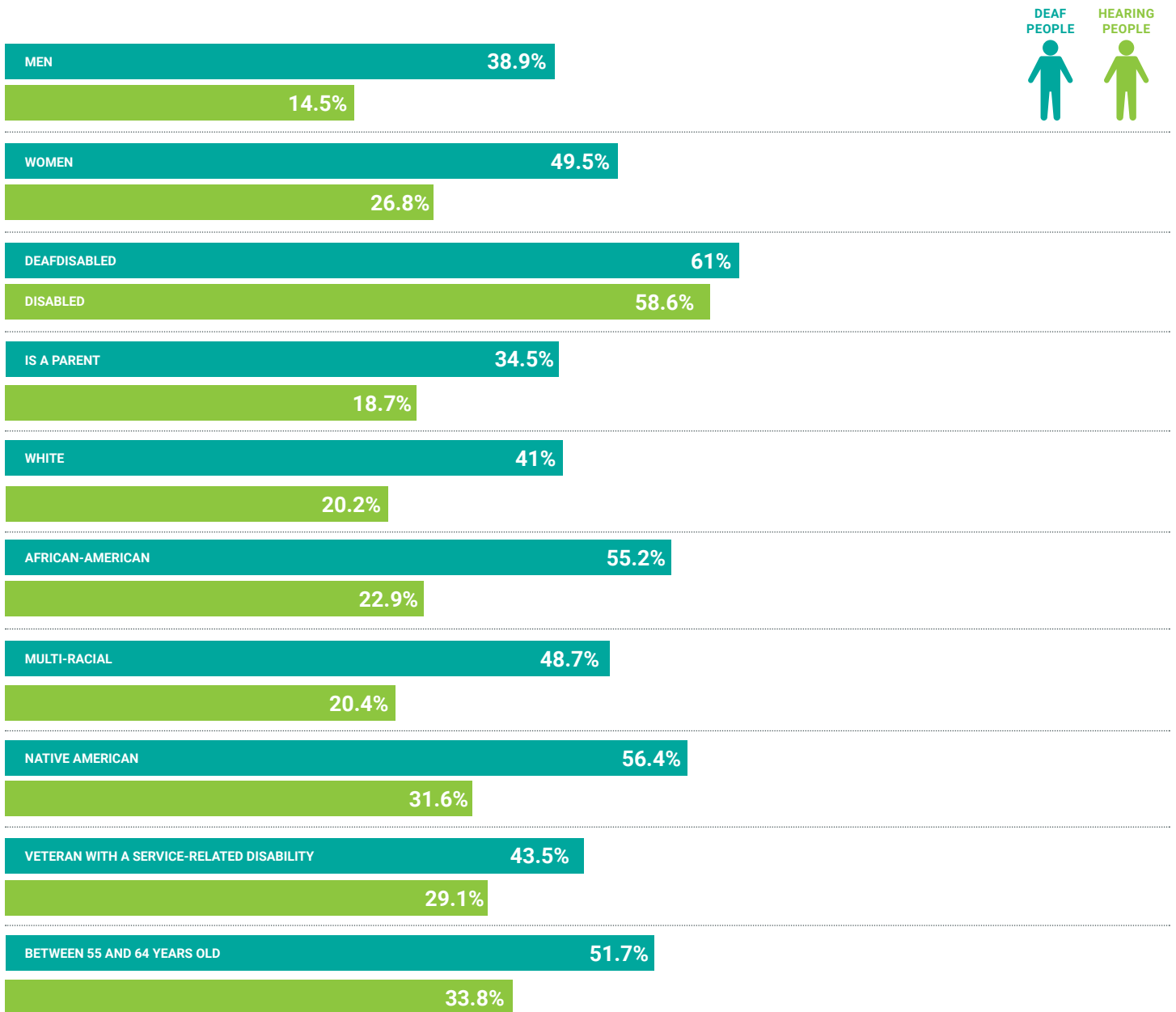


Figure 4
PEOPLE NOT IN THE LABOR FORCE



EMPLOYMENT AMONG DEAFDISABLED PEOPLE

The largest employment disparities were found for deafdisabled people. In this dataset, 50% of the deaf population had some sort of additional disability, each combination of which results in unique strengths and challenges. Employment rates and median annual earnings vary across type of disability.

Only 35% of deafdisabled people reported being employed in 2017 compared to 71.9% of deaf people without disabilities, an employment gap of 36.9%. Among deaf people who worked in 2017, more deafdisabled people work part-time than deaf people without additional disabilities (33.4% vs. 23.2%).

Among the deafdisabled population, employment rates differ greatly by disability type. Deafblind people report the highest employment rates, while deaf people that may need additional support with independent living skills and self care report the lowest employment rates.

Deaf people with any type of additional disability earn \$4,000 less per year, on average, than their deaf peers without an additional disability (Table 1). Some groups of deafdisabled people experience far greater earning disparities, earning as much as \$10,000 less than deaf people without additional disabilities. Recall that median annual earnings were calculated only from people who were working full-time. Thus, these data points about earnings do not reflect the number of deafdisabled people who are not working full time.

In these analyses, we were limited to the disability categories that are used by the U.S. Census, which does not recognize group identity preferences or differences within broad disability categories. The U.S. Census focuses on functional abilities, and does not attend to more complex issues surrounding identity. This is a limitation of this dataset. However, at a minimum, it is necessary to recognize that deafdisabled people are more likely to experience wage inequality and underemployment.

Table 1
EMPLOYMENT RATES AND EARNINGS BY ADDITIONAL DISABILITY STATUS

ADDITIONAL DISABILITY STATUS	MEDIAN SALARY	EMPLOYMENT RATES
Deaf + no additional disabilities	\$50,000	71.9%
Deaf + ambulatory disability	\$44,000	23.7%
Deafblind	\$43,700	34.6%
Deaf + cognitive disability	\$42,000	27.2%
Deaf + independent living difficulty	\$40,000	19.9%
Deaf + self care difficulty	\$42,000	20.7%

EMPLOYMENT EXPERIENCES BY RACE, ETHNICITY, AND GENDER

The intersections of race, ethnicity, and gender are important factors to consider when thinking about employment experiences and outcomes for deaf people. In this report, the data for Pacific Islanders, Native Americans, and people of other races and multiple races are drawn from very small samples, which may not be reflective of real population data. Data from these groups should be interpreted cautiously (Figure 5, next page).

Overall, disparities between men and women are similar in the deaf and hearing populations. The employment gap between men and women is 11.8% among hearing people and 10.6% among deaf people. Gender gaps in employment are not significantly different between deaf and hearing people. However, the wage gap is significantly larger for deaf women. Deaf women earn 77 cents for each dollar that deaf men earn, while hearing women earn 83 cents for each dollar that hearing men earn (Figure 6, next page).

Race and ethnicity affects employment opportunities and experiences for all people in the United States, deaf or hearing. As in the general population, deaf people who are white or Asian report higher income and employment rates. Lower employment rates are reported by Native American and African American deaf and hearing people.

When exploring the intersection of gender with race and ethnicity, we see that income and employment rates vary widely. For example, for each dollar a white deaf person earns, a Latinx deaf woman earns 64 cents and an Asian woman earns 90 cents. In general, some of the lowest income and employment rates are found among Pacific Islanders and Native American deaf women. For the most part, employment and income trends are similar for hearing and deaf people across race, ethnicity, and gender. However, the gender gap in employment between men and women seems to be narrower for deaf people than for hearing people of these races and ethnicities: Asians, Latinxs, whites, and other races.

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For each dollar a white deaf man earns ...

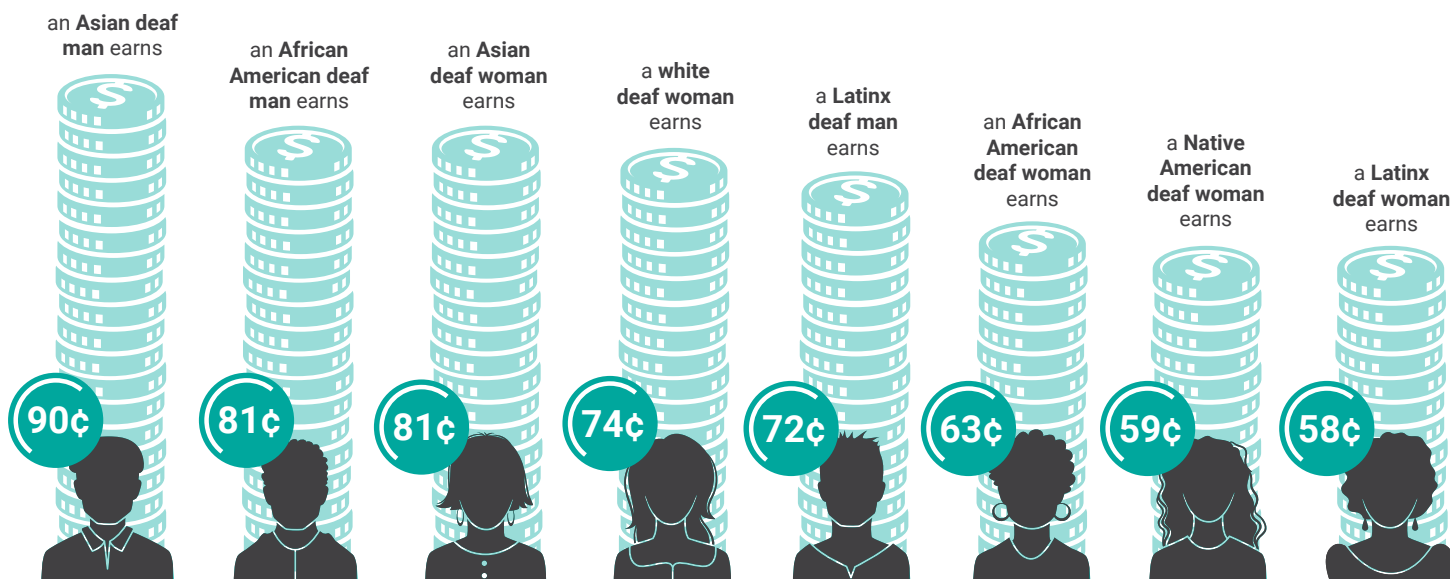


Figure 5
**EMPLOYMENT RATES
 BY RACE, ETHNICITY, AND GENDER**

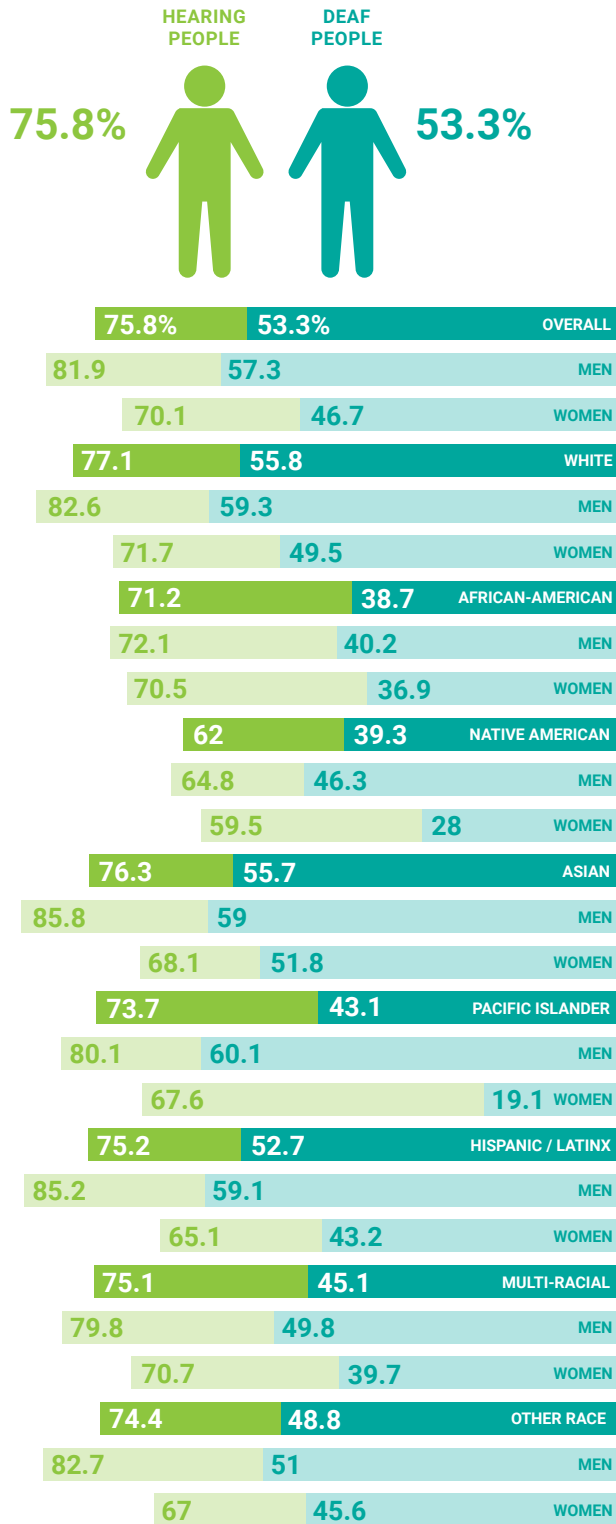
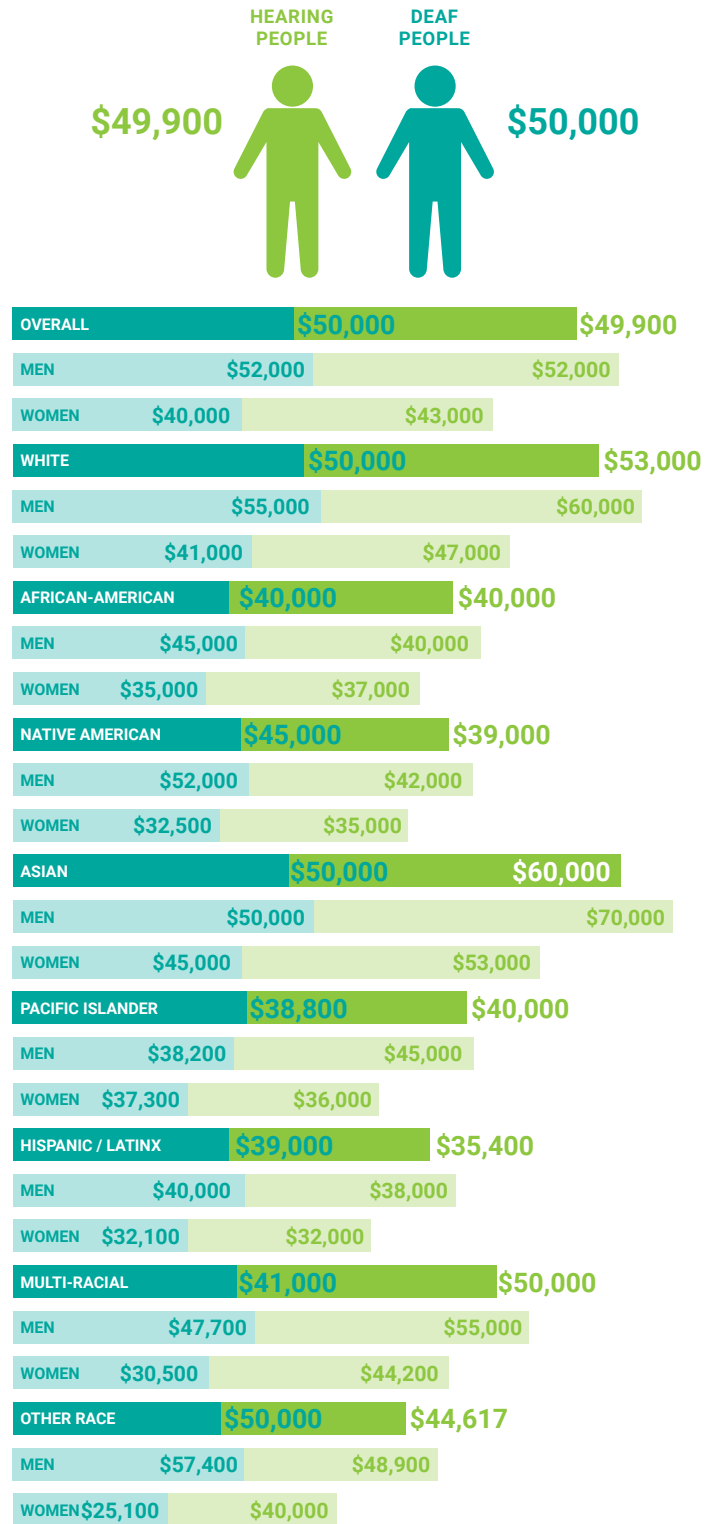


Figure 6
**MEDIAN EARNINGS
 BY RACE, ETHNICITY, AND GENDER**



EDUCATIONAL ATTAINMENT AND EMPLOYMENT

Employment experiences are closely tied to people’s level of educational attainment. Employment rates of deaf people increase as their educational attainment increases, from 31.7% for those who did not complete a high school education, to 74.4% for those with a masters’ degree. This increase in employment rates is also found in the general population.

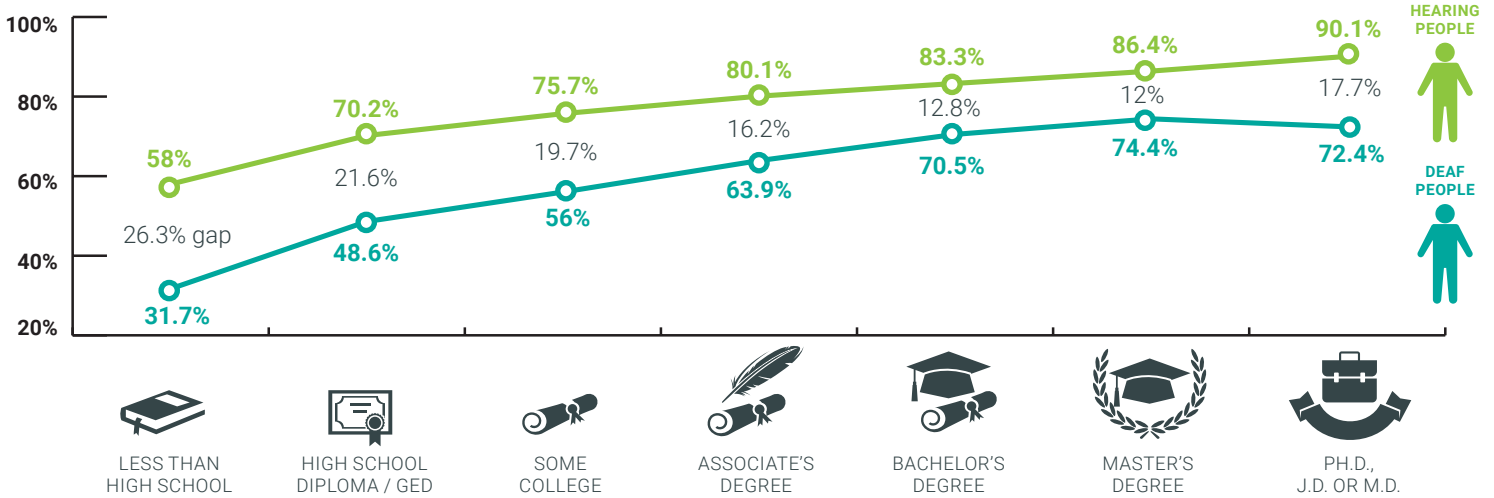
However, the employment gap between hearing and deaf people narrows as educational attainment increases (Figure 7). The largest employment gap between deaf and hearing people is found in people who did not complete high school education (26.3%), and the smallest employment gap is found among people with a master’s (12%) or a bachelor’s degree (12.8%).

For deaf people with college degrees, the field of those degrees plays a meaningful role in their employment possibilities. Deaf people with degrees in the following fields: computers, mathematics, and statistics, liberal arts/history, and the arts, had the highest employment rates, of over 75%. The least-employed fields were psychology and multidisciplinary studies, with employment rates around 60%.

Hearing people with degrees in the sciences, communications, and business, had the highest employment rates, of over 85%. The least-employed degrees include education, literature/languages and the arts, with employment rates around 80%. As you might expect, the most-employed and least-employed degrees are not the same for deaf and hearing people.

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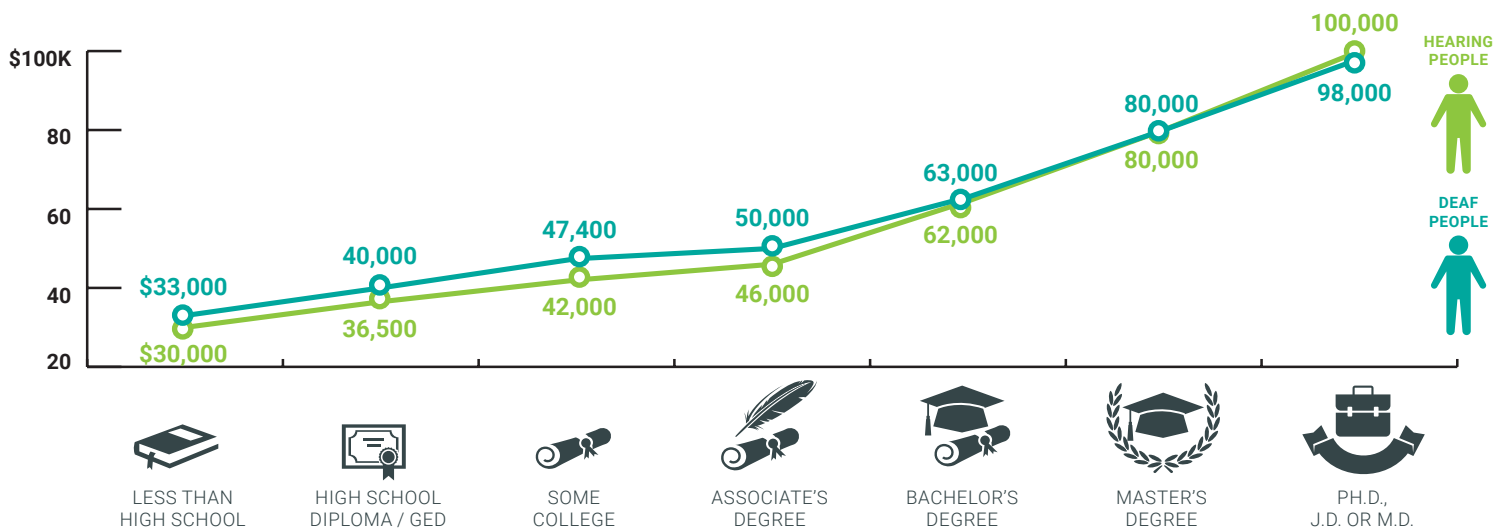
Figure 7
EMPLOYMENT BY EDUCATION LEVEL



Median annual earnings vary widely, depending on field of degree and level of educational attainment. Deaf people's median annual earnings increase as their educational attainment increases, just as in the general population (Figure 8). This may indicate that once deaf people have obtained specialized degrees and full time employment, they have the same earning power as hearing people. Again, recall that these data points exclude people who are not working full time, or those who have left the labor force.

Earnings also vary by field of degree. Deaf people with degrees in STEM fields reported median annual earnings between \$75,000 and \$93,500, while deaf people with degrees in multidisciplinary fields, art, education, psychology, literature and languages reported median annual earnings between \$50,400 and \$56,000.

Figure 8
MEDIAN ANNUAL EARNINGS BY EDUCATIONAL ATTAINMENT



EMPLOYMENT RATES ACROSS OCCUPATIONAL FIELDS

People in the United States work in a wide range of fields, and the most common fields of work appear to be different for hearing and deaf people. The most common occupational field for hearing people is the medical industry, with 13.8% of hearing people employed in this field; while the least common field is in extraction, with 0.6% of hearing people employed in this field. On the other hand, for deaf people, the most common field is manufacturing, with 15.7% of deaf people employed in this field, and the least common field is extraction, with 1.0% of deaf people working in this field (Figure 9, next page).



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Top 5 Occupations

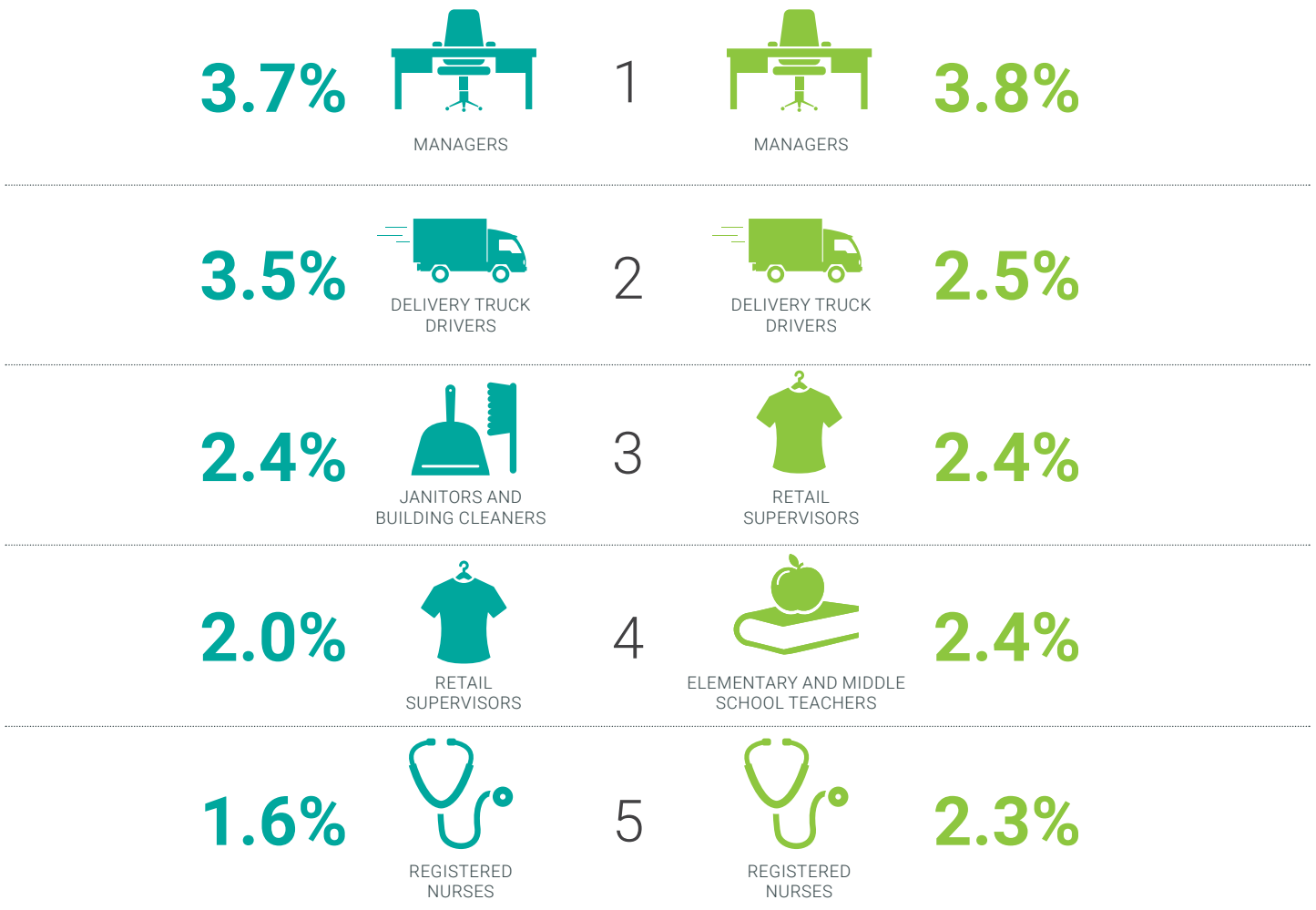
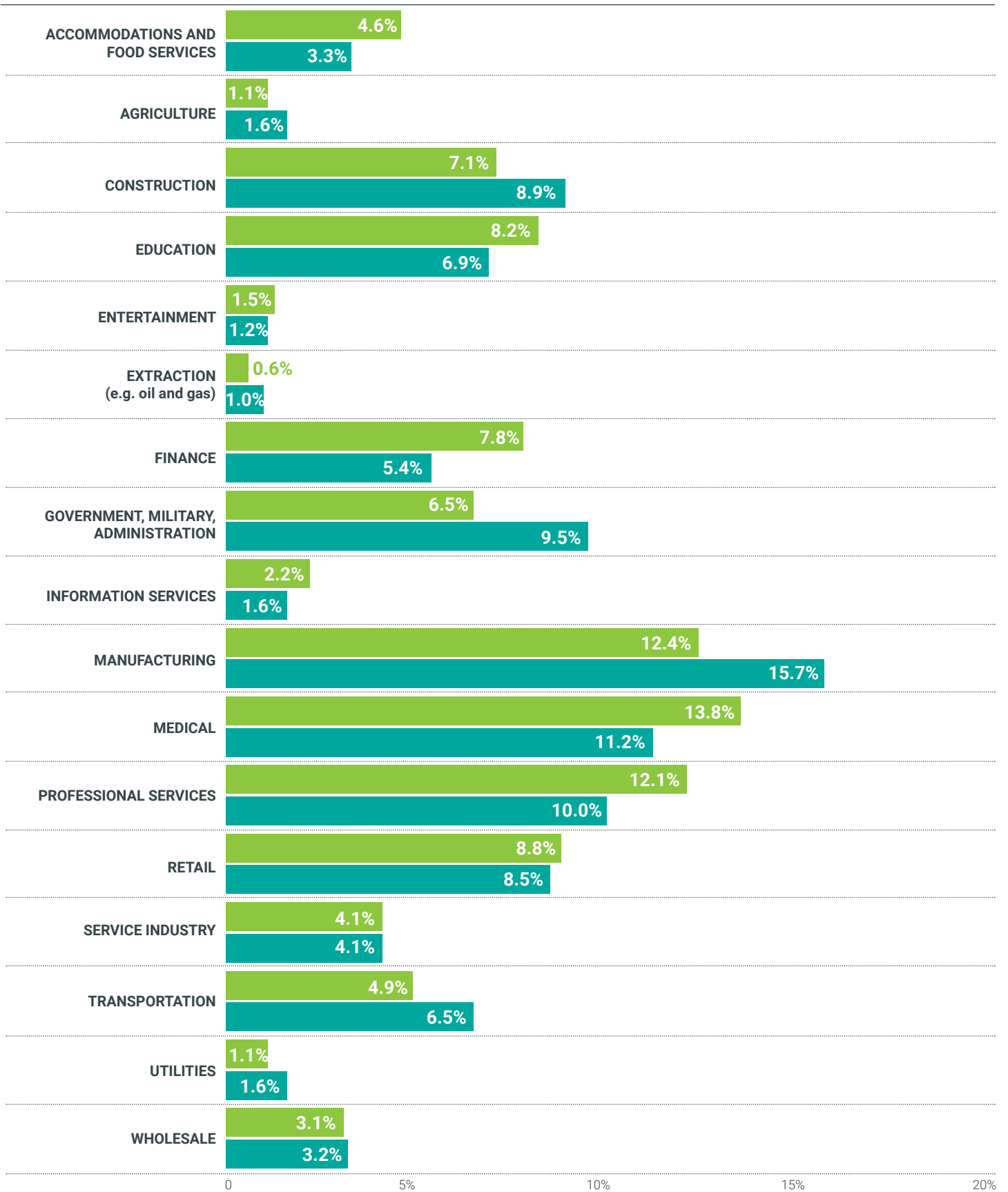


Figure 9
EMPLOYMENT RATES ACROSS OCCUPATIONAL FIELDS



EMPLOYMENT ACROSS THE LIFESPAN

Although the ages of 25-64 are considered “working age,” according to common federal guidelines, employment rates and earnings change across the lifespan. For deaf and hearing people alike, earnings increase as people age (Figure 10). However, there are some differences in these earnings gains across time for deaf and hearing people. First, the median earnings for deaf people demonstrates much more within-group variation, which is expected to the smaller sample size. Although, this data point could also indicate that there is greater income instability for deaf people in the United States. Second, earnings gains over time are significantly stronger for hearing people

than for deaf people. Earnings are more strongly correlated with age for hearing people, (Spearman’s $\rho=0.14$), than for deaf people, at (Spearman’s $\rho=0.11$). This may indicate that earnings gains related to age and experience are weaker for deaf people than for hearing people. It is a possibility that deaf people have fewer opportunities for promotion and raises over time, as the research literature would have us expect. Another possibility is that a cohort effect is at play, where younger deaf people have more advantages than older deaf people and are more competitive in the workforce.

Figure 10
EARNINGS BY AGE

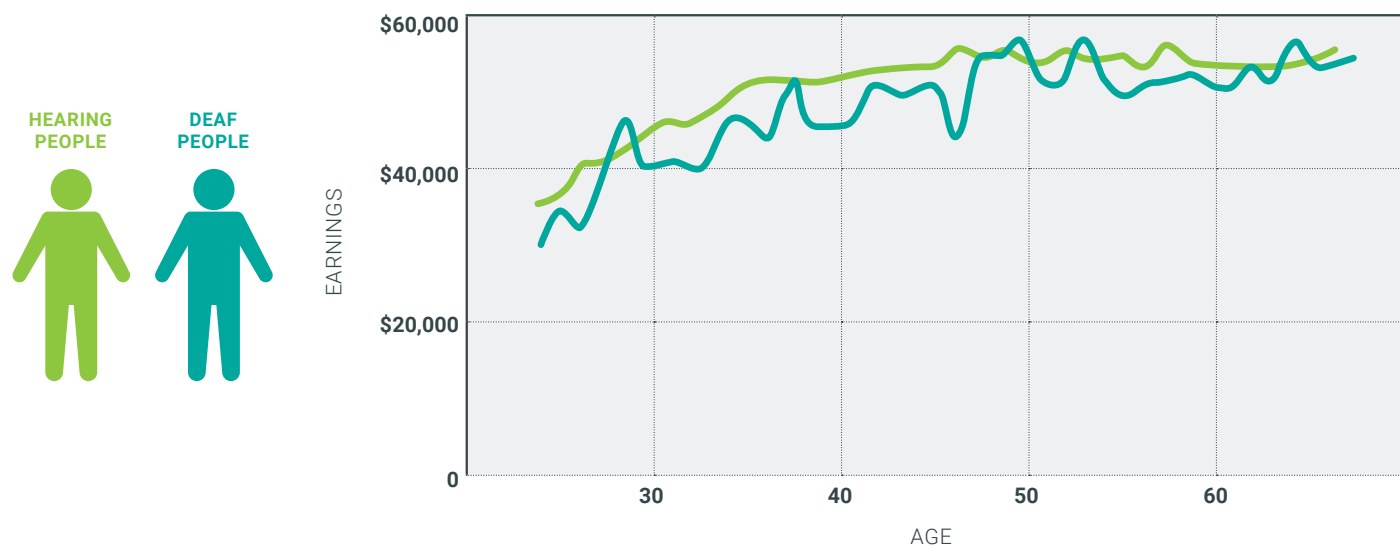
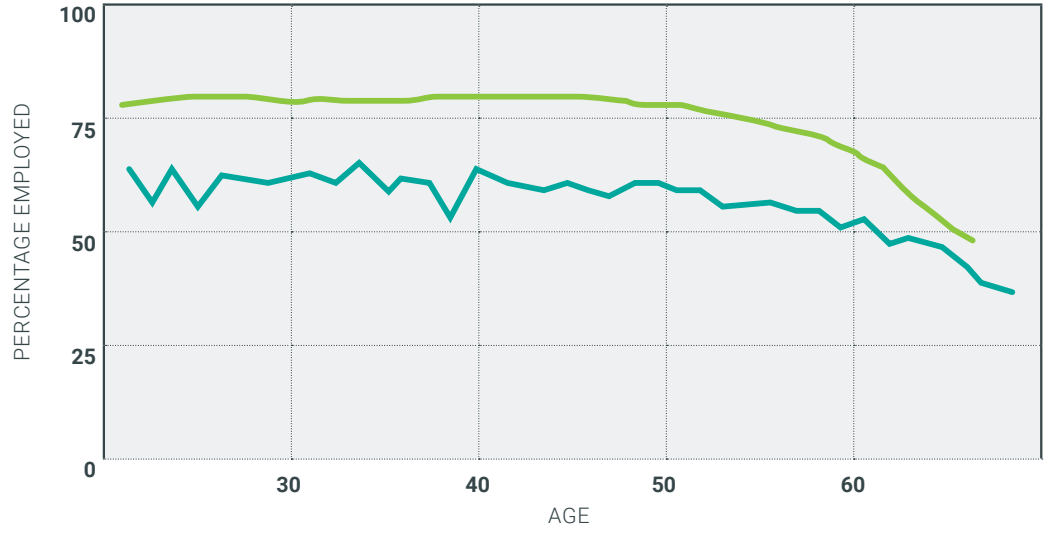
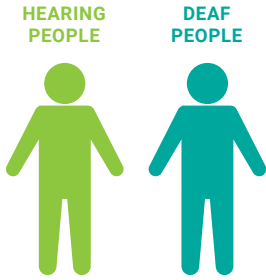


Figure 11
EMPLOYMENT BY AGE



METHODS

The data for this project were taken from the Public Use Microdata Sample (PUMS) of the 2017 American Community Survey (ACS), conducted by the United States census. The PUMS provides a confidential subset of the ACS for the public to analyze and these data were made available in September of 2018. The ACS is a legally mandated questionnaire sent to a random sample of addresses of homes and group quarters in the US. The questionnaire includes questions about both housing units and their individual occupants. The PUMS dataset includes survey weights, designed to produce estimates that generalize to U.S. people, along with a set of replicate weights used to estimate sampling error. These weights account for the complex probability sample design as well as for non-response. Although the census bureau goes to great lengths to minimize non-sampling error, it is impossible to fully eliminate, so estimates should be interpreted with care. More information can be found at <http://www.census.gov/programs-surveys/acs/about.html>.

The sample of interest in these analyses was non-institutionalized people between the ages of 25 and 64. Recall that the U.S. Census collects data on functional limitations and not disability or identity labels. The disability categories used in the ACS ask respondents to report if they have any serious difficulty in the following areas: a) hearing, b) vision, c) cognitive (remembering, concentrating, and making decisions), d) ambulatory (walking or climbing stairs), e) self-care (bathing or dressing), and f) independent living (doing errands alone such as visiting a doctor's office or shopping). Survey respondents who stated that they were deaf, or had serious difficulty hearing, were used to represent the deaf population in these analyses. More than 37,700 deaf people were in the final sample. The comparison group was those who did not report having any hearing difficulties, what we label as hearing people. For the most part, the data for the group of hearing people are largely comparable to data for the general population. But for comparison purposes, this analysis focuses on people in the general population that did not report any type of difficulty hearing, which allows for an understanding of what employment experiences may be unique to the deaf population, and what may not be.

Median annual earnings were calculated from full-time employed people, defined as those who worked at least 50 weeks in the past 12 months, at least 35 hours per week. Data from more than 15,000 deaf people were used to report median annual earnings. Median annual earnings are rounded off to the nearest hundred.

Occupational categories from the North American Industry Classification System (NAICS) was used to generate the categories for fields of work, with minor modifications, largely following abbreviations in the PUMS data dictionary. Two new categories were generated: “management of companies and enterprises,” “professional, scientific, and technical services,” and “administrative and support and waste management and remediation services” were combined under “professional services” while “finance and insurance” and “real estate, rental, and leasing” were combined under “finance.” The NAICS category “Health Care and Social Assistance” was divided into two new categories, “Health Care” and “Social Assistance.” More information about these categories can be found at census.gov/eos/www/naics.

The descriptive statistics in this report are all corrected by the person-level survey weights provided by the census. When numbers are compared to each other in this report, we used a *t*-test, with standard errors calculated using provided survey replicate weights, to determine if difference in the numbers were due to statistical noise.

These statistical tests are purely descriptive in nature, and we do not intend to suggest that any of the associations described are causal in nature. As such, we did not correct for any other variables in providing these descriptive statistics.

The R syntax for all the statistical estimates in the paper can be accessed at <https://github.com/nationalDeafCenter/attainmentAndEmployment>.

THIS REPORT MAY BE CITED AS:

Garberoglio, C.L., Palmer, J.L., Cawthon, S., & Sales, A. (2019). **Deaf People and Employment in the United States: 2019**. Washington, DC: U.S. Department of Education, Office of Special Education Programs, National Deaf Center on Postsecondary Outcomes.



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