Post-secondary Employment and Education Outcomes of Young Adults Reporting Both Vision and Hearing Impairments in the High School Longitudinal Study of 2009

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The author thanks Jennifer Cmar and Michele McDonnell for their comments on an earlier draft. Correspondence about this article should be directed to Emily Lund, Department of Educational Studies in Psychology, Research Methodology and Counseling, University of Alabama, PO Box 87023, Tuscaloosa, AL 3548, emlund@ua.edu / emily.m.lund@gmail.com The contents of this manuscript were developed under a grant from the U.S. Department of Health and Human Services, NIDILRR grant 90RT5040-01-00. However, these contents do not necessarily represent the policy of the Department of Health and Human Services and should not indicate endorsement by the Federal Government.
Post-School Employment and Education Outcomes of Young Adults Reporting Deafblindness on the High School Longitudinal Study of 2009

Abstract

This article reports the post-secondary education and work activities of 43 young adults who reported a history of both hearing and vision disabilities (i.e., deafblindness [DB] in Wave 4 of the High School Longitudinal Study of 2009. Most of the sample reported having worked, attended post-secondary education, or both since completing secondary education. Approximately half of the sample still lived with their parents, and most reported receiving financial support from their parents. Thus, although engagement in work and education was relatively high, most participants had not achieved financial independence.

Keywords: dual sensory impairment, deafblind, deafblindness, hearing impairment, vision impairment, transition, post-secondary, education, employment

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Introduction

Experts have argued that the experience of being deafblind (DB; i.e., having co-occurring vision and hearing disabilities) constitutes a unique disability separate from either impairment alone due to its joint impact on the two major senses used for communicating and obtaining information about the environment (Brabyn, Schnek, Haegerstrom-Portnoy, & Lott, 2007). Most research on individuals who are DB has focused on topics such as communication (Bruce, Nelson, Perez, Stutzman, & Barnhill, 2016) and family needs (Correa-Torres & Bowen, 2016). However, there has been very little outcome research regarding functional independence, such as post-secondary education and employment.

In existing convenience surveys focusing on parents of transition-age DB youth, between 18% and 37% of individuals with DSI were employed (Peracchio & Stetler, 2009/2010; Petroff, 2001, 2010). Although these studies draw from state registries of families of children with DSI, incomplete state registries, participation from only some states, and limited or unclear response rates make it difficult to judge if or how representative these results are of the larger population of DB youth (Petroff, 2010), thus they should be interpreted with some caution. In order to address these limitations, researchers have begun to examine data from representative federal studies that include youth who are DB. In a recent analysis of the complex and representative National Longitudinal Transition Study 2 (NLTS2) data, McDonnall and Cmar (2018) found that 55.3% of youth who were deafblind had had at least one paid job since leaving high school, 53.6% had enrolled in post-secondary education, and 28.2% had engaged in both. However, more than a quarter of the sample (27.6%) were not engaged in either post-secondary education or work. Furthermore, parents in the study reported considerable difficulty receiving appropriate vocational and educational services after their child left high school. In addition to the overall lack of data on transition outcomes for young adults who are DB, the datasets used in the abovementioned analyses are somewhat dated (collected in 2009 or earlier). Thus, it would be helpful to have more recent data on the employment and post-secondary education outcomes among young adults who are DB. Such data is particularly pertinent given the recently implemented Workforce Innovation and Opportunity Act (2014). In part, WIOA guides federal vocational rehabilitation funding and priorities, and places a strong programmatic and budgetary emphasis on the provision of education and post-secondary transition services to youth and young adults with disabilities.

Typically, transition-age youth who have either vision or hearing impairments have employment rates about 25% lower than those of youth without disabilities (26.8%-28.8% versus 38.7%; Erickson, Lee, & von Schrader, 2017). However, because these rates reflect current employment, not total history of postsecondary employment, include some individuals still enrolled in high school, and do not account for participation in post-secondary education, they cannot be directly compared to the results of the studies of DB youth discussed above. In general, individuals with DSI have employment and labor force participation rates approximately half of rates among adults without disabilities, and also have slightly lower employment and labor force participation rates than individuals with disabilities as a broad group (National Research and Training Center on Blindness and Low Vision, 2018).
Purpose of the Present Study

Given the evidence that youth who are DB may face barriers with regards to post-secondary education and employment and the limited research on this topic, there is a need for more data on the employment and post-secondary experiences of youth who are DB. In the present study, the data on post-secondary education and employment among participants who identified as having experienced both vision and hearing disabilities is analyzed in the second follow-up wave of the High School Longitudinal Study of 2009 (HSLS:09).

Method

Data Source

The data in the present analyses were obtained from the second follow-up wave of the High School Longitudinal Study of 2009 (HSLS:09) dataset. HSLS:09 is a large, national longitudinal study of educational and employment outcomes funded by Institute of Educational Sciences (IES) and the National Center for Educational Statistics (NCES). The HSLS:09 cohort is a representative, weighted national sample of 25,206 ninth-grade students at 944 private and public high schools in across all 50 states and Washington, DC (Duprey et al., 2018). More information on the complex strategies used to recruit and select both high schools and students in order to ensure a highly representative sample of United States ninth-grade students can be found in Duprey et al. (2018) and Ingells et al. (2011). Initial data collection took place in 2009, and the first follow-up took place in Spring 2012. The data are statistically weighted in analyses to account for demographic over- and under-representation in sampling (Duprey et al., 2018).

Second Wave of Follow-Up

The second wave of follow-up data collection took place in Spring 2016 and focused on participants’ employment and education status as of February 2016, approximately two and a half years after their expected high school graduation. The data collection included 23,316 students. Participants could complete the second follow-up survey via either computer-assisted or phone interviews. Only participants themselves, not parents or other caregivers, could complete the survey during the second follow-up. This second follow-up survey included a variety of items about participants’ post-secondary work and employment experiences, as well as items about income, living arrangements, and demographics. A computer-assisted survey design was used to ensure that participants only saw items relevant to them, and the second follow-up survey was designed to take approximately 15 minutes to complete (Duprey et al., 2018). A complete database of all study variables can be found at https://nces.ed.gov/OnlineCodebook/Session/Codebook/00e33b2b-2442-4d72-98c8-fa5d68e34171

Identification of Sensory Disabilities and DB status, and History. The second follow-up survey included six items (see Table 1) about disability that were not included in previous waves, and was administered to 15,865 participants (67.5% of the Wave 1 sample). The present analyses included all participants who endorsed ever having had both a serious hearing disability
(“deaf or serious difficulty hearing”) and a serious vision disability (“blind or serious difficulty seeing, even when wearing glasses”). This resulted in a sample of 43 participants.

Table 1.
Wave 4 disability items (n=15,865)

<table>
<thead>
<tr>
<th>Item</th>
<th>Raw n (percent)*</th>
<th>Weighted percent*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did you have serious difficulty concentrating, remembering, or making decisions?</td>
<td>3376 (22.0%)</td>
<td>19.8%</td>
</tr>
<tr>
<td>(If yes), was that difficulty related to an emotional or mental health issue?</td>
<td>2000 (59.5% of those above)</td>
<td>58.5%</td>
</tr>
<tr>
<td>Did a health or education professional tell you that you had ADHD or ADD (Attention Deficit Hyperactivity Disorder or Attention Deficit Disorder)?</td>
<td>1744 (11.3%)</td>
<td>10.6%</td>
</tr>
<tr>
<td>Did you have a learning disability [not including ADHD or ADD]?</td>
<td>833 (5.4%)</td>
<td>6.0%</td>
</tr>
<tr>
<td>Were you deaf or did you have a serious difficulty hearing?</td>
<td>186 (1.2%)</td>
<td>1.2%</td>
</tr>
<tr>
<td>Were you blind or did you have serious difficulty seeing even when wearing glasses?</td>
<td>320 (2.1%)</td>
<td>2.5%</td>
</tr>
<tr>
<td>Did you have any other disability or special need?</td>
<td>691 (4.5%)</td>
<td>4.5%</td>
</tr>
<tr>
<td>Any disability (based on the above items)</td>
<td>4812 (31.5%)</td>
<td>32.0%</td>
</tr>
<tr>
<td>Did you became seriously ill or disabled?</td>
<td>676 (4.4%)</td>
<td>4.6%</td>
</tr>
</tbody>
</table>

Notes. *Percentages exclude those with missing data for that item. 1Unless otherwise noted, all items began with the steam “At any time before the end of February 2016…” 2Began with the steam: “Between the time you [received your high school diploma/received your certificate of attendance or completion/last attended high school] and February 2016…."

Data Analysis

Items related to work, post-secondary education, and self-sufficiency from the second follow-up IES/NCES public-use dataset were selected. Because the disability items used to identify history of dual sensory impairment were only asked during the second follow-up, analyses were limited to variables from that wave, with the exception of participant sex and race/ethnicity. Analyses
were descriptive. Because of the small, created subsample, both weighted and unweighted statistics are provided.

Participants

Information on participant race/ethnicity, gender, and additional disability is provided in Table 2. Participants were between 20 and 22 years old as of February 2016. Thirty-three participants (74.4%; weighted=83.4%) endorsed having at least one additional disability or special need. Ten participants (23.3%; weighted=22.2%) indicated that they had become seriously ill or acquired a disability between leaving high school and the second follow-up.

Thirty-three participants had a high school diploma, general equivalency diploma (GED), or other certificate at the time of the second follow-up. The remaining 10 reported that they had left high school without a diploma or other certificate sometime between 2011 and 2013. Six of these participants left high school before their expected graduation.

Results

Post High School Work and Education

Approximately three-quarters of participants reported having worked since leaving high school (n=35; 81.4%; weighted=76.5%), and about half reported having enrolled in college (n=25; 58.1%; weighted=48.4%). Most participants (n=28; 65.1%; weighted=54.6%) reported having applied to or registered at a college at some point, whether or not they actually attended. Twenty-four participants (55.8%; weighted=48.4%) reported having both worked for pay and having enrolled in college, and seven (16.3%; weighted=23.1%) reported that they had neither worked for pay since high school or enrolled in college. Of those who did attend college, 70.8% (weighted=72.4%) attended full-time or mainly full-time, 16.7% (weighted=19.0%) attended part-time or mainly part-time, and 12.5% (weighted 8.5%) attended an equal mix of full-time and part-time; one did not answer the question. Participants who had worked (n=35) had held a mean of 3.12 jobs since high school (SD=2.51; weighted M=3.28; SD=2.46; range=1-10).

Of those who had worked since high school (n=35), 13 (37.1%; weighted=26.6%) had gotten their first post-high school job in 2013, approximately when the cohort would be expected to graduate from high school. However, 11 participants (31.4%; weighted=45.4%), including six who had completed high school in 2013, had gotten their first post-high school job in 2012 or earlier, suggesting that they had either left or graduated from high school early or had continued a job that they had originally held in high school afterwards. Approximately one-fifth (20.6%; weighted=15.4%) had taken more than a month off from working, not counting vacation or sick leave, from their current or most recent job, and 27.9% (weighted=16.2%) indicated that they had lost a job between graduating from high school and the second follow-up. Of those who had worked since high school and reported any employment gaps (n=31), thirteen (30.2%; weighted=41.4%) had been unemployed and actively seeking work for a month or more at some point between leaving high school and February 2016. Participants reported an average of 1.6 instances (SD=2.47; weighted M=1.56, SD=2.45; range=0-7) where they had been unemployed.
and actively looking for work since leaving high school. The mean longest time unemployed and actively looking for work was 3.19 months (SD=4.86; weighted $M=3.15$, $SD=4.68$; range=0-7).

**Perceived Discrimination and Lack of Opportunity**

More than two-fifths of participants felt they had been discriminated against or received limited opportunities in education (41.9%; weighted=43.1%) or employment (44.2%; weighted=50.4%) “due to disability, race, gender, or other personal factors.” Among the 18 participants who had not enrolled in post-secondary education, personal or family reasons (61.1%; weighted=37.1%) were most commonly cited as the reason for not doing so, followed by career or military obligations (22.2%; weighted=22.9%), and financial reasons (7.0%; weighted=5.8%). Of participants who had enrolled in post-secondary education, only 29.2% (weighted=21.6%) reported disclosing a disability to their educational institution; 45.8% (weighted=30.8%) reported that they did not consider themselves to have a disability at the time of post-secondary enrollment.

**Current Work**

About half of participants ($n=24$; 55.8%; weighted=48.4%) reported working for pay at the time of the second follow-up. Of those were currently working at second follow-up, eleven (45.8%; weighted=29.5%) participants were working while attending college. Participants worked an average of 31.67 hours per week ($SD=12.74$; range=10-55; weighted $M=33.68$, $SD=11.22$); most (58.3%; weighted=65.6%) were working full-time (35 or more hours per week). Eleven (45.8%; weighted=49.3%) wished they worked more hours than they did. Of those currently working, 45.8% (weighted=46.3%) were working at the same job for the same employer as in their first post-high school job. The remaining 13 had changed either jobs or employers, with 45.8% (weighted=43.0%) working at a different job for a different employer. Among participants currently working at the time of the second-follow-up, the mean tenure at participants’ current job was 18.33 months ($SD=17.66$, median=18.33; weighted $M=18.78$ months, $SD=19.03$; range: 1-73). It is important to note that this average tenure is higher than the mean number jobs since high school may suggest. This likely due to the fact that this number reflects only the job tenure of participants who were currently working at second follow-up; the job turn-over of this subset of participants may not be reflected fully in the job turnover of participants overall. Additionally, it is possible that some participants were working more than one job at a given time.

More than half (58.4%; weighted=67.1%) of the 24 participants who were currently working said that they were somewhat or very satisfied with their current job. Twenty-three participants responded to the question about benefits offered by their employer. Health insurance was available to 25.0% (weighted=28.7%), as were retirement benefits. Other benefits offered included life insurance (20.8%; weighted=28.1%), paid leave (20.8%; weighted=27.8%), and financial assistance with school (16.7%; weighted=9.7%). Eighteen participants reported their hourly wages; the mean hourly wage was $9.50 ($SD=$1.25; weighted $M=$9.70, $SD=$1.54; range=$8-12).
Financial Independence and Security

About half \((n=22; \ 51.2\%; \ \text{weighted}=49.2\%\) of participants lived with their parents or guardians at the time of the second follow-up. Other living situations are listed in Table 2. Of the 22 participants who lived with their parents or guardians, 16 \((72.7\%; \ \text{weighted}=69.1\%)\) contributed regularly to household expenses. The mean monthly contribution was \$513 \((SD=\$510; \ \text{weighted}=\$422; \ \text{range}=$100-$1600\)). Over half of participants \((n=23; \ 53.5\%; \ \text{weighted}=52.3\%)\) reported that their parents “regularly” provided assistance with the participants’ bills, and an additional 16.3\% \((\text{weighted}=11.5\%)\) reported that their parents “occasionally” did so. Three-fifths \((60.5\%; \ \text{weighted}=59.0\%)\) of participants agreed or strongly agreed that they would be able to cover an unexpected \$500 expense if needed.

Table 2

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percent (n)</th>
<th>Weighted percent*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>37.2% (16)</td>
<td>28.5%</td>
</tr>
<tr>
<td>Female</td>
<td>62.8% (27)</td>
<td>71.5%</td>
</tr>
<tr>
<td>Race/ethnicity1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>44.2% (19)</td>
<td>40.3%</td>
</tr>
<tr>
<td>Black/African American</td>
<td>20.9% (9)</td>
<td>13.5%</td>
</tr>
<tr>
<td>Hispanic, of any race</td>
<td>18.6% (8)</td>
<td>38.2%</td>
</tr>
<tr>
<td>Multiracial</td>
<td>9.3% (4)</td>
<td>6.3%</td>
</tr>
<tr>
<td>Asian</td>
<td>7.0% (3)</td>
<td>0.7%</td>
</tr>
<tr>
<td>Additional disability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficulty concentrating, remembering, or deciding</td>
<td>51.2% (22)</td>
<td>41.1%</td>
</tr>
<tr>
<td>Due to mental health condition</td>
<td>34.9% (15)</td>
<td>40.5%</td>
</tr>
<tr>
<td>ADD/ADHD</td>
<td>39.5% (17)</td>
<td></td>
</tr>
<tr>
<td>Learning disability</td>
<td>37.2% (16)</td>
<td>42.5%</td>
</tr>
<tr>
<td>Other disability</td>
<td>20.9% (9)</td>
<td>18.2%</td>
</tr>
<tr>
<td>Living situation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>With parents/guardians</td>
<td>51.2% (22)</td>
<td>49.2%</td>
</tr>
<tr>
<td>With roommates or friends from college</td>
<td>14.0% (6)</td>
<td>17.8%</td>
</tr>
<tr>
<td>With other adult roommates, friends, or family members</td>
<td>18.6% (8)</td>
<td>20.4%</td>
</tr>
<tr>
<td>With spouse or significant other</td>
<td>25.6% (11)</td>
<td>20.1%</td>
</tr>
<tr>
<td>With own children</td>
<td>16.3% (7)</td>
<td>15.1%</td>
</tr>
<tr>
<td>Alone</td>
<td>11.6% (5)</td>
<td>6.2%</td>
</tr>
</tbody>
</table>

*Second follow-up (W4) weights used
1Hispanic participants not included in other racial/ethnic categories
ADD/ADHD = Attention Deficit Disorder/Attention Deficit Hyperactivity Disorder
Discussion

Compared to the small body of previous research on this topic, participants in the present sample were more likely to have had post-high school work experience—around 80% in the present sample compared to 55.3% in McDonnall and Cmar’s 2018 NLTS2 sample. Similarly, the rate of current employment in the present sample—approximately 50%—was higher than the 37% rate found in Petroff’s (2010) survey. One possible reason for this is that, unlike the other data sources cited, the HSLS:09 second follow-up survey relied solely on direct participant report. Individuals who were unable to take the survey either electronically or via phone would have been excluded. Therefore, this sample likely represents a subset of DB young adults who have higher functional abilities, likely lack major cognitive or intellectual impairment, and may not have received special education services. Also, the previous studies involved solely participants who received special education services, implying that their disabilities, on average, were likely more severe and involved greater functional limitation than those of participants in the present sample. Students who attended specialized schools for students who are Deaf or blind would have also been excluded from the study and thus from the present analyses.

Despite these surprising and encouraging findings, this analysis also highlighted some areas in which young adults who are DB were struggling. For example, 70% of participants in this subsample relied on their parents for “regular” or “occasional” assistance with bills, indicating potentially delayed financial independence despite the relatively high rate of employment. Additionally, hourly wages were relatively low, possibly contributing to the lack of financial independence noted above. In other words, it may be that many young adults who are DB are able to get jobs of some kind; however, those jobs may not pay enough to provide for financial independence, especially for individuals who may have complex or expensive healthcare or support needs. Indeed, half of participants lived at home, another potential indicator of delayed transition to independent adulthood. In the general American population, parental financial support for young adults and parent-adult child co-residence has increased in recent generations (Kahn, Goldscheider, & García-Manglano, 2013; Kirkpatrick Johnson, 2013), so this may also reflect the shifting cultural and economic trends in which is more common for parents to offer financial support to their children during the years immediately following high school graduation. It is also possible that some participants may lack the financial literacy necessary to make optimal decisions regarding their own financial health and savings (Allgood & Walstad, 2016), including developing an emergency saving plan (Babiarz & Robb, 2014). Increasing financial literacy via evidence-based educational programs may be an important part of secondary education for all students, including students who are DB and those who have other disabilities (Walstad, Rebeck, & MacDonald, 2010).

College enrollment rates for the present sample were roughly equivalent to those reported by McDonnall and Cmar (approximately 55-60%). Given the high comorbidity of additional disabilities seen in individuals with DSI, both here and other samples, it may be especially challenging for them to access postsecondary education and training. This may in turn make it more difficult for people who are DB to obtain higher paying professional positions that facilitate the movement into independent adulthood. At the same time, they may benefit from vocational services that assist them in job acquisition, retention, and advancement. It should be noted that a number of participants continued in working in jobs they obtained while in high school after
leaving school, providing additional support for the importance of high school work experience in post-secondary employment outcomes for transition-age youth with sensory disabilities (McDonnall, 2011; Lund & Cmar, 2020).

**Contributions of the Present Study**

These analyses provide additional information on an under-studied population—young adults who are DB. It is worth nothing that I used data that were only a few years old; previous analyses of employment and education outcomes in young adults with dual sensory impairments, by necessity, relied on data that was collected in 2009 or earlier (McDonnall & Cmar, 2018; Petroff, 2010). Older data may have limited generalizability to more recent student cohorts due to factors such as changing economic environments and new assistive technology.

**Limitations**

There are some important limitations to these analyses that should be discussed. First, the questions used to derive DB status only asked if participants had *ever* had a serious hearing or vision impairment. Thus, it is possible, although not likely, that some participants may have had an earlier hearing impairment, vision impairment, or both that had resolved by the time of the second follow-up. Second, there was no information on the severity, age of onset, cause, or course (e.g., progressive or non-progressive) of participants’ sensory disabilities. Thus, our ability to demographically compare this sample to other samples of DB young adults or assess possible effects of different types of deafblindness on employment and educational outcomes is limited. Relatedly, there was no medical or educational documentation to verify participants’ self-reported disabilities. The small subsample of participants limited me to descriptive analyses only due to issues of low statistical power. Finally, the sampling and interview structure of the HSLS:09 likely excluded individuals with more severe impairments, especially those with intellectual disabilities.

**Directions for Future Research**

Again, there exists a very limited body of research on the education and employment outcomes of individuals, including youth, who are DB. Given that the current studies suggest that there is a range of outcomes for these youth, more research should be conducted on both the barriers to and facilitators of successful transition to post-secondary education and employment among youth who are DB. For example, are there certain educational or extra-curricular placements, practices, or components that increase the likelihood of successful transition of youth who are DB, or are certain post-secondary practices and paths more advantageous than others for young adults who are DB? Also, it may be helpful to study if certain subsets of youth who are DB (e.g., those with later onset of sensory disabilities or those with progressive sensory disabilities) have different post-secondary outcomes or benefit from different programs or services than other youth who are DB.
Conclusion

Despite its limitations, this study provides new information post-high school work and education engagement among young adults who are DB. Compared to previous studies of youth who are DB, participants in these analyses were more likely to have worked after leaving high school but often had not developed financial independence from their families. It is important that practitioners who work with DB young adults or their families develop and provide supports and resources facilitate economic self-sufficiency and independent living among these youth.
References


