

1. Young Adults With Disabilities: Study Background and Methods

Increasingly, researchers are contending that changes in the latter part of the 20th century and the early 21st century have prompted a reconsideration of the notion of adolescence (e.g., Fussell and Furstenberg 2005)—a developmental stage encompassing the years between 11 and 18 (Hall 1904)—being immediately followed by adulthood—a stage marked by “completion of schooling, movement from the parental household, entrance into the labor force, formation of partnerships, and the onset of childbearing and parenting” (Furstenberg, Rumbaut, and Settersten 2005). They suggest that, among other social shifts, an increasing emphasis on postsecondary education and the growing struggles postadolescents face in becoming economically self-sufficient elongate or postpone the transitions usually associated with adulthood. Recognizing this reality, a growing body of research is focusing on the period of “early adulthood,” ages 18 through 34 (Furstenberg, Rumbaut, and Settersten 2005), as distinct from adolescence and full adulthood (e.g., Arnett 2001; Arnett 2002). The John T. and Catherine D. MacArthur Foundation Research Network on Transitions to Adulthood and Public Policy recently assembled an extensive collection of analyses of the social forces shaping the early adult period and the experiences that characterize it (Settersten, Furstenberg, and Rumbaut 2005). After reviewing the available data, however, the authors concluded that a need remains to “pioneer research efforts aimed at understanding the new frontiers of early adult life” (Settersten, Furstenberg, and Rumbaut 2005).

The National Longitudinal Transition Study-2 (NLTS2) provides a unique source of information to help in developing an understanding of the experiences of secondary school students with disabilities nationally as they go through their early adult years. NLTS2 addresses questions about youth with disabilities in transition by providing information over a 10-year period about a nationally representative sample of secondary school students with disabilities who were receiving special education services under the Individuals with Disabilities Education Act (IDEA) in the 2000–01 school year. This document uses information about these former secondary school students to describe the experiences of young adults with disabilities in the postsecondary education, employment, independence, and social domains in their first 8 years out of high school. Specifically, this report addresses questions that reflect critical domains of young adulthood that are central to the purpose of IDEA as expressed in 20 U.S.C. 1400(d)(1)(A) to “prepare them [children with disabilities] for future education, employment, and independent living.” These questions are the following:

- What is the pattern of enrollment in various kinds of postsecondary schools for young adults with disabilities? What are the characteristics of postsecondary education for young adults with disabilities (e.g., stability of enrollment, full- vs. part-time enrollment, field of study, receipt of services and supports)? What are the postsecondary school completion rates for young adults with disabilities who have ever enrolled in postsecondary programs?
- What are the employment experiences of young adults with disabilities (e.g., employment status, hours worked, types of jobs, accommodations received)? What reasons did young adults with disabilities report for having left their most recent jobs and what were the job search activities of those who were unemployed?

- How engaged are young adults with disabilities up to 8 years after high school in terms of involvement in postsecondary education, training, or employment?
- What are the household circumstances of young adults with disabilities after high school in terms of living arrangements, marriage and family formation, and economic circumstances?
- To what extent are young adults with disabilities involved in their communities in both positive (e.g., belonging to organized groups, doing volunteer/community service activities) and negative (e.g., criminal justice system involvement) ways? What are the characteristics of the leisure and social lives of young adults with disabilities?
- How do the post-high school experiences of young adults with disabilities compare with those of their peers in the general population?
- How do post-high school experiences differ for young adults with disabilities in different disability categories and for those with different levels of educational attainment, length of time since leaving high school, and demographic characteristics?⁶

To address these questions, this report focuses on the subset of young adults with disabilities who were out of secondary school for up to 8 years and were 21 to 25 years old⁷ when telephone interviews were conducted with their parents and, whenever possible, with the young adults themselves in 2009, during the fifth and final wave of data collection for NLTS2.⁸

Study Overview

NLTS2 is a 10-year-long study of the characteristics, experiences, and outcomes of a nationally representative sample of youth with disabilities who were 13 to 16 years old and receiving special education services in grade 7 or above on December 1, 2000. NLTS2 findings generalize to youth with disabilities nationally and to those in each of the 12 federal special

⁶ Demographic characteristics include gender, parents' household income, and race/ethnicity. Findings are reported for White, African American, and Hispanic young adults with disabilities; other racial/ethnic categories of young adults were too small (less than 3 percent of the population of youth with disabilities) to report findings for them separately. Household income was categorized based on the three categories used in the data collection instrument, (i.e., \$25,000 or less, \$25,001 to \$50,000, and more than \$50,000). NLTS2 household income item categories were based on a review of general population statistics to ensure that the household income response categories fairly evenly divided the population. In NLTS2 Wave 1 the income breakdown was 35 percent for the category of \$25,000 or less, 31 percent for \$25,001 to \$50,000, and 34 percent for more than \$50,000. For consistency across the report, all comparisons are presented for all variables unless otherwise noted in a section (i.e., by length of time out of high school, high school completion status, disability category, age, gender, household income, and race/ethnicity.)

⁷ The age of young adults with disabilities in 2009 was based on birthdates provided by parents during interviews and the date of the Wave 5 interview.

⁸ This report is an update of a report on analyses conducted of data from the third wave of NLTS2 data collection, when youth had been out of high school up to 4 years and were ages 17 through 21. The organization and content of this report intentionally mirror the Wave 3 report very closely, including the figures and table shells used and some context-setting text. The report focusing on the fourth wave of NLTS2 data collection, when youth had been out of high school up to 6 years is an abbreviated look at key post-high school outcomes (e.g. postsecondary enrollment and employment status) and does not include the post-high school experiences, such as focus of postsecondary coursework or type of job, that are included in this report.

education disability categories in use for students in the NLTS2 age range.⁹ (Details of the NLTS2 design, sample, and analysis procedures are presented in appendix A.)¹⁰ The study was designed to collect data on sample members from multiple sources in five waves, beginning in 2001 and ending in 2009.¹¹

The NLTS2 sample was constructed in two stages, beginning in the 2000-2001 school year. The NLTS2 district sample was stratified to increase the precision of estimates, to ensure that low-frequency types of districts (e.g., large urban districts) were adequately represented in the sample, to improve comparisons with the findings of other research, and to make NLTS2 responsive to concerns voiced in policy debate (e.g., differential effects of federal policies in particular regions, districts of different sizes). Three stratifying variables were used: region, size (student enrollment), and community wealth. A stratified random sample of school districts was selected from the universe of approximately 12,000 that served students receiving special education in at least one grade from 7th through 12th grades. These districts were invited to participate in the study, with the intention of recruiting approximately 500 districts. For NLTS2 to be nationally representative of youth with disabilities who attended the most common types of publicly supported schools, the 77 state-supported “special schools”—i.e., those that primarily served students with hearing and vision impairments and multiple disabilities—were invited to participate.

The goal was to select from these districts and special schools a target sample of about 12,000 students. Extensive efforts to obtain consent to participate from eligible districts and the known universe of special schools resulted in 501 school districts and 38 special schools agreeing to participate in NLTS2. Analyses of the NLTS2 district sample revealed that it closely resembled the universe of districts from which it was drawn on the sample’s stratifying variables and on selected variables from the U.S. Department of Education’s Office of Civil Rights database on the universe of school districts. Participating school districts and special schools provided rosters of students receiving special education services in the designated age range, from which the student sample was selected.

The roster of all students in the NLTS2 age range who were receiving special education services from each district and special school was stratified by primary disability category, as reported by the districts. Students then were selected randomly from each disability category. Sampling fractions were calculated that would produce enough students in each category so that, in the final study year, findings would generalize to most categories individually with an acceptable level of precision, accounting for attrition and for response rates to the parent/youth

⁹ The definitions of the 12 primary disability categories used here are specified by law and presented in table A-4, appendix A.

¹⁰ Additional information about NLTS2 is available at www.nlts2.org.

¹¹ Wave 1 included parent interviews (2001), surveys of school staff (2002), and assessments of the academic abilities of students who were 16 to 18 years old in 2002. Wave 2 involved interviews with both parents and youth (2003), a mail survey of youth whose parents reported they were able to respond to questions but not by phone (2003), school staff surveys for youth still in high school (2004), and assessments of the academic abilities of youth who were 16 to 18 years old in 2004. Wave 3 (2005) repeated the telephone interviews and mail survey of youth, as in Waves 4 and 5 (2007 and 2009). High school transcripts were collected annually for youth leaving high school each year.

Table 1. NLTS2 data sources for post-high school experiences of young adults with disabilities included in this report

Source	Approximate number	Percent of young adults included in this report
Total number of sample members with responses to Wave 5 survey known to be out of secondary school at the time of the Wave 5 data collection	4,810	100.0
Youth telephone interview	2,360	49.0
Youth mail questionnaire	760	16.0
Parent telephone interview	1,690	35.0
Number in Wave 5 report and out of school in Wave 4, with Wave 4 survey data coming from	3,980	83.0
Youth telephone interview	2,100	44.0
Youth mail questionnaire	330	7.0
Parent telephone interview	1,550	32.0
Number in Wave 5 report and out of school in Wave 3, with Wave 3 survey data coming from	2,080	43.0
Youth telephone interview	1,320	27.0
Youth mail questionnaire	160	3.0
Parent telephone interview	600	14.0
Number in Wave 5 report and out of school in Wave 2, with Wave 2 survey data coming from	860	18.0
Youth telephone interview	560	12.0
Youth mail questionnaire	50	<1.0
Parent telephone interview	250	5.0
Number in Wave 5 report with Wave 1 survey data		
Parent interview	4,660	97.0
High school transcript	3,630	75.0
School and school district student rosters	4,810	100.0

interview. A total of approximately 11,280 students¹² were selected and eligible to participate in NLTS2.

Data Sources for Young Adults With Disabilities

This section presents the multiple data sources used in this report to describe the post-high school experiences of young adults with disabilities at the time of the Wave 5 interview, who were known to be out of secondary school at the time of the Wave 5 data collection. Appendix A includes a description of the overall response rates for each wave of data collection.

Primary sources used in this report were the Wave 5 youth telephone interview and mail survey or the Wave 5 parent telephone interview, conducted in 2009.¹³ In addition, those variables that describe young adults' experiences since leaving high school were constructed on the basis of data from the Waves 2 through 4 (conducted in 2003, 2005, and 2007, respectively) youth telephone interviews and mail surveys or the Waves 2 through 4 parent telephone interviews for young adults who were out of high school at that time. School district rosters, high school transcripts, and the Wave 1 parent interview or mail survey also provided a small amount of the data used in this report. Each data source for

young adults with disabilities is described briefly below and discussed in greater detail in appendix A.¹⁴

¹² All unweighted sample sizes included in the text, figures, and tables of this report are rounded to the nearest 10, per IES Disclosure Review Board requirements.

¹³ NLTS2 instruments are available at www.nlts2.org.

¹⁴ Because the data reported here come primarily from telephone interviews or mailed surveys that were requested by respondents during a telephone contact, no prior consent was required; respondents were free to indicate their consent by continuing with the interview or to decline and hang up. Interviewers provided respondents with the following information:

The data for this report were obtained on approximately 4,810¹⁵ NLTS2 sample members with responses to the Wave 5 survey who were known to be out of high school at the time of the Wave 5 data collection in 2009 (table 1).

Young Adult/Parent Data

Wave 5 Data

Much of the information reported in this document comes from young adults with disabilities themselves in the form of responses to either a telephone interview or a self-administered mail survey with a subset of key items from the telephone interview.¹⁶ Data for young adults who were reported by parents to be unable to respond to an interview or complete a questionnaire or who did not respond to interview or survey attempts were provided by parents. Data from the three sources were combined for the analyses reported here and subsetted to include only data for out-of-high school young adults.

Youth telephone interview. NLTS2 sample members who were eligible for a Wave 5 youth telephone interview were those (1) for whom working telephone numbers or addresses were available so that they could be reached by phone and (2) whose parents or guardians (referred to here as parents) had reported in the Wave 2 parent telephone interview (if interviewed at that time) or in later-wave parent interviews (if interviewed in later waves for the first time) that the young adult could answer questions about his or her experience by phone (a total of approximately 4,180 young adults).¹⁷ At those times, after making the initial telephone contact with the parents of sample members and completing items intended only for parent respondents, parents were asked whether their children with disabilities were able to respond to questions about their experiences by telephone for themselves. Parents who responded affirmatively and whose sample children were younger than age 18 then were asked to grant permission for their children to be interviewed and told the kinds of questions that would be asked.¹⁸ Parents of those 18 or older were informed of the kinds of questions that would be asked of the young adult, but

“This interview is voluntary. Everything you say will be kept completely confidential and you may choose not to answer any question that I ask you. Nothing you say will ever be reported individually about you, [YOUTH if parent was respondent], or your family, and no information you give will be shared with [YOUTH/YOUR] school. If you have any questions or concerns about the study, I can give you a toll-free number to call.”

¹⁵ All unweighted sample sizes included in the text, figures, and tables of this report are rounded to the nearest 10, per IES requirements.

¹⁶ Only a subset of items was included in the mail survey because the full set of items was considered too lengthy to be feasible for a mail questionnaire format.

¹⁷ See appendix A for more information on sample eligibility and a discussion of response rates for each wave of data collection.

¹⁸ Parents were told that interview questions would pertain to “school or work and social activities, as well as a few questions about things like....” For youth younger than 18, the sentence was completed with “[his/her] attitudes and experiences, like ever having been arrested.” For youth age 18 or older, the sentence was completed with “[his/her] attitudes and experiences, including smoking, drinking, and ever having been arrested”; items related to these kinds of risk behaviors were asked only of youth age 18 or older. A total of 164 parents reported that their children could respond to the telephone interview but did not give permission for their children to be interviewed (4 percent of those reportedly able to respond); the interview then continued with the parents and obtained additional information on such subjects as employment and postsecondary education. Analyses of the disability category distribution and demographic factors of youth who were able to respond and given permission to do so and those who were not permitted to be interviewed revealed no significant or sizable differences between the two groups.

permission was not requested because they were no longer minors. Interviewers obtained contact information for these young adults and attempted to complete telephone interviews with them.

Wave 5 telephone interviews were completed with approximately 2,410 young adults, 77 percent of the approximately 4,180 who were eligible.¹⁹ Approximately 2,360 telephone interview respondents to the Wave 5 telephone interview were out-of-high school young adults, the focus of this report.

Youth mail survey. If parent respondents to the telephone interview indicated that their children with disabilities were not able to respond to questions about their experiences for themselves by telephone, interviewers asked whether they would be able to complete a mail questionnaire; young adults respondents also could request that they be sent a mail questionnaire, rather than respond to the phone interview. Mailing addresses were obtained for those sample members, and questionnaires were sent to the young adult. In addition, questionnaires were tailored to the circumstances of individual young adults. For example, if a parent indicated in the telephone interview that a young adult was employed, the questionnaire for that young adult contained a section on employment experiences, which was not included in questionnaires for young adults reported not to be employed. Questionnaires were returned by approximately 790 young adults, 40 percent of the approximately 2000 young adults who were mailed a survey. Approximately 760 mail questionnaire respondents were out-of-high school young adults who are part of the sample that generated the findings reported in this document.²⁰

Parent/guardian interview. In addition to sample members who completed a telephone interview or mail survey, parents completed a telephone interview for sample members who did not respond for themselves either because they were reported not to be able to do so or because young adults who were reported to be able to respond could not be reached or refused to respond. In the latter case, parents were contacted to complete a subset of interview items that experience demonstrated could readily be answered by many parents (e.g., whether a young adult was employed or enrolled in postsecondary education). Approximately 1,690 young adults for whom parents were the sole respondents were out of secondary school and are included in the sample that forms the basis of this report. Out-of-high school young adults whose parents responded for them did not differ significantly in their disability category, age identified as having a disability, age when first special education services were received, health status, or most functional abilities, with one exception. Young adults whose parents responded for them were less likely to have been reported to have high functional abilities than were those who had responded for themselves (56 percent vs. 74 percent; appendix B provides detailed information regarding comparisons between these groups).

¹⁹ If a young adult could not be reached by phone or did not return a mailed questionnaire, an attempt was made to recontact the parent and complete the second part of the telephone interview with the parent, if the young adult had not indicated that the parent should not be contacted. Material included in the lead letters mailed to young adults prior to the interviews and introductory language in the phone interview informed young adults that they could refuse to have their parents contacted. The second part of the parent interview included only items readily answerable by many parents about their young adult children with disabilities; 18 percent of parent part 2 interviews were completed by parents after the young adult could not be reached.

²⁰ Readers should be aware of the potential for differences in reports across modes of data collection (i.e., mail questionnaire vs. telephone interview). Differences between mail and telephone samples (e.g., the mail sample included more youth with hearing impairments) did not support examining these potential differences in data collection mode.

Wave 2 Through Wave 4 Data

As mentioned previously, several variables that were created for this report indicate whether a young adult had had a particular experience “since high school” (e.g., postsecondary enrollment, employment and independent living arrangements). Seventeen percent of out-of-high school respondents (approximately 830 young adults) had left high school since the Wave 4 data collection; thus, Wave 5 data are all that are required to generate values for these variables for them. However, the remainder of the out-of-high school respondents (approximately 3,980 young adults) were already out of high school in Wave 2, 3, or 4. Thus, data from prior waves needed to be taken into account to generate values for variables measuring experiences “since high school.” Prior-wave data also were used to determine whether young adults had completed high school or left without completing and the year in which they left. Wave 2 through Wave 4 data collection mirrored procedures followed for Wave 5. The Wave 4 youth telephone interview produced data for approximately 2,100 young adults included in the sample that forms the basis of this report, the mail questionnaire generated data for approximately 330 young adults, and parent interviews provided data for approximately 1,550 young adults, for a total of approximately 3,980 sample members. The Wave 3 youth telephone interview produced data for approximately 1,320 young adults included in the sample that forms the basis of this report, the mail questionnaire generated data for approximately 160 young adults, and parent interviews provided data for approximately 600 young adults, for a total of approximately 2,080 sample members. The Wave 2 youth telephone interview produced data for approximately 560 young adults included in the sample that forms the basis of this report, the mail questionnaire generated data for approximately 50 young adults, and parent interviews provided data for approximately 250 young adults, for a total of approximately 860 sample members.

Because of the relatively small percentage of young adults enrolled in postsecondary schools at the time of the Wave 5 interview, Wave 2 through Wave 4 data also were used to augment data for variables related to the postsecondary education experiences of students who had been enrolled in these types of schools in prior waves but not in Wave 5. Variables included those related to timing and intensity of enrollment, course of study, receipt of accommodations and supports, and postsecondary school completion. Including earlier wave data increased the sample size, enabling broader analyses of these variables, particularly analyses by disability category. For these variables, for young adults who did not have Wave 5 postsecondary school data but who were out of high school and enrolled in postsecondary school in an earlier wave, data from the most recent wave in which they had been enrolled in postsecondary education were combined with the responses of postsecondary attendees in Wave 5.

Wave 1 Data

The initial wave of NLTS2 data collection involved parent telephone interviews and a mail survey of parents who could not be reached by telephone. Data for two demographic items (gender and race/ethnicity) were drawn from these Wave 1 sources for 4,660 young adults with disabilities included in the sample that forms the basis of this report.

High School Transcripts

High school completion status and high school leave date were based on data from high school transcripts. Final high school transcripts were requested for all NLTS2 sample members. Transcript data were collected for approximately 3,630 young adults included in this report. For

those for whom transcript data were not available, school completion status and leave dates were based on information from parent/youth interviews.

School and School District Student Rosters

Information about the primary disability category of NLTS2 sample members came from rosters of students in the NLTS2 age range receiving special education services in the 2000–01 school year under the auspices of participating school districts and state-supported special schools. Additionally, data on the racial/ethnic background of sample members were taken from this source when they were included on rosters. In the absence of roster data on youth's racial/ethnic background, data were taken from the Wave 1 parent interview or mail survey. The student rosters and the parent interview/mail survey provided similar racial/ethnic classifications.

Data Sources for Comparisons With Young Adults in the General Population

When similar data items were available, comparisons were made between young adults with disabilities and the same-age young adults in the general population. The analyses approach used for the general population data bases mirrored the approach used for NLTS2 data.²¹ Comparison data were taken from:

- The National Longitudinal Survey of Youth, 1997 (NLSY97). This study includes a nationally representative sample of approximately 9,000 youth who were 12 to 16 years old as of December 31, 1996. Round 1 of the survey took place in 1997. In that round, both the eligible youth and one of each youth's parents received hour-long personal interviews. Youth have continued to be interviewed annually. Comparison data were taken from the 2005 data collection for young adults who were 21 to 25 years old and out of high school at the time to match the sample of NLTS2 young adults included in this report. Calculations were made from public-use data available at <http://www.nlsinfo.org/web-investigator/webgator.php>. NLSY data collected in 2005 were the best match for NLTS2 2009 data because of the age of the young adults in both data sets at those time points, however readers should note the 4 year difference between the two data collection periods. Readers also should be aware that the population of young adults with disabilities in this age range differs from the general population of young adults in ways other than disability status (e.g., the population of young adults with disabilities is 64 percent male; see appendix B for further description of the population represented in NLTS2). In addition, there is a 4 year difference between NLTS2 data collected in 2009 and NLSY data collected in 2005.
- The National Longitudinal Study of Adolescent Health, Wave 3. Comparisons with the general population regarding financial independence, reported in chapter 5, are based on the public-use version of the National Institutes of Health, National Institute of Child Health and Human Development (NICHD), National Longitudinal Study of Adolescent

²¹ Young adults with disabilities are included in the general population comparison sample because excluding them would require using self-reported disability data, which frequently are not an accurate indicator of disability, resulting in both over- and underestimations of disability. For example, a large proportion of self-identified disabilities in postsecondary school are visual impairments because of confusion by students who wear glasses. In addition, NLTS2 findings indicate that less than one-third (32 percent) of youth who were identified by their secondary school as having a disability consider themselves to have a disability by the time they are age 17 or older.

Health (Add Health), Wave 3, a nationally representative study that explores health-related behaviors of adolescents in grades 7 through 12 and their outcomes in young adulthood. Wave 3 data were collected in 2001–02. Comparisons included a subset of respondents who were 21 to 25 years old. The time period for Add Health Wave 4, collected in 2007–08 would have been a more appropriate comparison for the 2009 Wave 5 NLTS2 data; however, the items related to financial independence were not collected in Add Health Wave 4.

- Current Population Survey (CPS) 2009. Several items regarding the employment of young adults in the general population were taken from the Current Population Survey (CPS) 2009. The CPS is a monthly survey of 50,000 households conducted by the Bureau of the Census for the Bureau of Labor Statistics. The nationally representative sample included in this monthly survey was selected to represent the civilian noninstitutional population in the United States. Comparison data for this report were taken from the May 2009 data collection for young adults who were 21 to 25 years old and out of high school. Calculations were made from public use data available at <http://www.census.gov/cps/>, using the Data Ferret Web tool.²²

Young Adults Included in the Report

The young adults with disabilities who are the focus of this report represent only a subset of young adults with disabilities who received special education services in secondary school in 2000–01, not the entire population. The full population to which the NLTS2 sample generalizes is a cohort of young adults who were 13 to 16 years old and received special education services in grade 7 or above in participating schools and school districts as of December 1, 2000. Weights for analyses reported in this document were calculated so that all young adults with disabilities who were out of secondary school and for whom a telephone interview or mail survey was completed or for whom parents responded to the second part of the parent interview generalize to all young adults with disabilities who were out of high school. Weights were computed adjusting for various youth and school characteristics used as stratifying or poststratifying variables. (See appendix A for additional information related to sample weighting.)

Analysis Approaches

Analyses reported in this document involve simple descriptive statistics (e.g., percentages, means) and bivariate relationships (i.e., cross-tabulations). All statistics were weighted to be representative of a larger population of young adults (as discussed earlier). These analysis approaches excluded cases with missing values; no imputation of missing values was conducted.²³

²² CPS variables were combined to make them equivalent to NLTS2 items. For this reason, the CPS survey questions will not be presented in the report chapters.

²³ Given that interview/survey respondents were weighted to represent the universe and individuals who failed to respond to the survey as a whole were assigned a weight of zero, imputing missing values for nonrespondents would not affect analysis results. In addition, for those who responded to the interview/survey, item nonresponse was relatively low—item nonresponse ranged from less than 1 percent to less than 3 percent for the key outcome variables.

Statistical tests examining differences between independent subgroups or between responses to different items given by the same group that involve categorical variables with more than two possible response categories were conducted by treating each of the possible response categories as separate dichotomous items.²⁴ For example, each of the four possible response categories to a question regarding satisfaction with the amount of services young adults received from their postsecondary school (“definitely getting enough,” “probably getting enough,” “probably not getting enough,” and “definitely not getting enough”) was treated as a separate dichotomous item. The percentages of young adults who gave each response were then compared across disability or demographic groups or across different questionnaire/interview items. This approach, rather than using scale scores (e.g., the average response for a disability group on a 4-point scale created by assigning values of 1 through 4 to the response categories), was adopted for two reasons: The proper scaling for the response categories was not apparent, and it was felt that reporting differences in percentages responding in each of the response categories would be more meaningful and easier for readers to interpret than reporting differences in mean values.

Rather than test for differences between all independent subgroups (e.g., young adults in different disability categories) simultaneously (e.g., using a $k \times 2$ chi-square test of homogeneity of distribution, where k is the number of disability groups), the statistical significance of differences between selected pairs of independent subgroups was tested. This approach was followed because the intent was to identify significant differences between specific groups (e.g., young adults with learning disabilities are significantly more likely than those with mental retardation to report that they had ever enrolled in a postsecondary school) rather than to identify a more general “disability effect” (e.g., the observed distribution across disability categories differs significantly from what would be expected from the marginal distributions) for the variable of interest.

The test statistic used to compare Bernoulli-distributed responses (i.e., responses that can be allocated into one of two categories and coded as 0 or 1) for two independent subgroups is analogous to a chi-square test for equality of distribution (Conover 1999) and approximately follows a chi-square distribution with one degree of freedom. However, because a chi-square distribution with one degree of freedom is the same as an F distribution with one degree of freedom in the numerator and infinite degrees of freedom in the denominator (Johnson and Kotz 1995), this statistic can be considered the same as an F value; it also can be considered “chi-squared.”²⁵

²⁴ All standard errors in this report were calculated using formula-based estimates rather than estimates based on replicate weights. See appendix A for description of estimating standard errors. As a 10-year longitudinal study, NLTS2 has used this formula-based procedure to calculate standard errors throughout the duration of the study, rather than use currently available procedures. This decision to maintain consistency in analytical approaches was based on the need to support comparisons of findings across NLTS2 reports. To examine possible differences between approaches, replicate weights were created for chapter 5 of this report. Findings using the replicate weights were then compared with the findings using formula-based estimates. Of the 904 possible comparisons in the chapter, 29 differences (3 percent) were noted, supporting the decision to maintain the use of formula-based estimates.

²⁵ In the case of unweighted data, two percentages are usually compared by using nonparametric statistics, such as the Fisher exact test. In the case of NLTS2, the data were weighted, and the usual nonparametric tests would yield significance levels that are too small (Heeringa, West, and Berglund 2010) because the NLTS2 effective sample size is less than the nominal sample size. Instead, to test for the equality between the mean values of the responses to a single survey item in two disjoint subpopulations, we began by computing a ratio where the

Tests also were conducted to examine differences in the rates at which young adults with disabilities as a whole provided specific kinds of self-representations (for example, the percentage of young adults who reported the help with schoolwork they received from postsecondary schools as “very useful” compared with the percentage who rated the sufficiency of the help as “definitely getting enough”), using an analogous one-sample statistic based on difference scores.²⁶ The test statistic follows a chi-square distribution with one degree of freedom for sample sizes of 30 or larger and, for similar reasons to those cited above, is considered roughly equivalent to an $F(1, \text{infinity})$ distribution.

Technical Notes

Readers should remember the following issues when interpreting the findings in this report:

- **Purpose of the report.** The purpose of this report is descriptive; as a nonexperimental study, NLTS2 does not provide data that can be used to address causal questions. The descriptions provided in this document concern the post-high school experiences of young adults with disabilities. No attempt is made to “validate” respondents’ reports with information on their understanding of the survey items or with third-party information on their experiences (e.g., from employers or postsecondary education institutions). Further, the report does not attempt to explain why parents or young adults responded as they did or why responses differ for youth in different subgroups (e.g., disability categories).
- **Subgroups reported.** In each chapter, the descriptive findings are reported for the full sample of young adults; those findings are heavily influenced by information provided by young adults with learning disabilities, who constitute 63 percent of the weighted sample (see appendix B). Young adults with mental retardation, emotional disturbances, other health impairments, and speech/language impairments constitute 12 percent, 12 percent,

numerator was the difference of the sample means for those subpopulations. (In the case of Bernoulli variables, each mean was a weighted percentage.) The denominator for the ratio was the estimated standard error of the numerator, where the standard errors were adjusted to take into account clustering, stratification, and unequal weights. The adjustment to the variances was determined in a design effect study that compared traditionally calculated variances with those calculated using 32 balanced repeated replicate weights. Sample sizes (and consequently degrees of freedom) for Student t types of ratios were typically reasonably large (i.e., never fewer than 30 in each group), so the ratio follows, by the Central Limit Theorem, an approximately normal distribution. For a two-tailed test, the test statistic is the square of the ratio, which then follows an approximate chi-square distribution with one degree of freedom. Because a chi-square distribution with one degree of freedom is the same as an F distribution with one degree of freedom in the numerator and an infinite number of degrees in the denominator, the test statistic approximately follows an $F(1, \text{infinity})$ distribution. Since the application of adjustments from the design effect study tended to slightly overestimate the standard errors from balanced repeated replicates, the use of infinite degrees of freedom, rather than 31 degrees of freedom, nevertheless resulted in actual p values that were slightly lower than nominal p values.

²⁶ Testing for the significance of differences in responses to two survey items for the same individuals involves identifying for each young adult the pattern of response to the two items. The response to each item (e.g., the young adult reported receiving vacation benefits—yes or no—and reported receiving health benefits—yes or no) is scored as 0 or 1, producing difference values for individual young adults of +1 (responded affirmatively to the first item but not the second), 0 (responded affirmatively to both or neither item), or -1 (responded affirmatively to the second item but not the first). The test statistic is the square of a ratio, where the numerator of the ratio is the weighted mean change score and the denominator is an estimate of the standard error of that mean. Because the ratio approaches a normal distribution by the Central Limit Theorem, this test statistic approximately follows a chi-square distribution with one degree of freedom, that is, an $F(1, \text{infinity})$ distribution.

5 percent, and 4 percent of the weighted sample, respectively. The other seven categories together make up less than 6 percent of the weighted sample. Findings then are reported separately for young adults in each federal special education disability category in tables that are ordered by disability prevalence, as determined at the beginning of the study. Comparisons also were made between groups of young adults who differed with respect to years since leaving high school, highest level of educational attainment, gender, race/ethnicity, and parents' household income. These bivariate analyses should not be interpreted as implying that a factor on which subgroups are differentiated (e.g., disability category) has a causal relationship with the differences reported. Further, readers should be aware that demographic factors (e.g., race/ethnicity and parents' household income) are correlated among young adults with disabilities, as well as being distributed differently across disability categories (e.g., young adults in the category of mental retardation are disproportionately likely to be African American, and those in the other health impairment category are disproportionately likely to be White relative to the general population; see appendix B, table B-4, for percentage of youth within each disability category, by demographic characteristics).²⁷ The complex interactions and relationships among subgroups relative to the other variables included in this report (e.g., postsecondary enrollment status) have not been explored.

- **Findings weighted.** NLTS2 was designed to provide a national picture of the characteristics, experiences, and achievements of youth with disabilities in the NLTS2 age range as they transition to young adulthood. Therefore, all the statistics presented in this report are weighted estimates of the national population of young adults who received special education in the NLTS2 age group and of each disability category individually who were out of high school.
- **Standard errors.** For each mean and percentage in this report, a standard error is presented that indicates the precision of the estimate. For example, a variable with a weighted estimated value of 50 percent and a standard error of 2.00 means that the value for the total population, if it had been measured, would, with 95 percent confidence, lie between 46 percent and 54 percent (i.e., within plus or minus 1.96×2 , or 3.92 percentage points of 50 percent). Thus, smaller standard errors allow for greater confidence to be placed in the estimate, whereas larger ones require caution.
- **Combined young adult self-report and parent-report data.** If a Wave 5 youth interview/survey was completed, young adults' responses to these items were used in this report. If a youth interview/survey could not be completed for an eligible young adult or if a young adult was reported by parents not to be able to participate in an interview/survey, parent responses were used. For the subsample of out-of-high school young adults included in this report, the youth interview/survey was the source of data for post-high school outcomes for 65 percent of young adults, and the parent interview was the source for 35 percent of young adults who did not have a youth interview. Combining data across respondents raises the question of whether parent and young adult responses would concur—i.e., whether the same findings would result if parents' responses were reported instead of the young adult's responses. When both parents and young adults

²⁷ See Wagner et al. (2003) for relationships of demographic factors and disability categories for the full NLTS2 sample.

were asked whether the young adult attended community college, belonged to an organized community group, currently works for pay, and worked for pay in the past 2 years, their responses agreed from 73 percent to 88 percent of the time (analyses presented in appendix A).

- **Small samples.** Although NLTS2 data are weighted to represent the population, the size of standard errors is influenced heavily by the actual number of young adults in a given group (e.g., a disability category). In fact, findings are not reported separately for groups that do not include at least 30 sample members because groups with very small samples have comparatively large standard errors. For example, because there are relatively few young adults with deaf-blindness, estimates for that group have relatively large standard errors. Therefore, readers should be cautious in interpreting results for that group and others with small sample sizes and large standard errors.
- **Significant differences.** A large number of statistical analyses were conducted and are presented in this report. Because no explicit adjustments were made for multiple comparisons, the likelihood of finding at least one statistically significant difference when no difference exists in the population is substantially larger than the type I error for each individual analysis. To partially compensate for the number of analyses that were conducted, we have used a relatively conservative p value of $< .01$ in identifying significant differences. The text mentions only differences reaching at least that level of significance. If no level of significance is reported, the group differences described do not attain the $p < .01$ level. Readers also are cautioned that the meaningfulness of differences reported here cannot be inferred from their statistical significance.

Organization of the Report

This report is envisioned as an update of earlier NLTS2 reports based on data collected in Wave 3 (2005) and Wave 4 (2007) of the study, when young adults had been out of high school for up to 4 and 6 years, respectively.²⁸ The current Wave 5 (2009) report augments prior NLTS2 findings as more youth transitioned to early adulthood, were out high school longer (up to 8 years), and had increasing exposure to opportunities for postsecondary education, employment, and independent living. This report is organized to provide information on young adults with disabilities in several key domains. Chapter 2 describes the extent to which young adults with disabilities enrolled in any postsecondary education and their participation in 2- and 4-year colleges and vocational or trade schools specifically; features of their educational experience, such as their major field of study and support services they accessed, as well as their postsecondary education completion rates, also are presented. Chapter 3 considers the employment status of young adults with disabilities, including current employment and employment since leaving high school. Characteristics of young adults' current or most recent job also are described. Chapter 4 addresses the extent to which young adults with disabilities were productively engaged in school, work, or preparation for work after they left high school.

The household circumstances of young adults with disabilities are considered in chapter 5, including the extent to which young adults were living away from home, the prevalence of marriage and parenting, and aspects of their financial independence. Chapter 6 focuses on the social and community involvement of young adults with disabilities, including their friendship

²⁸ See Newman et al. (2009) and Sanford et al. (in review).

activities and community participation in both positive and negative ways, such as participation in extracurricular lessons or classes and organized group and volunteer activities and involvement in violence-related activities and with the criminal justice system.

Appendix A provides details of the NLTS2 design, sample, measures, and analysis approaches. Appendix B presents data on the characteristics of young adults with disabilities included in the out-of-high school sample.

The following chapters provide the final national picture from NLTS2 of the post-high school experiences of young adults with disabilities.