

Problematic Data on How Many Students in Postsecondary Education Have a Disability

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Abstract

The most widely cited statistics on postsecondary students with disabilities in the United States are based on the Department of Education's quadrennial National Postsecondary Student Aid Study (NPSAS). However, these statistics are called into question by their substantial variability across NPSAS administrations and by results of the second National Longitudinal Transition Study (NLTS2). For example, according to NPSAS 2008 telephone survey results, fewer than 10% of postsecondary students with disabilities reported having learning disabilities, compared to the NLTS2 finding of nearly 70%. The NLTS2 results can be considered to be of superior validity and reliability given that study's (1) longitudinal tracking into early adulthood of a large nationally representative sample of high school students in special education and (2) categorization of participants as to their disabilities based on their school records. By contrast, the cross-sectional NPSAS relies on self-reports by postsecondary students who are likely to interpret questions about disabilities in varied ways. In addition, many NPSAS participants may decline to identify themselves as having disabilities, as suggested by NLTS2 findings that most postsecondary students with disabilities decide not to self-disclose to their institutions. It appears that NPSAS disability statistics are misleading and their dissemination should be discontinued. Given the potential utility of accurate data on students with disabilities, postsecondary education institutions may want to consider conducting their own campus-level disability surveys.

Keywords: Transition to postsecondary education, disability surveys, self-disclosure

This review examines the quality of data available from various sources to answer the question, "How many students in postsecondary education have a disability?" The question is surprisingly difficult to answer, as reflected in Schroedel's (2007) literature review finding that estimates of the number of postsecondary students with hearing impairments in the United States ranged from 25,000 to over 400,000. Such variability raises doubts about the accuracy of data on postsecondary students with disabilities (SWD). Accurate data are important for better understanding of postsecondary SWD subpopulations and for meeting statutory requirements to evaluate the effectiveness of special education and related services in preparing children with disabilities for adulthood.

The Statutory Framework of Education for Individuals with Disabilities

The Education for All Handicapped Children Act was passed by the US Congress in 1975 to redress the exclusion from school of numerous children due to their having disabilities. The Act assured that all children with disabilities have available to them "a free appropriate public education which emphasizes special education and related services designed to meet their unique needs." It also included provisions "to assess and assure the effectiveness" of these services, which implies a requirement for accurate data.

By the most recent reauthorization of the Act in 2004 (renamed the Individuals with Disabilities Education Act, or IDEA, in 1990), it had evolved to specify that the ultimate purpose of "special education" is to prepare children with disabilities for "further education, employment, and independent living" on reaching

adulthood. To support this goal, the IDEA requires that high school students in special education be provided with transition-to-adulthood services guided by individualized plans. These plans are to be developed by age 16 based on student needs and preferences and designed to lead to valued adult outcomes, including participation in postsecondary education, which is listed as a transition goal in more than four out of five transition plans (Cameto, Levine, & Wagner, 2004).

The special education and transition services mandated by the IDEA are among the primary factors promoting a steady increase over the decades in the proportion of youth with disabilities who go on to postsecondary education (Johnson, Stodden, Emanuel, Luecking, & Mack, 2002). Other key legislation includes Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 (ADA), which both require that education institutions at all levels provide equal access for people with disabilities (the ADA extended the Section 504 requirements from just institutions receiving federal financial assistance to all institutions, except for those controlled by religious organizations).

The scope of the IDEA is limited to the public preschool-to-high-school (P-12) education system. The law's regulations specify that eligibility for special education services requires a diagnosis of at least one of 13 qualifying disability types and furthermore that the disability hampers learning. The regulations also require states to collect and regularly report detailed data on SWD in the P-12 system. By contrast, the ADA and Section 504 apply to all ages and life domains, including education, employment, transportation, and so on. The ADA defines disability as "a physical or mental impairment that substantially limits one or more major life activities" including "seeing, hearing, eating, sleeping, walking, standing, lifting, speaking, learning, reading, concentrating, thinking, communicating, and working." Postsecondary institutions generally face no statutory reporting requirements on their SWD populations.

Postsecondary institutions have typically responded to Section 504 and the ADA by establishing disability support services offices responsible for determining eligibility and supporting equal access through appropriate services and accommodations (Madaus, 2000). Examples of widely available accommodations include digital textbooks with voice and large print options for students with vision impairments, note takers for those with hearing impairments, and extended test taking time for those with disabilities, such as dyslexia, that make it difficult to rapidly read and comprehend test items (Stodden, Whelley, Harding, & Chang, 2001).

A major challenge for many youth with disabilities transitioning from high school to postsecondary education is that they must adapt to a new legal milieu. Under the IDEA, the public P-12 system is required to identify them, assess their disabilities, and provide a potentially wide range of special education and related services according to regularly updated Individualized Education Plans (IEPs). However, in the postsecondary education environment, governed by the ADA and Section 504, SWD must take the initiative by identifying themselves to those responsible for disability support services and providing proof of their disabilities (Stodden & Conway, 2003).

Data Sources on Postsecondary Students with Disabilities

The IDEA stipulates two primary evaluation activities to gauge how well special education and related services are achieving their purpose of preparing children with disabilities for adulthood. One activity is specified under IDEA Part B Indicator 14 (Post-School Outcomes), requiring that states report the percent of youth who are no longer in high school, had IEPs in effect at the time they left school, and were enrolled in postsecondary education and/or competitively employed within one year of leaving (Unruh, 2010). States typically collect this information through mail and/or telephone surveys and have the option of adding items or extending the post-high school time period covered beyond one year. However, these surveys tend to be characterized by low response rates and unrepresentative samples and are generally not considered to give accurate portraits of postsecondary education participation (Alverson, Naranjo, Yamamoto, & Unruh, 2010; U.S. Government Accountability Office [GAO], 2003). In addition, the one-year time frame is likely to miss many youth who first enroll beyond one year, since delayed enrollment is more common for those with disabilities compared to their peers without (Newman et al., 2011).

The other major stipulated evaluation activity (in Section 664, Studies and Evaluations, of the IDEA as amended in 2004) consists of longitudinal studies tracking the outcomes of students in special education. This requirement is currently being met by the third National Longitudinal Transition Study (NLTS). As discussed by Halpern (1990), earlier studies on the adult outcomes of former students in special education tended to be limited in geographic coverage, had relatively small sample sizes, used divergent definitions and outcome measures that prevent the comparison or pooling of results, and used cross-sectional designs yielding data not well suited to analyzing change over time. The NLTS design addresses these shortcomings

by assembling nationally representative samples of large numbers of high school students in special education and then following them into their early adult years; assigning participants to disability categories based on their documented diagnoses rather than relying on student or caregiver reports; and gathering information on participant characteristics and experiences using survey questions adapted from validated instruments (Wagner, Kutash, Duchnowski, & Epstein, 2005). NLTS results can be considered to provide a portrait of post-school outcomes according to disability category that is about as accurate as possible given the likely biases of self-report measures (e.g., youth might not be truthful about their substance use) and the inevitable loss to the study of some participants. The second NLTS (called NLTS2) reported respectable response rates of 81.9% for baseline data collection in 2000-2001 and 71.9% for the final wave eight years later (Newman et al., 2011).

An emerging potential source of quality data on postsecondary SWD is the development of state longitudinal data systems tracking all students, each with a unique identifier, from preschool or kindergarten through postsecondary education (Alverson et al., 2010). The U.S. Department of Education (DOE) has promoted development of these systems through grant competitions for states (Sparks, 2011). States that establish comprehensive systems will be able to gain a much clearer picture of the school careers of SWD, including their postsecondary education numbers and experiences.

Another data source is the American College Health Association's (ACHA) National College Health Assessment, second version. The survey is meant to be administered to an institution's entire enrollment or a randomly selected subset, and includes a set of yes-no questions on whether the student has any of eight disabilities or an "other" disability. The ACHA cautions that, because the participating institutions are self-selected (totaling 153 in Spring 2013), the results cannot be generalized to the broader postsecondary education universe (American College Health Association, 2013).

Currently, the most commonly cited statistics on numbers of postsecondary SWD in the United States appear to be those generated by the U.S. DOE's quadrennial National Postsecondary Student Aid Study (NPSAS). This study gathers data from a variety of sources including telephone interviews with a large sample of postsecondary students, who are asked among other things whether they have disabilities, and if so to specify what types of disabilities. Results for the percentage of postsecondary students reporting they have disabilities were 6.6% in 1990, 6.5%

in 1993, 5.5% in 1996, 9.3% in 2000, 11.3% in 2004, and 10.9% in 2008 (Horn & Berktold, 1999; Snyder & Dillow, 2013) (the NPSAS 2012 disability figures had not been publicly reported as of this writing in July 2014). Although the SWD proportion of total enrollment fell in 1993, 1996, and 2008, the number of SWD enrolled actually increased but at a slower rate than that of the overall student population. The jump in the percentage from 1996 to 2000 resulted from a broadening of the disability definitions in order to increase the amount of information obtained about SWD (Wolanin & Steele, 2004).

Postsecondary disability statistics derived from the NPSAS are reported in the Congressionally-mandated *Digest of Education Statistics*, published annually by the US DOE's National Center for Education Statistics (NCES). The digest for 2012 provided a table summarizing percentages of undergraduates (NPSAS 2004 and 2008 data) and post baccalaureate students (NPSAS 2008 data) with and without disabilities according to sex, race/ethnicity, age, full- or part-time attendance, living on- or off-campus, dependency status, military veteran status, and field of study (Snyder & Dillow, 2013, Table 269, p. 376). The "Fast Facts" section of the NCES website answers the question "How many students in postsecondary education have a disability?" by reproducing the relevant data from the *Digest of Education Statistics* (<http://nces.ed.gov/fastfacts/display.asp?id=60>). Data provided by these authoritative sources are used to describe and make assertions about postsecondary SWD subpopulations in numerous academic and general audience publications.

Doubts about the Accuracy of NPSAS Disability Statistics

However, the validity and reliability of NPSAS disability data are called into question by inexplicable data variability within and across the survey's administrations. The author was first struck by this variability in the process of working with colleagues to write up the results of a literature review on factors influencing the postsecondary education access and success of SWD of culturally and linguistically diverse backgrounds (Leake et al., 2006). To provide a statistical overview of the population, we adapted a table from Horn and Berktold (1999, Table 2, p. 8) that summarized NPSAS 1996 data on the percentages of undergraduate students with various disabilities according to racial/ethnic group.

However, there seemed to be considerable variability in the data, which is a possible sign of poor validity unless there are good explanations for the variability.

For example, the table showed that when the disability rate of 5.5% reported by all survey participants was broken down by racial/ethnic group, the rates ranged from 1.9% of Asian/Pacific Islanders to 13.4% of American Indians/Native Alaskans. There was also much variability in the rates of different disabilities according to racial/ethnic group. The variability seemed puzzling. Why, for example, would Hispanics report speech or language impairments at a rate of over 16% while the rates for both Black and White non-Hispanics were under 2%? The validity of these rates is questionable in view of data showing that of students ages 6-21 in special education in 2003, 14.3% of Blacks, 18.3% of Hispanics, and 20.6% of Whites were classified as having speech/language impairments (Office of Special Education Programs, 2007, Table 1-7, p. 36).

We nevertheless decided to use the NPSAS data because they were provided by the NCES, the U.S. government's lead agency for educational statistics. As such, the data variability had presumably been examined and found acceptable given the many factors known to influence the disability experiences of different racial/ethnic groups. For example, many Asian cultures are known to be oriented to keeping personal and family problems private and not seeking outside help (e.g., Bui & Turnbull, 2003), which might help explain the low disability rate reported by Asian/Pacific Islander postsecondary students.

The author recently conducted an Internet search with Google and Google Scholar for assessments of NPSAS disability data using the search terms *NPSAS, disability, validity, reliability, and accuracy*. A search was also conducted at the U.S. DOE website using the search terms *NPSAS* and *disability* to see if internal assessments of validity and reliability are available. These searches identified only a few relevant publications. The earliest was an in-depth statistical profile of postsecondary SWD based primarily on data from the NPSAS 1996 and three longitudinal studies, two of which followed subsets of NPSAS participants (Horn & Berkold, 1999). An appendix of this report compared NPSAS 1996 results with those for (1) the NPSAS 1993 (the survey was then conducted every three years) and (2) a 1996 survey of entering freshmen conducted by the Cooperative Institutional Research Program (CIRP) (compared to NPSAS results for freshmen only). Some substantial differences were noted in the proportions of students reporting different kinds of disabilities.

The NPSAS 1993 versus 1996 comparison showed substantial differences in every disability category (Table A1, p. 55). For example, orthopedic limitations were self-reported at a rate of 2.4% in 1993 and 1.3%

in 1996, while learning disabilities increased from 1.2% to 1.6%. According to Horn and Berkold (1999), a possible explanation was that one or both survey samples were not representative of postsecondary SWD. One reason for this could be that the institutions sampled might vary from one survey to the next in their disability support services and therefore the numbers and kinds of SWD they attracted. Another possible reason could be that while the NPSAS appeared representative of postsecondary students overall, with about 21,000 surveyed, the number who self-identified as having disabilities (around 1,300) was too small. However, as demonstrated below, there is also substantial variability in the results of recent iterations of the NPSAS even though the sample has grown to be over five times larger.

Comparison of the results for freshmen showed that CIRP respondents reported higher rates than NPSAS respondents in every disability category, with the rates for "any disabilities" being 7.0% versus 5.7% (Table A1, p. 55). Horn and Berkold (1999) suggested that respondents may have been more reluctant to reveal their disabilities during NPSAS telephone interviews than on the more private written questionnaires of the CIRP survey. As also discussed further below, NLTS2 results support the idea that many NPSAS respondents might decline to self-disclose disabilities.

The only authors found to directly question the validity of NPSAS disability data were Wolanin and Steele (2004). They were struck by some of the seemingly unexplainable results for the NPSAS 2000, stating, "High percentages of orthopedic impairment and low percentages of learning disability are unusual findings and contrast sharply with the breakdown in other data sources" (p. 11). They concluded that the NPSAS results "simply lack face validity" (footnote 15, p. 49).

Another relevant publication is the U.S. GAO's (2009) response to a request of the Committee on Education and Labor of the US House of Representatives to examine what was known about postsecondary SWD and how they could be better supported to succeed. The U.S. GAO (2009) report primarily used NPSAS data to characterize this population, but noted that "NPSAS data on type of disability differed from studies that have examined the population of students with disabilities before they reached college age" (p. 12). For example, for the NPSAS 2008, fewer than 10% of students who reported having disabilities specified having learning disabilities. By contrast, two longitudinal studies conducted around the same time found that of high school students in special education who went on to postsecondary education, about 70% had been previously diagnosed with learning disabilities. The U.S. GAO (2009) attributed this discrepancy to

the different purposes and target populations of the NPSAS compared to the longitudinal studies, as well as the possibility that NPSAS respondents “may have chosen not to disclose that they had a disability” (p. 13).

The U.S. GAO (2009) report also included a chart and a table showing proportions of postsecondary students reporting different disabilities across the 2000, 2004, and 2008 iterations of the NPSAS. The results are reproduced in Figure 1 (which omits the speech or language impairment, brain injury, and developmental disabilities categories due to their low prevalence). Much variability is visually obvious. The U.S. GAO (2009) report authors remarked that “the distribution of disability type has changed in some notable ways over time” (p. 19) and summarized some of the larger changes, but did not offer possible explanations as to why they occurred or question the accuracy of the data. Why, indeed, would self-reports of orthopedic and mobility impairments fall from 29.0% in 2000 to 15.1% in 2008, health impairments or problems fall from 17.3% in 2004 to 5.8% in 2008, attention deficit disorders increase from 6.7% in 2000 to 19.1% in 2008, and other disabilities fall from 13.2% in 2000 to 5.8% in 2004 and then rise to 15.0% in 2008? In contrast, the national percentages of students ages 6-21 in the 13 IDEA disability categories remained unchanged or changed by only 0.1% from year to year between 1998 to 2007 (Office of Special Education Programs, 2012, Table 13, p. 49). It might be argued that greater variability would be expected for NPSAS statistics given that survey’s smaller sample size, but the sample is actually quite large, with the 2008 sample numbering nearly 119,000 undergraduates of whom close to 12,500 reported having disabilities.

NPSAS Disability Statistics Seem to Lack Construct Validity

As noted earlier, Wolanin and Steele (2004) concluded that NPSAS 2000 disability results “simply lack face validity.” The term *face validity* is generally taken to refer to the extent that survey questions and instrument items make sense to respondents and elicit answers that reflect the target construct at an acceptable level. However, according to Cook and Beckham (2006), “prior distinctions of face, content, and criterion validity” are now increasingly being subsumed “with the unitary concept ‘construct validity,’ the degree to which a score can be interpreted as representing the intended underlying construct” (p. 166.e7).

Cook and Beckham (2006) identified five sources of evidence for assessing construct validity, of which two stand out with regard to the NPSAS’s disability-

related questions. One evidence source is correlation with scores from other instruments assessing the same construct. As noted by Horn and Berktold (1999), Wolanin and Steele (2004), and U.S. GAO (2009), NPSAS results often diverge substantially from other data sources.

Another relevant source of construct validity evidence is examination of how the interpretations of survey questions by respondents tend to lead to answers that reflect the intended construct to varying degrees of accuracy (Cook & Beckham, 2006). The results of any survey are highly dependent on the wording of items. The NPSAS disability-related questions are adapted from those of the American Community Survey (ACS), conducted annually by the US Census Bureau. There is an ACS Disability Working Group that assesses how wording affects reliability and validity, leading to occasional adjustments of disability-related questions, as was done for the 2003 and 2008 ACS surveys (<http://www.disabilitystatistics.org/faq.cfm#Q1dash>). Development of the 2008 revisions was guided by cognitive testing of various wording and format options when implemented via mail, telephone, or personal visits (Miller & DeMaio, 2006). Interviews with participants showed much variability in how they interpreted the wording of questions, with deciding whether their own conditions merited reporting being especially problematic. With regard to *learning*, which is of possible relevance for understanding why so few NPSAS respondents report having learning disabilities, participants reported the word evoked such thoughts as learning how to use a computer, what is needed to start a new career, or being open to new ideas.

The wording of the NPSAS’s disability-related questions does seem as though it might lead to misreporting of disabilities. The first of three questions asks students whether they have “long-lasting conditions” such as blindness, deafness, or a severe vision or hearing impairment. The second question asks whether they have “a condition that substantially limits one or more basic physical activities such as walking, climbing stairs, reaching, lifting, or carrying.” These two questions establish the presence of vision, hearing, and orthopedic or mobility disabilities. All other disabilities are identified through the third question, which asks students whether they have “any other physical, mental, or emotional condition that has lasted 6 months or more.” They are recorded as having a disability if they answer “yes” and *also* respond positively to follow-up questions about whether their condition makes it difficult for them to get to school, get around on campus, learn, dress, or work at a job (Horn & Nevill, 2006, p. A-10). Thus respondents are only exposed to the word

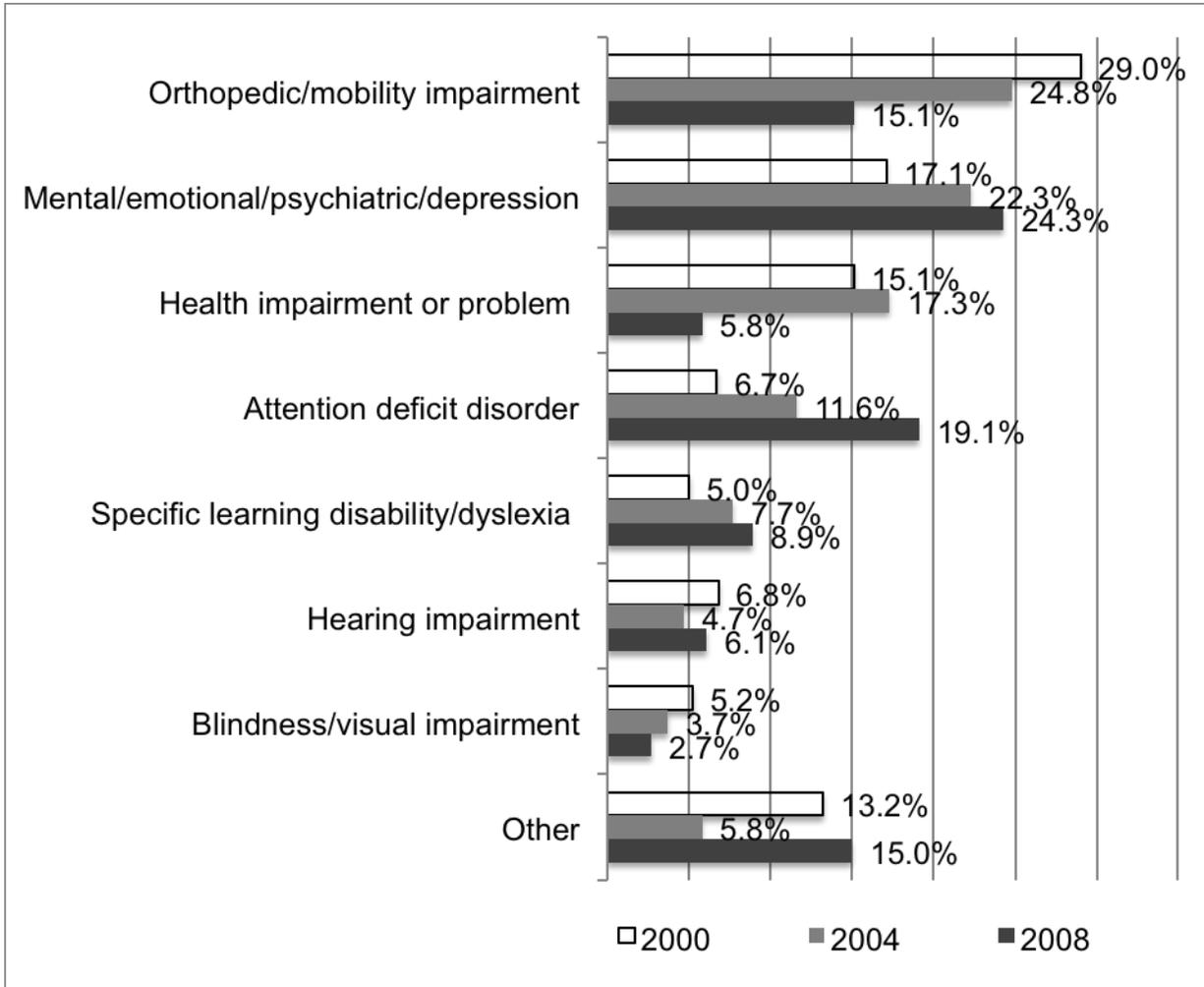


Figure 1. Breakdown of NPSAS Respondents Reporting Disabilities According to Percentages in Main Disability Categories, by Year of Quadrennial Administration.

“learn” if they answer “yes” to this third question. According to the cognitive research of Miller and DeMaio (2006), there is also much variability in interpreting this question’s phrase “physical, mental, or emotional condition.” Some of their participants, for example, interpreted it as referring mainly to mental health, and we might surmise that students with conditions like learning disabilities or attention disorders who interpret it similarly might answer “no” and become false negatives.

In summary, the NPSAS is seen to have serious shortcomings as a way to gain an accurate picture of postsecondary SWD. Similar problems are evident for survey data collected on other disability subpopulations (e.g., in the workforce), due to disability definition and measurement issues and the predominance of cross-sectional designs (Livermore, Whalen, Prenovitz, Aggerwal, & Bardos, 2011; Stapleton & Thornton, 2009). However, as described below, postsecondary SWD are one disability subpopulation for which higher quality longitudinal data are already available. These data also confirm that a potentially substantial bias of the NPSAS is that many postsecondary students may decide to not disclose their disabilities.

More Accurate Data from Major Longitudinal Studies

The two longitudinal studies cited by the U.S. GAO (2009) avoided the earlier described construct validity problem of how to phrase and present questions about disabilities in ways that consistently elicit accurate information. Instead of posing such questions, as is done during telephone interviews for the NPSAS, these studies categorized participants according to their “primary disability” as recorded in their school records. Of course, diagnostic practices and determinations for special education are known to be somewhat variable depending on the socioeconomic status and ethnic/racial heritage of students, geographic location, diagnostic trends, the predilections of individual diagnosticians, and so on (e.g., Donovan & Cross, 2002; Getahun et al., 2013; MacMillan & Siperstein, 2002; Rice et al., 2011). However, we can presume that, compared to the self-reports of postsecondary students, diagnoses for special education eligibility determination are likely to have much higher levels of validity (reflecting the IDEA definitions and adhering to the criteria of the Diagnostic and Statistical Manual of Mental Disorders or other authoritative guides) and reliability (assigning the same diagnoses when sets of signs and symptoms are more or less the same). One factor in the special education diagnostic process that supports validity and reliability is that it typically triangulates input from different perspectives within a

student’s multidisciplinary team, often including those of caregivers and the student (Reber, 2012).

One of the two studies in question is the U.S. DOE’s Education Longitudinal Study of 2002, which is following over 15,000 individuals who were high school sophomores when they were randomly selected at about 750 participating schools across the country (<http://nces.ed.gov/surveys/els2002/surveydesign.asp>). Data collected in 2006 indicated that of those participants who went on to postsecondary education, about 14% had been assessed as having disabilities at the time baseline data were collected in 2002 (U.S. GAO, 2009). This figure is somewhat higher, and presumably more accurate, than NPSAS results reported for the same timeframe (11.3% in 2004 and 10.9% in 2008). The study also found that 71% of these postsecondary SWD had been identified with learning disabilities at baseline, compared to the NPSAS 2008 figure of less than 10%.

The other longitudinal study appears to provide the most reliable and valid data available on the categorical breakdown of postsecondary SWD, because it has followed a much larger nationally representative sample of students in special education as they transitioned from high school into the early adult years. It also collected a broad range of data on numerous other issues, including that of self-disclosure. This is the NLTS2 that began following about 11,300 students in special education between the ages of 13 and 16 in school year 2000-2001. Data were then collected every two years through mail surveys and telephone interviews with youth themselves and/or their caregivers. Findings regarding postsecondary education are reported by Newman et al. (2011) for those who were between 21 to 25 years old and out of high school for between one month and up to eight years when the final data wave was conducted in 2009.

The NLTS2 found that high school students in special education, compared to their same-age peers without disabilities, go on to postsecondary education at significantly lower rates; are more likely to attend vocational-technical and two-year institutions and less likely to attend four-year ones; and are less likely to complete their postsecondary education programs (Newman et al., 2011). Table 1 shows the percentages of NLTS2 participants who had “ever enrolled” in postsecondary education by disability category and type of institution.

Comparison of NPSAS and NLTS2 Findings

The above discussion indicates that the NPSAS and NLTS differ in a number of significant ways. Regarding their purpose, the NPSAS is designed to examine how

Table 1

Percent of Young Adults with Disabilities out of High School for up to Eight Years Who “Ever Enrolled” in Postsecondary Education, by Primary Disability, According to NLTS2 (N = Approximately 4,800; Standard Errors in Parentheses)

% of N	Primary Disability ¹	Type of Postsecondary Institution Attended			
		Any	Voc-Tec	2-Year	4-Year
62.5% (2.60)	Learning disabilities	66.8% (3.89)	35.8% (3.96)	49.9% (4.13)	21.2% (3.38)
11.7% (1.73)	Intellectual disability	28.7% (3.60)	16.4% (2.94)	18.9% (3.12)	6.7% (1.99)
11.5% (1.71)	Emotional disturbance	53.0% (4.53)	33.3% (4.28)	37.7% (4.40)	10.8% (2.82)
4.6% (1.13)	Other health impairments ²	65.7% (4.04)	32.2% (3.98)	51.6% (4.25)	19.6% (3.38)
4.1% (1.07)	Speech or language impairments	66.9% (3.63)	28.5% (3.48)	46.0% (3.84)	32.5% (3.61)
1.6% (0.67)	Multiple disabilities	32.8% (5.07)	17.5% (4.10)	21.7% (4.45)	7.4% (2.83)
1.4% (0.62)	Hearing impairments	74.7% (4.24)	42.9% (4.84)	51.5% (4.88)	33.8% (4.62)
1.1% (0.57)	Orthopedic impairments	62.0% (4.42)	26.2% (4.08)	50.3% (4.56)	26.1% (4.00)
0.6% (0.42)	Autism	43.9% (4.65)	21.0% (3.82)	32.2% (4.38)	17.4% (3.56)
0.5% (0.37)	Visual impairments	71.0% (5.00)	26.2% (4.84)	51.5% (5.52)	40.1% (5.40)
0.3% (0.29)	Traumatic brain injury	61.0% (7.37)	36.9% (7.30)	42.4% (7.47)	18.5% (5.88)
0.1% (0.20)	Deaf-blindness	56.8% (7.09)	22.1% (6.21)	36.9% (7.30)	18.5% (5.88)
100%	All disabilities combined	60.1% (2.63)	32.3% (2.51)	44.2% (2.67)	18.8% (2.10)

Note. Table created with data reported by Newman et al. (2011) in Figure 1 (p. 16), Figure 2 (p. 18), Table 2 (p. 19) and Table B-1 (p. B-3), with Table 2 providing the following note: “Young adults who had enrolled in more than one type of postsecondary school were included in each type of school they had attended....NLTS2 percentages are weighted population estimates based on samples that range from approximately 4,770 to 4,810 young adults with disabilities.”

¹ The disability categories are those used by the US DOE for classifying students served under the IDEA (the “developmental delay” category is not included in the table because it was not employed by the NLTS2).

² Other health impairments are defined by the IDEA as chronic or acute health problems that adversely affect educational performance. The most common are attention deficit disorders, with other examples including asthma, diabetes, epilepsy, and heart conditions.

postsecondary students finance their educations, taking a cross-sectional snapshot every four years, while the NLTS tracks how former students in special education fare after they exit high school for up to eight years. The demographic information collected by the NPSAS includes self-reported disability status, the results for which are used to fill the statistical gap left by the lack of statutory requirements for postsecondary institutions to collect and report data on their SWD populations. The NPSAS disability data are suited for this role in that they are gathered using widely used survey items based on the disability definition of the ADA, which governs the treatment of postsecondary SWD. By contrast, the NLTS classifies its participants according to the disability categories specified by the IDEA for students in the P-12 system.

Although the NPSAS and NLTS disability categories do not exactly match, it is informative to compare their disability profiles. Table 2 compares the results of the NPSAS 2008 and the NLTS2. NLTS2 findings are shown at the left according to the standard “primary disability” categories of the US DOE, while the NPSAS findings are at the right with its “main conditions” lined up according to their closest matches with the NLTS2 categories. The results are seen to be quite different for each of the disability categories. The most divergent results are those for *orthopedic impairment* of the NLTS2 versus *orthopedic/mobility impairment* of the NPSAS, with the latter’s proportion of postsecondary SWD being 14.1 times larger than the former’s. The least divergent results are those for the NLTS2’s *emotional disturbances* versus the NPSAS’s combination of two categories, *mental, emotional, or psychiatric conditions* plus *depression*, with the latter’s proportion of postsecondary SWD being 2.3 times larger than the former’s. The divergent results of perhaps greatest import are those for learning disabilities (because learning disabilities are by far the most common primary disability of postsecondary SWD), with the NLTS2 reporting a rate of enrollment 7.6 times that of the NPSAS.

There are undoubtedly numerous factors contributing to these divergent results. As noted earlier, we would expect student self-reports to generally be less valid and reliable (relative to U.S. DOE disability definitions and criteria in diagnostic guides) compared to the assessments of diagnosticians. Results probably also differ to an extent because special education eligibility is based on determination that identified disabilities pose barriers to learning, while the NPSAS elicits reports of disabilities that impair functioning in any daily life domain, not just learning. However, the most significant reason for the great divergence

between NLTS2 and NPSAS results appears to be the reluctance of many postsecondary SWD to self-disclose their disabilities as required by the NPSAS. This issue will be discussed in the following section.

The different target populations of the two studies are worth further delineating. The individuals tracked by the NLTS2 comprise a group of particular concern because their disabilities had, during their P-12 years, been assessed to interfere with their learning and they would presumably experience greater postsecondary education access and success if given appropriate supports and accommodations. The broader group targeted by the NPSAS, which includes students with disabilities that may not impact the learning domain, is also of concern because disability stigma is pervasive and potentially impacts all postsecondary SWD (Belch, 2005; Trammel, 2009b).

Likely members of this broader group include P-12 students with disabilities who did not receive services under the IDEA. An unknown proportion of these students received Section 504 accommodations to ensure their equal access to the school environment. In contrast to the IDEA, Section 504 does not require data collection on numbers of students involved. Holler and Zirkel (2008) conducted a national survey of a representative sample of schools and estimated that about 1.2% of all students could be classified as “504 only.” In comparison, the national special education rate was 13.0% of total enrollment in 2010-2011, the latest year for which NCES data are available (<http://nces.ed.gov/fastfacts/display.asp?id=64>). Another group not covered by the NLTS2 would be individuals who incurred disabilities after leaving high school due to accidents, manifestation of chronic physical or mental illnesses, combat injuries while serving in the military, and so on. However, these other groups appear to be much smaller than that of postsecondary SWD who had previously received special education services.

The Issue of Self-disclosure of Disabilities

The NLTS2 queried its participants who had “ever enrolled” in postsecondary education about self-disclosure to their institutions and found that 28% reported doing so, with most then taking advantage of available disability services and classroom accommodations. Most postsecondary SWD in this group would presumably report having disabilities if participating in the NPSAS. The question then becomes: What is the likelihood that postsecondary SWD who do not self-disclose to their institutions will self-disclose when asked NPSAS disability questions?

Table 2

Comparison of Proportional Representation of Disability Categories in Postsecondary Education Enrollment, NLTS2 versus NPSAS

NLTS2 “Primary Disability” ¹	% of SWD	% of SWD	NPSAS “Main Condition” ²
Learning disability (LD)	69.5%	9.1%	Specific LD or dyslexia
Emotional disturbance	10.1%	23.6%	Mental/emotional/psychiatric condition + depression
Intellectual disability	5.6%	0.9%	Developmental disability
Other health impairment	5.0%	24.6%	Health impairment + ADD
Speech/language impairment	4.6%	0.9%	Speech/language impairment
Hearing impairment	1.7%	6.4%	Hearing impairment
Orthopedic impairment	1.1%	15.5%	Orthopedic/mobility impairment
Multiple disabilities	0.9%		
Visual impairment	0.6%	2.7%	Blindness or visual impairment
Autism	0.4%		
Traumatic brain injury	0.3%	1.8%	Brain injury
Deaf-blindness	0.1%		
		14.5%	Other
TOTAL	100%	100%	

¹ Percent of young adults with disabilities who “ever enrolled” in any postsecondary program after leaving high school for up to eight years; percentages calculated using data collected in 2009 and reported in Newman et al. (2011, Table 2, p. 19, and Table B-1, p. B-3).

² Percent of postsecondary students who reported having a physical or mental impairment that affected their daily functioning; data collected during school year 2007-2008 and reported in U.S. GAO (2009, Table 7, p. 38).

The NLTS2 results suggest the likelihood is low. A surprising finding was that 63% of study participants who had “ever enrolled” in postsecondary education responded to questions about self-disclosure to their institutions by stating *they did not even consider themselves to have disabilities* (another 9% considered themselves to have disabilities but did not self-disclose) (Newman et al., 2011). Further insight was gained by breaking down these results according to disability categories. Participants with “hidden” disabilities – defined as those that are generally not obvious to others during casual interactions – were much more likely to state they did not have disabilities, at rates over 60%. Common hidden disabilities include learning disabilities, attention disorders, chronic diseases such as diabetes, and psychiatric disorders such as depression. As shown in the NLTS2 portion of Table 2, the great majority of postsecondary SWD have hidden disabilities.

One explanation that might come to mind for the high rate of students not considering themselves to have disabilities could be the possibility that some may have “outgrown” their learning disabilities or attention disorders. However, the consensus in the field is that this once-common view is wrong and learning disabilities and attention disorders are usually lifelong conditions (e.g., Resnick, 2005). On the other hand, people with these conditions can certainly improve how they manage their challenges over time (Corley & Taymans, 2002) and might therefore conclude they should no longer be classified as having disabilities.

It is beyond the scope of this review to go deeper into the complex issue of self-disclosure. Interrelated topics of relevance for non-self-disclosure on which there have been research reports or reviews in the literature include:

- Experiences of being stigmatized that make postsecondary SWD want to keep disabilities hidden (Belch, 2011; Litner, Mann-Feder, & Guerard, 2005; Price, Gerber, Mulligan, & Williams, 2005; Trammel, 2009a, 2009b);
- Use of information or perception management to control who finds out what information about one’s disabilities (Deschamps, 2001; Gerber & Price, 2008; Higbee, Katz, & Schultz, 2010; Olney & Brockelman, 2003; Trammel, 2009a); and
- Self-identity formation, which may involve acceptance or rejection of one’s disability status (Marshak, Van Wieren, Ferrell, Swiss, & Dugan, 2010; Najarian, 2008; Olney & Brockelman, 2005; Olney & Kim, 2001; Rodis, Garrod, & Boscardin, 2001), and which

is likely to be a more problematic process for those with hidden compared to obvious disabilities (Adams & Proctor, 2010; Davis, 2002; Valeras, 2010).

Conclusion

There is no “right” answer to the question, “How many students in postsecondary education have a disability?” It depends on how the realm of disabilities is sliced and how the slices are defined. The NLTS employs the IDEA categories, which have the virtue of being well-established throughout the P-12 system for decades, with assessments typically employing validated instruments and often using information from multiple perspectives. The NPSAS and a number of other surveys use items that reflect the ADA functional definition of disability and depend on individual students to understand the intent of the questions they are asked and to self-disclose the disabilities they may have.

Currently, the US DOE’s “official” statistics on postsecondary SWD are those obtained through its NPSAS, which however appear to “simply lack face validity” (Wolanin & Steele, 2004). The corresponding figures reported for the NLTS2 appear to be of acceptable reliability and validity, although they do omit the relatively small populations of postsecondary SWD who were served in the P-12 system under Section 504 or were not identified with disabilities at all, or who developed disabilities after leaving high school.

One obvious conclusion is that the NCES should halt dissemination of the NPSAS disability figures unless their reliability and validity can be substantially improved – something, however, that appears impossible to achieve in view of the reluctance of many postsecondary SWD to disclose their disabilities to others.

Instead, the NCES could better meet the IDEA’s post-school evaluation mandate and get more value for the NLTS investment by analyzing existing NLTS data to produce and disseminate more accurate estimates of the numbers and proportions of postsecondary students with different disabilities. Heretofore NLTS2 results do not seem to have been provided in a format showing the proportions of postsecondary students in different disability categories. Table 2 above was created from published NLTS2 data to show the categorical proportions of participants who had “ever enrolled”. What is also needed is the categorical breakdown for particular school years. Given the NLTS2 finding of different patterns of postsecondary education enrollment and persistence for different disabilities (Newman et al., 2011), we would not expect the proportions of students with different disabilities who had “ever enrolled” to

match those for students attending during a particular year. For example, we might expect a higher percentage of individuals with more severe disabilities (e.g., intellectual disabilities) to be in the “ever enrolled” than the “enrolled this school year” group because they might be more likely to drop out or be in short-term programs than peers with less serious disabilities.

One drawback of relying on the NLTS is that it is not implemented on a regular schedule and it can take close to a decade to get the final results – but less frequent “good” data are surely preferable to more frequent “bad” data. The third iteration of the NLTS, known as the NLTS 2012, is now underway (<http://ici.umn.edu/index.php?projects/view/135>). It is following a nationally representative sample of about 12,000 high school students with IEPs, and is an improvement over previous versions in that it is also following about 700 students on Section 504 plans and, for comparison, about 3,000 general education students (the two previous NLTS studies made comparisons between their participants with disabilities and the general population of same-age peers using data from other national studies, which was less than ideal due to differing study methodologies and samples).

The focus of this article has been on national data on postsecondary SWD and, as such, may be primarily of interest to scholars, advocates, and others examining postsecondary education disability issues from a broad perspective. However, even highly accurate national data might lack relevance for individual postsecondary institutions, since there is certainly great variability in the SWD populations they serve. Yet disability support personnel and administrators could benefit from knowing the extent and kinds of common disabilities on a campus in order to support outreach to “hidden” populations and better tailor services to their needs, which might encourage more SWD to self-disclose and gain the supports to which they are entitled.

One option for examining the SWD population at any postsecondary institution is to use a commercially available survey, such as the previously mentioned ACHA National College Health Assessment, second version (ACHA-NCHA II). This survey would be particularly suited for an institution wanting insight into a wide range of health-related issues on campus, including disability status. However, this survey appears to yield rather high disability percentages, with respondents reporting having disabilities in the nine categories that added up to 23.2% in Spring 2009 and 30.7% in Spring 2013 (see reports at <http://www.acha-ncha.org/>, which however do not clarify what proportion of students reported multiple disabilities so the overall rate of students with disabilities could be calculated).

The ACHA-NCHA II results suggest that simply asking about the presence of particular disabilities may yield rates that are higher than are likely to qualify for disability support services under the ADA. To get a more accurate view of what might be called an institution’s “ADA population” may therefore require expanding survey items to include ratings of the level or intensity of reported disabilities. However, the author is unaware of an existing survey instrument suited to this purpose. This gap poses a challenge to disability support personnel or researchers to consider developing such an instrument, which could be of much practical value for postsecondary institutions around the country.

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