

## **DEAF WORKERS: EDUCATED AND EMPLOYED, BUT LIMITED IN CAREER GROWTH**

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### **ABSTRACT**

This survey study examined the careers of deaf and hard-of-hearing (DHH) university alumni aged 22-59 compared to the careers of their hearing alumni peers from the same university. DHH alumni with 2-year degrees had negligible job promotions between ages 22 and 59, while those with 4-year degrees did better. However, in contrast to DHH, the hearing peers with comparable 4-year degrees had a significantly higher probability of being promoted to all levels of management or becoming an owner/entrepreneur. Overall, DHH were less satisfied with their jobs and careers. However, when satisfaction was further examined within the context of job status, the DHH and hearing satisfaction responses were similar. Satisfaction for middle and senior managers was significantly higher than that of non-managers. With few exceptions, both DHH and hearing participants responded similarly on the *general self-efficacy* scale and the constructs of career perceptions, entrepreneurial self-efficacy and career/personal scales. Logistic regression analysis revealed that the *general self-efficacy* score was a significant predictor of managerial attainment for hearing, but not for DHH. While the DHH and hearing responses to *general self-efficacy* and career constructs were similar, their promotion outcomes were different.

### **INTRODUCTION**

Research has documented the employment benefits of completing a college degree at both the two- and four-year levels (Grubb 1997; Kane and Rouse 1995). For DHH, studies have shown the employment and economic benefits of obtaining a college degree (Welsh and MacLeod-Gallinger 1992), as well as the influence of higher degree levels on their economic status (Schley, Walter, Weathers, Hemmeter, Hennessey, and Burkhauser 2011; Walter, Clarcq, and Thompson 2002). However, increased employability and improved economic benefits resulting from a college degree are only part of an individual's career success story. Little data exists on the ability of DHH people to achieve promotions and grow in their professions.

Much of the research on DHH in the workforce has compared deaf to hard-of-hearing employees, and not included comparisons with hearing workers. Schroedel and Geyer (2000) examined DHH graduates from 47 two- and four-year colleges and technical institutes. Eighty-five percent of the respondents were in the labor force and most expressed satisfaction with their careers and lives, and increased education generally resulted in an economic payoff. The majority was well established in their jobs, but 59% were performing the same basic duties for the previous five years. Boutin and Wilson (2009) examined 20,560 DHH who had secured jobs after participating in vocational rehabilitation programs. Their research showed more hard-of-hearing people (69%) obtained competitive employment compared to those who were deaf (31%). Hard of hearing people tended to secure professional employment (e.g., art, education, technical, managerial) while deaf people tended to be employed in non-professional occupations (e.g., clerical, machine operations, metal processing, printing, wood fabrication, welding, transportation, food preparation, janitors, and stock handlers). Boutin and Wilson explained these trends by suggesting that perhaps professional jobs expect more interaction with hearing people, thus requiring greater communication skills.

Various studies have examined the impact of disabilities on federal employment and career success. Singleton (2003) examined 2,161 DHH people in federal white-collar positions and found that only 4.8% had been promoted to the GS-13 pay level or higher (out of 15 levels), and that only one deaf person had been promoted to a "senior executive series" position out of 13,633 total federal employees at that level. Rashid's (2012) findings mirror those of Singleton and also raised concerns that the government lost at least 1,000 more deaf people than it hired from 1997 to 2006 and that there were no deaf people at the

senior executive level. But is this due to discrimination or other factors? Lewis and Allee (1992, 396) examined the impact of all categories of disabilities on the career success of federal employees and found that while people with disabilities had increased their numbers in the federal workforce, they made few other gains. Specifically, "...the disabled faced obstacles in both entry and advancement; they entered federal service at lower levels and were promoted at slower rates than nondisabled employees of the same education, age, experience, sex and minority status." These results are consistent with Rosenbaum (1984) who showed that early job status was related to career attainment. Furthermore, Lewis and Allee found that among employees at the same grade level, promotions were more likely for those with additional education, but the probability of promotion fell as age and length of service increased. Their research established that disparities were not due to education, age, federal experience, race, sex, or veteran status. They hypothesized that "differences in other unmeasured characteristics, including real difference in ability to perform the work, might explain the lower grade levels and promotion rates" (Lewis and Allee 1992, 396).

### **Self-Efficacy and Career Success**

Betz (2000) argued that self-efficacy theory should be an integral component of career assessment and that it was particularly relevant to minority groups. Self-efficacy refers to a person's belief in his or her ability to successfully complete a behavior or set of behaviors (Chung 2002). Originally proposed by Bandura (1977), self-efficacy expectations refer to a person's beliefs concerning one's ability to successfully perform a given task, and these beliefs are behaviorally specific rather than general. In developing a theory of career motivation, London (1983) defined self-efficacy on a number of dimensions: showing belief in oneself, striving for autonomy, demonstrating adaptability, taking control, striving to achieve, taking action for self-benefit, offering creative innovative ideas, attending to quality and details of work, and seeking personal development. Research has shown that self-efficacy directly influences career success and performance effectiveness (Day and Allen 2004; Kidd and Green 2006), while Abele and Spurk (2009) showed a longitudinal affect of occupational self-efficacy on salary change, status, and career satisfaction.

### **METHODOLOGY**

Participants in this study were alumni of a large private northeastern technical university. Between 1970 and April 2012 there were 7,952 DHH alumni who graduated during this 42 year period with the following degrees: 4-year baccalaureate = 2,262; 2-year associate = 3,592; and masters = 377. Additionally, there were 1,721 DHH graduates who earned diplomas = 1,303 and certificates = 418.

Surveys were sent to DHH and hearing alumni that were matched approximately for similar degrees and ages from the same colleges. There were 3,579 online and paper surveys sent to the DHH alumni and 3,258 sent to the hearing alumni identified as the comparable comparison group. The response rate for the DHH alumni was 33.4% (n = 1,196) and 28.9% (n = 940) for the hearing alumni comparison group. The data collection period occurred from December 2010 until April 2011. The findings reported herein represent only the DHH and hearing respondents to the survey ages 22 to 59. The age range selected corresponds approximately to the prime working age group in the U.S. labor market of 25-to-54-year-olds (Toossi 2012).

The survey for both DHH and hearing respondents consisted of the same 24 primary items with multiple sub-categories. The DHH participants received an additional six items about communication and the use of sign language in the work place. Job titles provided by respondents were categorized into employee roles with no management responsibilities, middle management, senior management, and owner/entrepreneurs. General self-efficacy, career perceptions and constructs, and overall satisfaction with career and current position were all measured with a 7-point Likert scale. The development of the surveys and collection of data was supported by a grant from the Kaufmann Foundation (Grant #20091189) to Richard DeMartino to explore the nature of entrepreneurship in the DHH communities.

### **RESULTS**

Research Question 1: Do DHH and hearing respondents with equivalent college degrees in the same age range have similar types of job roles — employee/non-

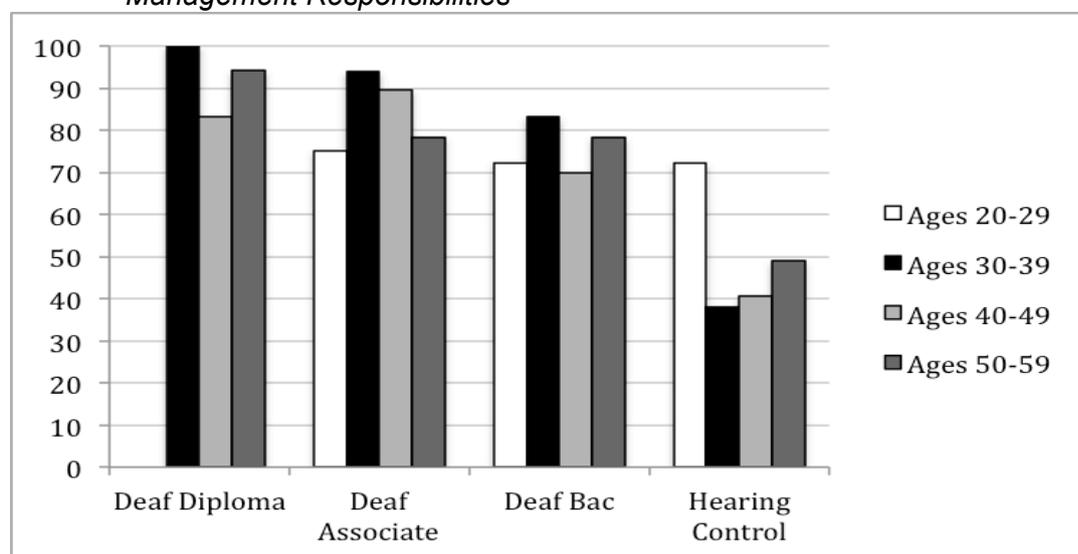
management positions, middle management, senior management, or owner/entrepreneur? A chi-square test showed a significant difference between DHH and hearing respondents' job roles,  $\chi^2 = 85.02$ ,  $df = 3$ ,  $p < .0001$ . Table 1 shows the percentage of respondents in each comparison group according to their current job title regardless of age. The DHH diploma and 2-year associate degree alumni are similar with about 86% to 88% remaining in non-management roles throughout their careers. The DHH 4-year graduates showed more movement into management positions with 15.2% at middle and 1.6% at senior levels, leaving 76% in non-management positions regardless of age. In contrast, the hearing 4-year graduates' career growth showed that 41% had been promoted to middle (33.2%) and senior management (7.4%). Probabilities calculated from the  $\chi^2$  table showed that hearing alumni compared to the DHH alumni with comparable 4-year degrees were 7.3 times more likely to become an owner/entrepreneur, 5.7 times more likely to be a senior manager, and 3.2 times more likely to be promoted to middle management.

Table 1. *Percent of DHH and Hearing Respondents by Job Title Regardless of Age*

Group	Non-Mgt	Mid-Mgt	Sr-Mgt	Owner/Entrepreneur
DHH Diploma	87.9	9.6	1.7	0.8
DHH 2-year degree	86.2	8.1	0	2.0
DHH 4-year degree	76.3	15.2	1.6	1.6
Hearing 4-year degree	50.7	33.3	7.4	8.2

Another way to examine job titles is by age ranges. Figure 1 shows the distribution of respondents that were in non-management positions by the age ranges of 22-29 (white bar), 30-39 (black bar), 40-49 (light gray bar), and 50-59 (dark gray bar). Note the differences between DHH with diplomas, 2-year associate degrees, and 4-year baccalaureate degrees in contrast to the hearing comparison group.

Figure 1. *Percent of DHH and Hearing Alumni by Age Ranges in Job Roles with No Management Responsibilities*



Research Question 2: Do DHH and hearing respondents differ regarding satisfaction with current job and overall career? In terms of job and career satisfaction, the DHH respondents were significantly less satisfied than the hearing respondent groups when job status is not considered. Table 2 shows the means and standard deviations for self-ratings to the current job and career satisfaction questions for the DHH and hearing comparison group. A 2 (group) X 2 (gender) ANOVA revealed a statistically significant difference for satisfaction with one's current job,  $F(1, 1053) = 28.69$ ,  $p < .0001$ , while showing no differences for gender and no interaction with hearing status and gender. The results were

similar for the respondents' overall satisfaction with their careers regardless of job status. A statistically significant difference occurred between DHH and hearing for satisfaction with one's overall career,  $F(1, 963) = 9.52, p < .0021$ , with no differences for gender, and no interactions. However, when job status is factored in for satisfaction with current job and overall career, the results show that DHH deaf and hearing participants responded similarly within the context of their status as employee/non-management, middle managers, and senior managers.

Table 2. Means and Standard Deviations by DHH and Hearing Responses To Current Job and Career Satisfaction

Survey Items	DHH	Hearing 4-year degree
Satisfaction Current job	4.5* (2.1)	5.2* (1.7)
Non-management †	4.9 (1.7)	5.2 (1.4)
Middle Manager †	5.4 (1.3)	5.4 (1.4)
Senior Manager †	5.3 (2.6)	6.4 (.8)
Overall Satisfaction Career	4.9** (1.5)	5.3** (1.4)
Non-management †	5.0 (1.4)	5.1 (1.4)
Middle Manager †	5.6 (1.3)	5.4 (1.3)
Senior Manager †	6.4 (.8)	6.3 (.9)

\*  $p < .0001$       \*\*  $p < .0001$

†Scheffé post hoc comparisons: Non-management vs. Middle manager Current Job  $p = .0035$ , Career  $p = .0003$ ; Non-management vs. Senior Manager Current Job and Career  $p < .0001$ ; Middle Manager vs. Senior Manager Current Job  $p = .0049$ , Career  $p = .0021$

Research Question 3: Is self-efficacy a predictor for both DHH and hearing with respect to their job roles as non-manager or manager? To answer this question, employment status was coded as a polytomous dependent variable with four categorical levels for the logistic regression analysis: DHH employee/non-management, DHH manager, Hearing employee/non-management, and Hearing manager. The independent continuous predictor variable was the respondents' self-rating on the *General Self-Efficacy* scale using a Likert scale ranging from 1 to 7. Table 3 shows that General Self-Efficacy self-ratings were significantly associated with promotion to management for the hearing alumni, but not for the DHH alumni. In contrast, the analysis showed that for DHH their *General Self-Efficacy* self-ratings were significantly associated with remaining in non-management positions. The odds ratio = 3.81 for hearing alumni being promoted to management, while for the DHH alumni, the odds ratio = .26 for being promoted to management.

Table 3. Logistic Regression Model for General Self Efficacy Predicting DHH and Hearing 4-year degree Respondents for Non-Management or Management Positions

Predictor	Dependent Variables	Parameter Estimate	Std Error	Wald's $\chi^2$	$p$
Gen Self-Efficacy	DHH Non-Management	-0.6513	1.2198	25.19	.0001
	DHH Manager	0.0948	0.2057	.21	.6449
	Hearing Non-Management	0.153	0.120	1.64	.2003
	Hearing Manager	0.651	0.130	25.19	.0001

A test of difference between DHH and hearing participants' *General Self-Efficacy* scores correlated with their responses to the ten constructs of career perceptions, entrepreneurial self-efficacy and career personal scales, showed there were no differences on eight of the ten constructs using Fisher's  $r$  to  $z$  transformation. However, DHH participants showed a significantly stronger difference for *career insight*  $p = .0183$  and *personal life/family orientation*  $p = .0019$ . *Career insight* is about having a plan to achieve a career goal or new information about self or situation that revised one's career goals. *Personal life/family orientation* is about spouse/partner co-career issues, child/school

requirements, and quality of life. DeMartino, Barbato, and Jacques (2006) have shown that personal life orientation impacts career achievement. Additionally, the hearing alumni showed a trend toward a stronger *career commitment* compared to the DHH  $p = .0572$ .

Research Question 4: How do DHH communicate in the work place? Table 4 shows the methods of communication used most when communicating with co-workers and vice versa. As shown, communication in the work place involved 78-80% writing, talking, or sign language with speech when the DHH respondents communicated with their hearing co-workers and vice versa.

Table 4. *Percentage of Methods Used the Most when DHH Employees are Communicating with Hearing Co-Workers and Vice Versa*

	Writing	Talking	Sign Lang w/Speech	Sign Lang w/out Speech	Finger spelling Only
DHH to Hearing Co-worker	11.0	51.1	16.0	9.0	0.3
Hearing Co-Worker to DHH	12.3	55.8	12.0	6.6	0.3

## SUMMARY OF FINDINGS

Across all age groups, DHH with diplomas and 2-year degrees had negligible promotions, while those with 4-year degrees showed 16.8% in management. Hearing peers with 4-year degrees showed 41% in management and 8.2% as owners/entrepreneurs. Satisfaction with current jobs and careers of DHH and hearing was similar within the context of job status. While DHH and hearing gave similar responses to the *general self-efficacy* and eight of ten career constructs, promotion outcomes were different. DHH gave significantly stronger importance to *career insight* and *personal life/family orientation*. While DHH appear to have similar career and entrepreneurial aspirations as their hearing peers, these findings suggest personal factors may inhibit their decisions to seek promotions and pursue career advancement. For the DHH participants, workplace communication involved English 78-80% in terms of writing, talking, or sign language with speech.

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