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NHES:1999
Methodology Report

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5. UNIT RESPONSE

This chapter describes the response and completion rates for the NHES:1999. It includes the rates for the Screener and for each of the four extended interviews, the Parent Interview, the Youth Interview, the Adult Education Interview, and the Adult Special Study Interview.

Definition of Response and Completion Rates

Response rates and completion rates are two ways to describe the outcomes of the data collection activities. A response rate is the ratio of the number of units with completed interviews (for example, the units could be telephone numbers, households, or persons) to the number of units sampled and eligible for the interview. In some cases, these rates are easily defined and calculated based on known figures, while in other cases the numerators or denominators of the ratio must be estimated.

For reporting the results from the NHES:1999, the response rate indicates the percentage of possible interviews completed taking all sampling stages into account, while the completion rate measures the percentage of interviews completed for a specific stage of the survey. For example, household members were identified and sampled for interviews in a two-stage process. Screener interviews were conducted to enumerate and sample household members, and then questionnaires were administered to the sampled members in a second-stage interview. If the responding household member failed to complete the first-stage Screener, no members could be sampled for other interviews. Under this design, the completion rate for the second stage (Parent, Youth, Adult Education, or Adult Special Study Interview) is the percentage of sampled persons who completed these interviews.[8] The response rate is the product of the first- and second-stage completion rates. Response rates and completion rates are identical for the first stage of sampling and interviewing (i.e., the Screener).

Response and completion rates can be either unweighted or weighted. The unweighted rate, computed using the raw number of cases, provides a useful description of the success of the operational aspects of the survey. The weighted rate, computed by summing the weights (usually the reciprocals of the probability of selecting the units) for both the numerator and denominator, gives a better description of the success of the survey with respect to the population sampled. Both rates are usually similar unless

[8] Since the Youth Interview was conducted only after the Parent Interview for that sampled child had been completed, the Youth Interview was a third stage of interviewing. Thus, the Youth Interview completion rate is the product of the following two factors: (1) the Parent Interview completion rate and (2) the proportion of youth with completed Parent Interviews who completed the Youth Interview.

the probabilities of selection and the response rates in the categories with different selection probabilities vary considerably. All of the response and completion rates discussed in this chapter are weighted unless noted specifically in the text, since the main purpose of this chapter is to describe the success of the survey with respect to the survey population. Additionally, where applicable, response rates are reported for both the main study sample and the Adult Special Study sample combined, unless noted otherwise.

Screener Response Rates

The first panel of table 5-1 shows the disposition of the 167,347 telephone numbers that were sampled for the NHES:1999. The three major categories of response status are those identified as numbers for residential households, those identified as nonresidential numbers (primarily nonworking and business telephone numbers), and those numbers that, despite numerous attempts, could not be identified as residential or nonresidential.

Table 5-1.–Number of telephone numbers dialed, by residential status and Screener response rates

Screener response category	Number[1]	Percentage of all numbers	Percentage of residential numbers
Total	167,347	100.0	
Identified as residential	72,388	43.3	100.0
Responding	57,278	34.2	79.1
Not responding	15,110	9.0	20.9
Identified as nonresidential	81,003	48.4	
Unknown residential status[2]	13,956	8.3	
Screener response rates[3]	**Weighted rate (percent)**		**Unweighted rate (percent)**
Estimated response rate (using business office method)	74.0		73.4
Main study only	74.1		73.5
Adult Special Study only[4]	71.2		70.4
Survival method response rate	76.1		75.6
CASRO response rate	73.2		72.5
Conservative response rate	67.3		66.3
Liberal response rate	79.3		79.1

[1] The numbers given here are unweighted counts. Both weighted and unweighted response rates are shown.

[2] Includes 5,763 no answer cases that were not refielded. If these cases had been refielded, it is expected that about 308 would have been found to be residential, 681 nonresidential, and 4,774 having unknown residential status.

[3] All the response rates use the weighted number of responding households as the numerator. The denominators vary but are all estimated totals: for the business office method, the proportion of unknown residential status numbers included in the denominator was based upon the proportion identified in checks with telephone business offices; for the estimated response rate for the survival method, the proportion of unknown residential status numbers included in the denominator was based on the results of a survival analysis to predict residency status; for the CASRO (Council of American Survey Research Organizations) response rate, the proportion of unknown residential status numbers included in the denominator was based upon the residency rate for the numbers with known residential status; for the conservative response rate, all of the unknown residential status numbers were included; for the liberal response rate, none of the unknown residential status numbers were included.

[4] Telephone numbers in the NHES:1999 were randomly assigned to either the main study or the Adult Special Study.

NOTE: Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

About 43 percent of the telephone numbers were identified as residential. This percentage is lower than that reported for previous NHES studies. (In the NHES:1996, about 47 percent of all sampled telephone numbers were identified as residential.) Assuming that 40.5 percent of the telephone numbers with unresolved residential status were residential (discussed below), the percentage of numbers that were residential is 47 percent.

The percentage of telephone numbers with unknown residential status was about 8 percent—higher than the 6 percent found in the NHES:1995 and the NHES:1996, and the 3 to 5 percent found in previous NHES studies. Since virtually all of the unknown residential status numbers were called 14 times or more as in previous NHES studies (see chapter 4 for more details on this issue), the percentage in this category is not the result of fewer calls to the numbers than in previous NHES studies. In the NHES:1999, 5,763 of the telephone numbers with unknown residential status were no answer numbers that were not refielded after seven calls. This was a subsample of one-half of the nonmailable no answer numbers. However, even if these cases had been refielded, the percentage of telephone numbers with unknown residential status would still have been about 8 percent. Piekarski, Kaplan, and Prestegaard (1999) describe changes in the telephone system that are related to the increase in the proportion of telephone numbers with unresolved residency status, including factors related to the competition for local exchange service in the market. They note that while the number of telephone households increased only 11 percent from 1988 to 1998, the number of telephone numbers that could be dialed in a telephone survey[9] increased by 80 percent. Even accounting for the increase in the number of households with more than one telephone number and the increased demand for business telephone numbers, many of these newly created numbers are not assigned to any user.

The lower panel of table 5-1 shows five estimated response rates for the Screener based upon different assumptions about the telephone numbers with unknown residential status. Each of these rates is described below, along with the rationale for its use. Each of these approaches uses the same numerator, the weighted number of households that completed the Screener. The difference among the rates is in the allocation of the numbers in the unknown residential status category that is used in the calculation of the denominator of the response rate. The numbers estimated to be residential according to each method are shown in table 5-1A.

The business office method derives its name from the technique used to estimate the denominator of the rate. A random sample of 350 telephone numbers with unresolved residency status

[9] The number of telephone numbers that could be dialed is the number of prefixes (area code and first three digits of the telephone number) that are assigned for POTS (plain old telephone service) multiplied by 10,000.

were selected in the NHES:1995 and the numbers were classified as either residential or nonresidential by calling local telephone companies. The telephone companies were asked to classify the numbers as working or not working. If they were working, the companies were asked to further identify them as residential or business numbers. As a result of this process, it was estimated that 40.5 percent of the numbers were residential. This result is nearly identical to the result from a study conducted at the end of the NHES:1991. Therefore, the denominator of the response rate based on the business office method is all the telephone numbers that were known to be residences plus 40.5 percent of the numbers with an unresolved residential status. The estimated Screener response rate using the business office method is 74 percent. Some research suggests that the business office approach may be inaccurate due to reporting practices of phone companies (Shapiro et al. 1995).

The survival approach uses information about cases for which no answer was obtained in the estimation of their residency rate. Specifically, the listed status, interviewers' codings of answering machine call attempts, and the total number of call attempts are used in the estimation of the residency rate based on survival analysis methods. (Appendix I contains details about the calculation of the survival method response rate.) Estimates based on the survival method suggest that 24.2 percent of telephone numbers with unresolved residency status in the NHES:1999 are residential. Therefore, the denominator of the response rate based on the survival method is all the telephone numbers that were known to be residences plus 24.2 percent of the numbers with an unresolved residential status. The estimated Screener response rate based on the survival method is 76 percent. If the raw count of telephone numbers was not weighted, the Screener response rate using the survival method would still have been 76 percent. See Brick, Montaquila, and Scheuren (2000, forthcoming) for further details about the survival method.

The other three response rates shown in table 5-1 were computed by allocating different proportions of the numbers with unknown residency status into the residential category. The CASRO (Council of American Survey Research Organizations) rate is computed by allocating the numbers with unknown residential status in the same proportion observed in the numbers with known residential status, which, in the NHES:1999, was 47.2 percent residential. Evidence from the sample described above suggests that the residency rate for numbers with unknown residential status is lower than implied by the CASRO rate calculation. Therefore, the CASRO rate is not recommended for response rate calculations for the NHES. The CASRO rate is 73 percent.

The conservative and liberal response rates define the lower and upper bounds of the response rate. The conservative response rate is computed assuming that all of the numbers with unknown residential status are actually residential numbers. The conservative rate is 67 percent. The

liberal rate is computed assuming that all of the numbers with unknown residential status are actually nonresidential. The liberal rate is 79 percent.

Table 5-1A.—Number and percentage of telephone numbers with unknown residential status assumed to be residential under each of the methods of estimating response rates

Method of estimating response rates	Number	Percent
Total phone numbers with unknown residential status	13,956	100.0
Total assumed to be residential using business office method	5,652	40.5
Total assumed to be residential using survival method.....	3,377	24.2
Total assumed to be residential using CASRO method	6,586	47.2
Total assumed to be residential using conservative method.....	13,956	100.0
Total assumed to be residential using liberal method	0	0.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

It is reasonable to say that the Screener response rate is estimated to be between 67 and 79 percent (see table 5-1). The variability in the estimates arises because it is not possible to identify precisely the residential status for each telephone number. For the remainder of the report, a Screener response rate of 74 percent, based on the business office method, will be cited.[10] This is consistent with the method cited for previous NHES collections.

The overall NHES:1999 Screener response rate of 74 percent is higher than the 70 percent Screener response rate attained in the NHES:1996.[11] In the NHES:1999, adults were enumerated during the screening interview only for a subsample of the households. This approach is very similar to that used in the NHES:1991 and in the NHES:1995. By comparison, full household enumeration was used in the NHES:1996. A methodological study involving a screener experiment (Brick, Collins, and Chandler 1997) demonstrated that the "screen-out" approach is expected to result in significantly higher response rates compared with enumerating adults in all households.

Table 5-2 provides a further breakdown of the responding and nonresponding residential telephone numbers. The responding numbers are classified by whether or not any other interviews were

[10] The survival method, described more fully in Appendix I, is a more accurate representation of the response rate for RDD surveys conducted by NCES. However, to be consistent with previous survey cycles, the business office method response rate is the official response rate for the NHES:1999.

[11] This breaks out into Screener response rates of 74 percent for the NHES:1999 main study and 71 percent for the NHES:1999 Adult Special Study. However, since the Adult Special Study sample was much smaller than the main study sample, the lower Screener response rate for the Adult Special Study had little effect on the overall Screener response rate.

scheduled for the household, and the nonresponding numbers are classified by the reason for nonresponse. About 76 percent of all the nonresponse in the screening interview was due to an adult household member refusing to answer the screening items. The next largest category is the 17 percent classified as maximum calls, which includes those households that never completed the Screener after numerous calls. (These cases received no fewer than 10 calls and up to 57 calls.) While these households did not explicitly refuse to participate, potential respondents were not available to complete the screening items despite many attempts to reach them. Language problems accounted for 6 percent of nonresponse. The language problem cases are discussed in more detail below.

Table 5-2.–Number and percentage of known residential telephone numbers by, Screener response status

Screener response category	Number	Percent
Responding residential phone numbers	57,278	100.0
Households with no extended interviews scheduled	29,690	51.8
Households with at least one extended interview scheduled	27,588	48.2
Not responding residential phone numbers	15,110	100.0
Refusals	11,422	75.6
Language problems	867	5.7
Maximum calls	2,589	17.1
Other problems	232	1.5

NOTE: Because of rounding, percents may not add to 100. "Other problems" include household members being unavailable in field period, household members too sick to respond, and other problem cases for which Screener could not be completed during the field period.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Spanish Language Cases

NHES:1999 interviews were conducted in both English and Spanish. In many instances, cases were identified as Spanish-speaking by an interviewer who was not bilingual who would have coded the case for a callback by a bilingual interviewer. In other instances, a bilingual interviewer could have made initial contact with a household whose members were Spanish-speaking and conducted that interview in Spanish without ever coding the case a language problem. (See chapter 4 for a description of the procedures for all language problem cases, including the training of bilingual interviewers and administration of interviews in Spanish.) Records for all completed interviews contain a variable indicating whether the interview was conducted in English or Spanish; a total of 2,023 completed extended interviews were conducted in Spanish.

In the NHES:1999, 2,591 Screener cases were designated as Spanish language cases by interviewers and 1,975 were completed (table 5-3). The unweighted response rate for these cases was 76 percent, approximately the same as the response rate for the study overall. Most of these Screeners (93 percent) were completed in Spanish.

Table 5-3.—The NHES:1999 Spanish language Screener cases, by response status

Status	Unweighted number	Percent
Total number identified as Spanish language cases	2,591	100.0
Completed in English	130	5.0
Completed in Spanish	1,845	71.2
Refusals	209	8.1
Language problems	111	4.2
Other	296	11.4

NOTE: "Language problems" are cases that could not be completed in English or Spanish. Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Distribution of Household Members Sampled for Extended Interviews

Table 5-4 shows the number of households in which extended interviews were scheduled. About 98 percent of sampled telephone numbers were allocated to the main study and 2 percent were allocated to the Adult Special Study. This distribution is reflected in the percentages of households with completed screening interviews. In the Adult Special Study sample, each household had one adult selected for the Adult Special Study Interview. In the main study sample, 15 percent had only a Parent Interview scheduled; 17 percent had both Parent and Youth Interviews scheduled; 11 percent had only an Adult Education Interview scheduled; 2 percent had both Parent and Adult Education Interviews scheduled; 2 percent had Parent, Youth, and Adult Education Interviews scheduled; and 53 percent had no extended interview scheduled.

Table 5-4.—Number and percent of households responding to the Screener, by type of extended interviews scheduled

Type of interview scheduled	Number of households	Percent	Percent of main study households
Total	57,278		
Main study sample	55,929	97.6	
Parent Interview only	8,418		15.1
Parent and Youth Interviews	9,494		17.0
Adult Education Interview only	6,264		11.2
Parent and Adult Education Interviews	864		1.5
Parent, Youth, and Adult Education Interviews	1,199		2.1
No extended interview	29,690		53.1
Adult Special Study sample	1,349	2.4	

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Profile of Screener Response Rates

In most RDD surveys, it is difficult to obtain and examine the characteristics of those households that do not respond to the screening interview. Consequently, the ability to examine nonresponse bias at this stage of the survey is limited. In this section response rates are given by characteristics of the telephone number obtained from Genesys and from Telematch, by characteristics of the geographic area of the households (the ZIP code that has the most households associated with telephone numbers in the exchange) based on the 1990 Census, and by whether an answering machine message was left during the study.

Table 5-5 gives the distribution of the telephone numbers and the estimated response rate by the characteristics of the areas. For example, response rates in the Northeast and West were lower than the response rates in the Midwest and South. Households that had a phone number listed as residential had a higher response rate than those that were not listed, and households that received an advance mailing that was not returned (through regular mail) responded more often than those that were not sent an advance mailing (because no mailing address was available for the telephone number) and those that were sent an advance mailing that was returned.

This univariate profile of Screener response rates by the characteristics of the areas is difficult to interpret because there are so many characteristics to consider. In addition, some of the characteristics are correlated, and the univariate profile does not explore these relationships. Consequently, a multivariate analysis was performed to examine the interrelationship of the characteristics and the response rates.

The goal of the multivariate analysis was to determine if groups of households had extremely different response rates. Nonresponse bias in the estimates may appear when the characteristics of the respondents and nonrespondents are different. By identifying groups with different response rates, the characteristics of the respondents and nonrespondents can be used as an indicator of the potential for nonresponse bias and thus using these characteristics to form cells for nonresponse adjustment may reduce nonresponse bias (Little 1986). The characteristics of the telephone numbers and of the geographic areas corresponding to the telephone numbers sampled were used to identify groups with different response rates. The variables included in the analysis were characteristics of the telephone numbers and their geographic areas that were available and thought to be correlated with the response rate.

The analysis was done using a categorical search algorithm called Chi-Square Automatic Interaction Detection (CHAID). This algorithm is very similar to the continuous search algorithms LISREL and AID (Automatic Interaction Detector), which have been used for a number of years, but it is designed especially to handle categorical data like that available for the NHES:1999. CHAID first identifies the characteristic of the data that is the best predictor of response. Then, within the levels of that characteristic, CHAID identifies the next most likely response predictor(s), etc., until a tree is formed with all potential response predictors. The final result is a division of the entire data set into cells by attempting to determine sequentially the cells that have the greatest discrimination with respect to the response rates. In other words, it attempts to divide the data set into groups so that the response rate within cells is as constant as possible, and the response rate between cells is as different as possible. This automatic procedure was done by specifying that the minimum number of households in any group had to be greater than or equal to 500 and the split of the variables into subgroups had to be statistically significant using a chi-square test at the 95 percent significance level.

Since many of the variables in the CHAID model, such as median home value, have multiple response categories, the program must take this into account. The CHAID software does this in two ways. First, it allows the data set to be split into more than one subgroup at a time. For example, Census region categories are split differently within different median home value categories. Second, the procedure follows a relatively complex procedure to check all binary splits of the data and equalize the chance of selecting variables irrespective of the number of response categories that variable may have.

An example may help to explain the methods used in CHAID. All of the characteristics in the model are tested and the one with the response categories having the largest discrimination with respect to the response rates is identified. As shown in table 7-1 (in chapter 7), which contains the

Table 5-5.—Number of telephone numbers dialed in the Screener, by response status, response rate, and characteristics of the geographic area based on the telephone exchange

Characteristic	Total	Residential, responding	Residential, not responding	Non-residential	Unknown residential status	Estimated* response rate (%)
Total	167,347	57,278	15,110	81,003	13,956	74.0
Census region						
Northeast	30,305	10,256	3,304	13,582	3,163	70.0
Midwest	34,785	11,703	2,702	17,882	2,498	76.7
South	63,223	22,166	5,462	30,789	4,806	75.5
West	39,034	13,153	3,642	18,750	3,489	72.6
Listed status						
Not listed	111,499	26,381	8,281	65,290	11,547	67.4
Listed white pages number	48,321	30,897	6,829	8,186	2,409	80.3
Listed yellow pages number	7,527	0	0	7,527	0	†
Advance mailing status						
Mailable address, mailing sent	44,505	29,155	5,891	7,556	1,903	81.8
No mailable address	115,040	25,217	8,340	70,142	11,341	66.4
Mailable address, but returned	7,802	2,906	879	3,305	712	70.7
Minority concentration**						
High	83,491	27,495	7,753	41,425	6,818	72.6
Not high	83,856	29,783	7,357	39,578	7,138	74.7
Percent college graduates						
Less than 20 percent	65,655	23,319	5,393	32,882	4,061	77.7
20 to 29 percent	52,212	18,404	5,104	24,208	4,496	73.5
30 to 39 percent	25,749	8,619	2,481	12,076	2,573	71.7
40 to 59 percent	20,606	6,185	1,880	10,155	2,386	69.0
60 percent or more	3,125	751	252	1,682	440	65.0
Percent black						
Less than 10 percent	73,249	25,964	6,392	34,901	5,992	75.1
10 to 29 percent	55,178	18,644	5,338	26,125	5,071	72.4
30 to 59 percent	27,655	9,243	2,303	13,948	2,161	74.6
60 percent or more	11,265	3,427	1,077	6,029	732	71.9
Percent white						
Less than 50 percent	36,809	11,286	3,630	18,883	3,010	70.1
50 to 89 percent	77,671	26,511	7,130	37,172	6,858	72.6
90 percent or more	52,867	19,841	4,350	24,948	4,088	76.7
Percent Hispanic						
Less than 10 percent	87,889	31,696	7,205	42,388	6,600	76.6
10 to 49 percent	60,249	21,129	6,597	31,595	6,251	70.1
50 percent or more	19,209	4,453	1,308	7,020	1,105	72.0
Median home value						
Below 10th percentile in sample	16,657	5,426	1,030	9,359	842	81.1
10th to 19th percentile in sample	16,760	5,994	1,241	8,578	947	79.6
20th to 49th percentile in sample	50,197	18,458	4,135	24,008	3,596	77.4
50th to 59th percentile in sample	16,773	6,008	1,597	7,714	1,454	73.9
60th to 79th percentile in sample	33,472	11,479	3,468	15,337	3,188	71.2
80th to 89th percentile in sample	16,787	5,382	1,934	7,657	1,814	67.2
90th percentile or more	16,701	4,531	1,705	8,350	2,115	64.3
Median income						
Below 10th percentile in sample	16,643	4,928	1,119	9,487	1,109	76.9
10th to 19th percentile in sample	16,780	5,634	1,195	8,884	1,067	78.8
20th to 49th percentile in sample	50,188	18,009	4,424	24,184	3,571	76.3
50th to 69th percentile in sample	33,503	11,908	3,214	15,527	2,854	74.2
70th to 79th percentile in sample	16,743	5,972	1,729	7,471	1,571	72.8
80th to 89th percentile in sample	16,816	5,704	1,703	7,640	1,769	71.0
90th percentile or more	16,674	5,123	1,726	7,810	2,015	67.3

Table 5-5.—Number of telephone numbers dialed in the Screener, by response status, response rate, and characteristics of the geographic area based on the telephone exchange–Continued

Characteristic	Total	Residential, responding	Residential, not responding	Non-residential	Unknown residential status	Estimated* response rate (%)
Percent age 65+						
Less than 20 percent	115,626	39,933	10,537	55,495	9,661	74.1
20 to 29 percent	47,771	15,965	4,162	23,672	3,972	74.0
30 percent or more	3,950	1,380	411	1,836	323	72.0
Percent of income $75,000+						
Less than 10 percent	9,115	2,869	545	5,208	493	80.6
10 to 19 percent	74,581	26,320	6,234	36,932	5,095	76.9
20 to 29 percent	43,432	15,267	4,247	20,127	3,791	73.4
30 to 39 percent	21,624	7,185	2,183	9,949	2,307	70.9
40 percent or more	18,595	5,637	1,901	8,787	2,270	67.0
Percent renters						
Less than 20 percent	4,358	1,536	400	2,049	373	73.8
20 to 39 percent	78,533	29,052	6,968	36,594	5,919	75.7
40 to 49 percent	36,097	12,988	3,372	16,706	3,031	74.3
50 to 59 percent	20,892	6,560	1,849	10,642	1,841	72.1
60 to 69 percent	11,085	3,050	972	6,040	1,023	69.0
70 to 79 percent	9,078	2,410	906	4,883	879	66.0
80 percent or more	7,304	1,682	643	4,089	890	62.4
Answering machine message status						
Left no messages	127,680	34,025	6,556	75,640	11,459	76.1
Left one or more messages	39,667	23,253	8,554	5,363	2,497	71.2
Metropolitan status						
In county in central city	69,224	22,465	6,489	34,147	6,123	72.2
In county not in central city	29,814	10,679	3,051	13,528	2,556	73.0
Subcounty of MSA	30,063	10,818	2,818	13,803	2,624	73.8
MSA in its own county	8,037	2,616	912	3,632	877	66.3
Not MSA	30,209	10,700	1,840	15,893	1,776	80.8

*The estimated response rate is the number of completed interviews divided by the sum of the number of completed interviews, nonresponses, and 40.5 percent of the unresolved telephone numbers, weighted by the probability of selection.

**A high minority exchange is one in which at least 20 percent of persons are black or at least 20 percent of persons are Hispanic.

NOTE: † denotes not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

summary of this analysis, the mailable status of the telephone number was the variable chosen as most associated with response propensity and three response categories for this variable were retained. (Categories 3 and 4 were combined, but they are both "Postmaster returned" mailing categories.) Note, for example, that within mailable status categories the data were tested again, and the indicator of whether an answering machine message was left and the median home value were then used to split the data. The process continued until the final 60 cells shown in the table were formed. Although the variables median income, minority status, percent age 65 and older, percent with income of $75,000 or more, percent black, percent homeowners, and percent white were considered in the CHAID analysis, they were not selected as discriminators of response propensity in this multivariate analysis, given the other characteristics.

In a study conducted using data from the 1997 National Survey of America's Families, Groves and Wissoker (1999) found that households with higher socioeconomic status have a slight tendency to require more effort to complete an interview. However, as described above and depicted in Chapter 7, some characteristics of the geographic area associated with socioeconomic status, including median home value and percent college graduates, were used in forming cells for Screener nonresponse adjustment.

The range of response rates among the 60 cells suggested that the key characteristics identified by CHAID should be used in creating weighting adjustments. The results indicated that the nonresponse bias may be reduced by using these categories for weighting adjustments. As a result, these 60 cells were used in the adjustment for Screener nonresponse, as discussed in chapter 7. Clearly, some nonresponse bias exists, but these results suggest that the weighting adjusts for some of the important characteristics associated with the nonresponse bias.

Extended Interview Response Rates

During the Screening Interview, all children were enumerated in households with eligible children; adults were enumerated in only a subsample of households. After the enumeration, samples of children or adults within the household were selected for the Parent, Youth, and/or Adult Education components (main study sample only) or for the Adult Special Study component (Adult Special Study sample only). For the sampled children, the person who was the most knowledgeable about the child's care and education (nearly always a parent, and most often the child's mother) became the respondent for the Parent Interview. For older children sampled for the Youth Interview and for adults sampled for the Adult Education or Adult Special Study Interview, the interview was conducted only with the sampled person.

The numbers of children enumerated and sampled, and those with completed interviews for each component of the NHES:1999, are given in table 5-6. Of the enumerated 38,993 children eligible for sampling in the Parent Interview, a sample of 28,011 children was selected. About 0.5 percent of the sampled children were not actually in the age and grade range for the survey as determined by the Parent Interview respondent. These children were classified as ineligible. Complete interviews were obtained for 24,600 of the sampled children for an estimated 90 percent completion rate and an estimated response rate of 67 percent. The bulk of the unit nonresponse for the Parent Interview was due to refusal of the parent/guardian to respond (64.2 percent of nonresponse). Other reasons for Parent Interview nonresponse were inability to make contact with the parent/guardian (27.5 percent of nonresponse),

language problems (2.5 percent of nonresponse), and other miscellaneous reasons such as the parent/guardian being unavailable for an interview during the field period (5.9 percent of nonresponse).

The numbers of older children enumerated and sampled and the final status of each sampled child for the Youth Interview are also given in table 5-6. About 68 percent of the 15,563 enumerated older children were sampled for the Youth Interview. Less than 2 percent of the sampled older children were classified as ineligible because the Parent Interview respondent reported that they were not actually enrolled in grades 6 through 12. In all, 7,913 interviews were completed with the sampled youth. The estimated completion rate for the Youth Interview is 78 percent and the response rate is 58 percent. The main reason for Youth Interview nonresponse was failure by the parent to complete the Parent Interview (54.2 percent of Youth Interview nonresponse). Other reasons for nonresponse to the Youth Interview were the refusal of the parent to permit the youth to respond to the Youth Interview (17.7 percent of nonresponse), refusal of the youth to respond (16.1 percent of nonresponse), inability to make contact with the sampled youth (7.2 percent of nonresponse), language problems (0.5 percent of nonresponse), and other miscellaneous reasons for nonresponse such as the youth not being capable of responding to the interview for health reasons (4.4 percent of nonresponse).

Table 5-6 also gives the numbers of adults enumerated and sampled and the final status of the Adult Education Interview. Adults were enumerated in only a subsample of households. Of the 20,266 enumerated adults, 8,114 were sampled for Adult Education Interviews. Almost all of those sampled were eligible for the interview; those classified as ineligible were either in the military or currently enrolled in high school. A total of 6,697 adults completed the Adult Education Interview, for an estimated completion rate of 84 percent and an estimated response rate of 62 percent. For the Adult Education Interview, the bulk of the nonresponse was due to refusal of the sampled adult to respond (66.7 percent of nonresponse). Other reasons for Adult Education Interview nonresponse were inability to make contact with the sampled adult (19.5 percent of nonresponse), language problems with the sampled adult (4.2 percent of nonresponse), and other miscellaneous reasons such as the sampled adult being unable to respond due to illness (9.5 percent of nonresponse).

Finally, table 5-6 gives the numbers of adults enumerated and sampled and the final status distribution of sampled adults for the Adult Special Study Interview. In the Adult Special Study sample, one adult per sampled household was randomly chosen. A total of 1,082 adults completed the Adult Special Study Interview. Almost all of those sampled were eligible for the interview; those classified as ineligible were in the military. The estimated Adult Special Study Interview completion rate is 83 percent and the overall response rate is 59 percent.

Table 5-6.—Number of enumerated, sampled, and completed interviews, weighted completion rates, and weighted response rates, by type of extended interview

Type of interview	Number	Estimated completion rate (percent)	Estimated response rate (percent)*
Parent Interview			
Enumerated	38,993		
Sampled	28,011		
Ineligible	151		
Did not respond	3,260		
Complete	24,600	90.0	66.7
Youth Interview			
Enumerated	15,563		
Sampled	10,651		
Ineligible	170		
Parent Interview not completed	1,376		
Parent refused for youth	460		
Youth did not respond	732		
Complete	7,913	78.1	57.9
Adult Education Interview			
Enumerated	20,266		
Sampled	8,114		
Ineligible	96		
Did not respond	1,321		
Complete	6,697	84.1	62.3
Adult Special Study Interview			
Enumerated	3,701		
Sampled	1,310		
Ineligible	9		
Did not respond	219		
Complete	1,082	83.5	59.5

*The estimated response rate is computed by multiplying the Screener response rate of 74.1 percent (for the main study) or 71.2 percent (for the Adult Special Study) by the appropriate completion rate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Profile of Extended Interview Completion Rates

The completion rates for the extended interviews can be examined by variables available for both respondents and nonrespondents. The variables shown for the Parent Interview are Census region (based on the telephone number) and grade of the sampled child. Grade was collected during the Screener. Table 5-7 shows the number of sampled children by response status and completion rate for each of these variables. The completion rates are quite consistent across all Census regions and grades.

For the Youth Interview, three variables about each sampled youth are used for examining the response profile: Census region, grade of the youth, and type of school (i.e., public vs. private vs. home school). Census region was obtained based on the telephone number, grade was obtained from the Screener, and type of school was obtained from the Parent Interview. The distribution of cases for these variables and the estimated percent complete among those with a completed Parent Interview (i.e, conditional completion rate)[12] are shown in table 5-8. There is little variation in the conditional completion rates for region or for students whose grade is known. The conditional completion rates by type of school are more variable, with the lowest rate for home schoolers.

For the Adult Education Interview and for the Adult Special Study Interview, four variables were considered in examining the response profile: Census region (based on the telephone number), sex (from the Screener), adult education participation status as reported by the Screener respondent, and an indicator of whether the sampled adult was the Screener respondent. The results are given in tables 5-9 and 5-10 for the Adult Education and Adult Special Study Interviews, respectively. For the Adult Education Interview, there was little variation in completion rates across regions; for the Adult Special Study Interview, the completion rates in the Midwest and South were higher than those in the Northeast and West regions. For both interviews, the completion rate for females was higher than that for males, and the completion rate for adults reported by the Screener respondent to be adult education participants was higher than the completion rate for those reported to be nonparticipants. Sampled adults who were the Screener respondents completed the Adult Education Interview and the Adult Special Study Interview at higher rates than those who were not the Screener respondents.

[12] The Youth Interview completion rates given in Table 5-8 are conditional on completing the Parent Interview; that is, the denominator is the weighted number of youth with completed Parent Interviews rather than the weighted number of youth sampled for a Youth Interview. Because the rates reported here are conditional, they differ from the rates reported in table 5-6 and throughout this report, which are not conditional on the completion of the Parent Interview.

Table 5-7.—Number of sampled Parent Interviews, by response status and weighted completion rates

Parent Interview	Total	Responded	Did not respond	Ineligible	Estimated completion rate (percent)
Total	28,011	24,600	3,260	151	90.0
Census region					
Northeast	4,912	4,270	625	17	89.2
Midwest	5,511	4,899	578	34	90.9
South	10,761	9,473	1,224	64	90.4
West	6,827	5,958	833	36	89.2
Grade of child (Screener)					
Not enrolled	5,486	4,952	506	28	91.5
Nursery/Preschool	2,225	1,983	241	1	90.4
Kindergarten	1,642	1,480	157	5	91.5
1st grade	1,648	1,458	189	1	89.6
2nd grade	1,596	1,392	204	0	88.3
3rd grade	1,588	1,403	182	3	89.8
4th grade	1,565	1,377	185	3	90.3
5th grade	1,622	1,402	219	1	89.4
6th grade	1,500	1,306	191	3	89.7
7th grade	1,607	1,407	197	3	90.2
8th grade	1,566	1,373	193	0	90.4
9th grade	1,563	1,376	177	10	90.3
10th grade	1,472	1,258	200	14	88.6
11th grade	1,420	1,229	171	20	90.3
12th grade	1,484	1,191	242	51	87.3
Unknown	12	0	5	7	0.0
Other*	15	13	1	1	97.3

* Other includes special education and ungraded.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Table 5-8.—Number of sampled Youth Interviews, by response status and weighted conditional completion rates

Youth Interview	Total	Responded	Did not respond	Ineligible	Parent Interview not completed	Estimated percent completed among those with a completed Parent Interview[3]
Total	10,651	7,913	1,192	170	1,376	86.8
Census region						
Northeast	1,818	1,292	225	24	277	84.5
Midwest	2,110	1,622	233	35	220	87.7
South	4,192	3,137	455	76	524	87.6
West	2,531	1,862	279	35	355	86.6
Grade of child (Screener)						
6th grade	1,502	1,106	186	21	189	85.4
7th grade	1,599	1,221	171	10	197	87.7
8th grade	1,567	1,191	178	5	193	87.4
9th grade	1,557	1,192	173	15	177	86.1
10th grade	1,464	1,089	152	23	200	87.5
11th grade	1,411	1,039	176	25	171	86.7
12th grade	1,506	1,059	148	58	241	87.4
Other[1]	31	15	7	6	3	59.9
Unknown	14	1	1	7	5	52.1
Type of school (Parent Interview)						
Public	8,103	7,036	1,016	51	0	87.2
Private	924	779	142	3	0	85.0
Home schoolers	134	98	34	2	0	74.0
Unknown[2]	1,490	0	0	114	1,376	0.0

[1]Other includes special education, ungraded, and grades other than 6 through 12.

[2]Characteristics obtained during the Parent Interview are unknown for some ineligible youths and for youths for whom no Parent Interview was completed.

[3]This may be viewed as a conditional Youth Interview completion rate, where the denominator is the weighted number of youth with completed Parent Interviews rather than the weighted number of youth sampled for a Youth Interview. Because the rates reported here are conditional, they differ from the rates reported in table 5-6 and throughout this report, which are not conditional on the completion of the Parent Interview.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Table 5-9.—Number of sampled Adult Education Interviews, by response status and weighted completion rates

Adult Education Interviews	Total	Responded	Did not respond	Ineligible	Estimated completion rate (percent)
Total	8,114	6,697	1,321	96	84.1
Census region					
Northeast	1,405	1,162	233	10	84.4
Midwest	1,710	1,451	253	6	84.8
South	3,126	2,566	506	54	83.7
West	1,873	1,518	329	26	83.8
Sex (Screener)					
Female	4,508	3,829	650	29	86.2
Male	3,606	2,868	671	67	81.5
Adult education participation status (Screener)					
Adult education participant	4,542	3,953	519	70	88.4
Adult education non-participant	3,572	2,744	802	26	80.4
Screener respondent*					
Sampled adult	5,145	4,620	469	56	91.4
Person other than sampled adult	2,969	2,077	852	40	73.0

*"Sampled adult" signifies that the person sampled for an Adult Education interview was the Screener respondent for the household.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Table 5-10.—Number of sampled Adult Special Study Interviews, by response status and weighted completion rates

Adult Special Study Interviews	Total	Responded	Did not respond	Ineligible	Estimated completion rate (percent)
Total	1,310	1,082	219	9	83.5
Census region					
Northeast	248	194	53	1	80.3
Midwest	277	230	47	0	84.0
South	501	428	71	2	86.9
West	284	230	48	6	80.2
Sex (Screener)					
Female	731	628	101	2	86.3
Male	579	454	118	7	80.2
Adult education participation status (Screener)					
Adult education participant	491	422	62	7	87.4
Adult education non-participant	819	660	157	2	81.0
Screener respondent					
Sampled adult	818	729	84	5	91.2
Person other than sampled adult	492	353	135	4	74.7

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

A Study of Nonresponse Bias in the NHES:1999

The estimates from the NHES:1999 are subject to bias because of nonresponse to the Screener and the extended interview components. Generally speaking, the best approach to minimizing nonresponse bias is to plan and implement data collection procedures aimed at achieving high cooperation rates.[13] For the NHES:1999, such procedures included extensive training of the interviewers, advance mailings to the respondents, effective call scheduling strategies, and, where necessary, refusal conversion methods that included recontacting households by both telephone and mail if mailable addresses could be obtained (see chapter 4). However, because some nonresponse occurs even with the best strategies, weighting adjustments are necessary to minimize potential nonresponse bias.

The term bias has a specific technical definition in this context. Bias is the expected difference between the estimate from the survey and the actual population value. For example, if all households were included in the survey, the difference between the estimate from the survey and the actual population value (which includes the responses of persons who did not respond to the survey) is the bias due to nonresponse. Since the NHES is based on a sample, the bias is defined as the expected or average value of this difference over all possible samples.

Nonresponse bias, the bias due to the failure of some persons or households in the sample to respond to the survey, can be substantial when two conditions hold. First, the differences between the characteristics of respondents and nonrespondents must be relatively large. For example, consider estimating the percentage of adults who participated in an adult education activity in the past year. If the participation rate is nearly identical for both respondents and nonrespondents, then the nonresponse bias of the estimate will be negligible.

Second, the nonresponse rate must be relatively high. If the nonresponse rate is very low relative to the magnitude of the estimates, then the nonresponse bias in the estimates will be small, even if the differences in the characteristics between respondents and nonrespondents are relatively large. For example, if the nonresponse rate is only 2 percent, then estimates of totals that comprise 20 or 30 percent of the population will not be greatly affected by nonresponse, even if the differences in these characteristics between respondents and nonrespondents are relatively large. It is important to realize that this condition requires the nonresponse rate to be large relative to the size of the estimates. If the estimate

[13] Triplett et al. (1996) examined the effects of refusal conversion efforts on data quality, and noted some differences between "reluctant responders" and other respondents. They found that in general, reluctant responders had higher levels of item nonresponse and shorter interviews and generally provided less information.

is for a small domain or subgroup, then even a relatively low rate of nonresponse can result in important biases if the differences between respondents and nonrespondents are large.

The bias of an estimate can be expressed mathematically to show the relationships between the bias and the two factors discussed above. The bias is given by

$$Bias(\hat{y}_r) = p_n\{E(\hat{y}_r - \hat{y}_n)\},$$

where $\hat{y}_r$ is the estimated characteristic based on the respondents only, p_n is the nonresponse rate, $\hat{y}_n$ is the estimated characteristic based on the nonrespondents only, and E is the expectation operator for averaging over all possible samples.

To examine nonresponse and the potential bias associated with nonresponse in the NHES:1999, a nonresponse bias analysis study was undertaken. This study involved an examination of response rates as a whole and for various subgroups, an analysis to determine characteristics that are associated with Screener nonresponse, an examination of the potential usefulness of household-level data from an external source in reducing nonresponse bias, and a comparison of estimates based on adjusted and unadjusted weights. The first two components of this study—the examination of response rates and the analysis to determine characteristics associated with Screener nonresponse—were described earlier in this chapter. Below, the remaining components of this study—the examination of the external source of household-level data and the comparison of estimates based on adjusted and unadjusted weights—are described.

An External Source of Household-Level Data

Genesys, the vendor that provided the NHES:1999 sample of telephone numbers, also provided exchange-level and broad geographic characteristics for each sampled telephone number. As described earlier in this chapter, a CHAID analysis was conducted to identify characteristics associated with nonresponse to the NHES:1999 Screener; most of these characteristics were the exchange-level characteristics provided by Genesys. In order to reduce nonresponse bias, these characteristics were used to form cells for nonresponse adjustment of the household-level weights. Characteristics used in forming nonresponse adjustment cells must be available for both respondents and nonrespondents; therefore, the choice of characteristics to be used in adjusting for Screener nonresponse was limited to items available on the sampling frame.

To supplement the exchange-level and geographic characteristics provided by Genesys, a special study was undertaken to evaluate household-level data available from another vendor, Acxiom. Acxiom maintains a database of telephone number-level characteristics including items such as household income, presence of household members in various age/sex categories, presence of children, whether the telephone number is a business number, educational attainment of household members, and size of dwelling unit. The Acxiom database also contains a variety of marketing items including purchase behavior data, wealth indicators, automobile data, and lifestyle data.

The NHES:1999 sample of 184,084 telephone numbers (the 167,347 telephone numbers in the main study and Adult Special Study samples, plus the 16,737 telephone numbers in the reserve sample that were not released) was matched against the Acxiom database. A telephone number was classified as a match if the Acxiom database contained an address for the telephone number. Only those that "matched" had the household data. The overall match rate was 49 percent (i.e., 49 percent of the NHES:1999 sample of numbers were found in the Acxiom database). The match rates for Screener respondents and nonrespondents were 82 and 79 percent, respectively. As expected, numbers known to be nonresidential had a much lower match rate, with nonworking numbers having a match rate of 24 percent and other nonresidential numbers having a match rate of 20 percent. Telephone numbers with unknown residential status ("no answer" cases) had a match rate of 37 percent.[14]

Univariate tabulations of the Acxiom data revealed some important findings. The indicator of business matches from Acxiom (i.e., whether the telephone number was listed in the Acxiom business database) is tabulated against the business flag from Genesys (based on the Yellow Pages match) in table 5-11. About 80 percent of the numbers classified as business numbers by Genesys were in the Acxiom business database; however, 45 percent of the numbers not identified as businesses by Genesys were listed in the Acxiom business database.

Table 5-11.—Comparison of business classifications from Genesys and from Acxiom

Business classification from Genesys	Number of cases	Business classification from Acxiom (percent)		
		Business match	Not a business match	Total
Identified as business	8,298	79.6	20.4	100.0
Not identified as business	175,786	45.3	54.7	100.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999. Acxiom database.

[14] The match rates cited here exclude telephone numbers in the reserve sample, which had an overall match rate of 49 percent.

For households with completed interviews, data collected in the NHES:1999 Screener and extended interviews were compared with information provided by Acxiom. In particular, home tenure, presence of children, and income were considered. The comparison of home tenure (given in table 5-12) shows a high match rate for owners; however, a large proportion of cases found to be renters in the NHES:1999 were reported by Acxiom to be owners. Table 5-13 shows the results for the comparison of the presence of children. Although Acxiom's false positive rate (i.e., the rate at which Acxiom classified households without children as households with children) was quite high, its false negative rate was very low (less than 1 percent of the telephone numbers were incorrectly classified as households without children). Table 5-14 compares estimated income available from Acxiom to the income reported in the NHES:1999 (HINCOME). Although Acxiom was able to provide income data for more than half of the telephone numbers in the NHES:1999 sample, the table indicates a low correlation between the income reported by the NHES respondent and the income provided by Acxiom. Although data from Acxiom could be considered for use in constructing weighting classes for nonresponse adjustment, these data quality issues diminish the utility of the Acxiom data.

Table 5-12.—Comparison of NHES:1999 home tenure (HOWNHOME) to home tenure from Acxiom

Home tenure from NHES:1999	Home tenure from Acxiom			Total
	Not available	Own	Rent	
Not available	94,913	32,557	2,688	130,158
Own	7,565	26,686	309	34,560
Rent	8,526	5,799	1,819	16,144
Other	1,217	1,865	140	3,222
Total	112,221	66,907	4,956	184,084

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999. Acxiom database.

Table 5-13.—Comparison of NHES:1999 presence of children to presence of children from Acxiom

Presence of children from NHES:1999	Presence of children from Acxiom			Total
	Not available	No children in household	Children in household	
Not available	105,640	4,720	16,446	126,806
No children in household	23,378	5,844	7,603	36,825
Children in household	8,970	409	11,074	20,453
Total	137,988	10,973	35,123	184,084

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999. Acxiom database.

Table 5-14.—Comparison of NHES:1999 household income (HINCOME) to income from Acxiom

Income from Acxiom (in $000)	NHES:1999 income (HINCOME), reported in thousands								Total
	Not available	< $15	$15-19	$20-29	$30-39	$40-49	$50-74	$75 or more	
Not available	92,212	1,117	400	898	809	496	737	713	97,382
<$15	8,835	555	192	349	265	114	149	132	10,591
$15-19	4,850	224	112	245	167	103	113	81	5,895
$20-29	8,907	342	204	544	441	244	283	203	11,168
$30-39	8,263	292	140	402	572	363	408	261	10,701
$40-49	7,264	184	109	335	381	440	551	337	9,601
$50-74	13,737	323	165	455	550	525	1,265	950	17,970
$75 or more	16,031	217	124	354	438	449	966	2,197	20,776
Total	160,099	3,254	1,446	3,582	3,623	2,734	4,472	4,874	184,084

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999. Acxiom database.

Despite these data quality issues, it is possible that the data are useful to determine whether any of the characteristics provided by Acxiom have the potential to be effective in reducing nonresponse bias. To examine this, a CHAID analysis was performed. This analysis mimicked the CHAID analysis described above, but some variables provided by Acxiom were included in addition to the exchange-level and geographic items.

As was the case in the previous CHAID analysis, the "mailing sent" variable was the most significant predictor of response propensity. For telephone numbers with mailable addresses, the indicator of whether an answering machine message was left was the next discriminator of response. In the case of telephone numbers to which mailings were sent but then Postmaster returned, median home value (from Genesys) was the second discriminator. For telephone numbers without mailable addresses, the Acxiom business flag was the second discriminator of response. This is likely to be due to differences in residency rates rather than response rates (in particular, lower residency rates for the cases without mailable addresses). Although the general pattern of cell-forming characteristics was very similar to that obtained during the original CHAID analysis, a few Acxiom variables were selected in forming the cells. Besides the business flag, the variable indicating the presence of children in the household appeared in some of the cells. An Acxiom variable indicating the year the housing unit was built was also selected. Because of the data quality issues described above, none of the Acxiom data were used in forming cells for nonresponse adjustment.

A Comparison of Estimates Based on Adjusted and Unadjusted Weights

One way of examining the magnitude of nonresponse bias and the probable effectiveness of statistical adjustments for nonresponse is to compare estimates computed using adjusted weights to those computed using unadjusted weights. (See Chapter 7 for details about the methodology used for weighting.) The unadjusted weight is the reciprocal of the probability of selection, reflecting all stages of selection. The adjusted weight is the extended interview weight adjusted for nonresponse (without the raking adjustment). It should be noted that the final raking adjustment also reduces nonresponse bias but is omitted for this analysis. In this analysis, the statistical significance of differences in estimates (based on a significance level of 0.05 for each individual test) was investigated only for those differences having practical significance; in this case, differences of at least 3 percentage points were judged to be of practical significance, since effects other than nonresponse bias may contribute in part to the differences in the estimates.

Estimates of Characteristics of Children (Parent Interview). In order to determine the effects of the nonresponse adjustment on the Parent component of NHES:1999, estimates of several overall characteristics of those surveyed were reviewed, including grade, Census region, race/ethnicity, sex, mother's employment status, mother's home language, educational attainment of mother, family type, and household income, by comparing the nonresponse-adjusted estimates and standard errors to unadjusted estimates and standard errors (table 5-15). In addition to these, estimates of various characteristics of parent and family involvement in school, of the child's development and care, and of the child's school were computed by race/ethnicity of the child, using the nonresponse adjusted weights and the unadjusted weights (table 5-16). No significant differences were observed in the comparison of estimates. The only one of these characteristics that was used in calculating the nonresponse adjustments was grade. The fact that there were no significant differences suggests that none of these variables were powerful predictors of response propensity. Therefore, the nonresponse adjustment had little effect on the potential bias, but it is possible that there was little to be removed. Even though grade did not differ significantly between the nonresponse-adjusted and unadjusted estimates, it was used for nonresponse adjustment because of its high correlation with characteristics of the education of children. Also, important analytic subgroups are formed using grade.

Table 5-15.—Parent Interview: Characteristics of children age 20 or younger who are enrolled in 12th grade or below. Comparison of estimates based on nonresponse-adjusted weights and unadjusted weights

Characteristic	Nonresponse-adjusted		Unadjusted	
	Estimate	s.e.	Estimate	s.e.
Estimated number of children (in thousands)	72,907	332	—[1]	—
Age/grade of child				
Infant (age 0 to 2)	12.5	0.2	12.7	0.3
Not enrolled (age 3 to 7)	4.7	0.1	4.7	0.1
Nursery school/preschool/prekindergarten/Head Start	6.1	0.1	6.0	0.1
Kindergarten	5.6	0.2	5.7	0.2
1	5.7	0.2	5.7	0.2
2	5.5	0.2	5.4	0.2
3	5.8	0.2	5.8	0.2
4	5.7	0.2	5.7	0.2
5	5.9	0.2	5.9	0.2
6	5.8	0.2	5.8	0.2
7	6.3	0.2	6.3	0.2
8	6.4	0.2	6.3	0.2
9	6.5	0.2	6.5	0.2
10	6.1	0.2	6.0	0.2
11	5.8	0.2	5.8	0.2
12	5.8	0.2	5.7	0.2
Census region				
Northeast	17.7	0.2	18.8	0.4
Midwest	24.0	0.2	23.0	0.4
South	35.2	0.2	35.5	0.4
West	23.1	0.2	22.7	0.4
Race/ethnicity of child				
White, non-Hispanic	68.0	0.4	68.9	0.4
Black, non-Hispanic	11.4	0.2	11.0	0.2
Hispanic	15.1	0.3	14.7	0.3
Other	5.6	0.2	5.4	0.2
Sex of child				
Male	50.8	0.4	50.7	0.4
Female	49.2	0.4	49.3	0.4
Mother's employment status[2]				
Employed	95.2	0.2	95.2	0.2
Unemployed	4.8	0.2	4.8	0.2

Table 5-15.—Parent Interview: Characteristics of children age 20 or younger who are enrolled in 12th grade or below. Comparison of estimates based on nonresponse-adjusted weights and unadjusted weights–Continued

Characteristic	Nonresponse-adjusted		Unadjusted	
	Estimate	s.e.	Estimate	s.e.
Mother's home language[2]				
English	93.4	0.2	93.6	0.2
Not English	6.7	0.2	6.5	0.2
Educational attainment of mother[2]				
Less than a high school diploma or its equivalent	12.8	0.3	12.7	0.3
High school diploma or its equivalent	25.3	0.4	25.4	0.4
Vocational education or some college	23.0	0.4	22.9	0.4
College degree	27.0	0.4	27.1	0.4
Graduate/professional training or degree	11.9	0.3	11.9	0.3
Family type				
Two parents	73.3	0.4	73.7	0.4
None or one parent	26.8	0.4	26.3	0.4
Household income				
$10,000 or less	6.3	0.2	6.2	0.2
$10,001 to $20,000	9.7	0.3	9.7	0.2
$20,001 to $30,000	13.6	0.3	13.6	0.3
$30,001 to $40,000	14.2	0.3	14.4	0.3
$40,001 to $50,000	11.4	0.3	11.5	0.3
$50,001 to $75,000	19.5	0.4	19.7	0.4
Over $75,000	25.3	0.5	24.9	0.4

[1]The total number of children cannot be estimated accurately using the unadjusted weights because these weights do not include adjustments for Screener nonresponse or for nonresponse to the Parent Interview.

[2]Excludes children in households with no mother or female guardian. "Mother's employment status" estimates exclude mothers who are not in the labor force.

NOTE: s.e. is standard error. Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Table 5-16.—Parent Interview: Characteristics of children age 20 or younger who are enrolled in 12th grade or below. Comparison of estimates by race/ethnicity based on nonresponse-adjusted weights and unadjusted weights

Characteristic	Overall				Race/ethnicity															
					White, non-Hispanic				Black, non-Hispanic				Hispanic				Other race/ethnicity			
	NR-adjusted		Unadjusted		NR-adjusted		Unadjusted		NR-adjusted		Unadjusted		NR-adjusted		Unadjusted		NR-adjusted		Unadjusted	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
Parent attended a school meeting																				
Yes	80.5	0.4	80.5	0.4	82.1	0.5	81.9	0.5	77.4	1.0	77.7	1.0	76.4	0.9	76.4	0.9	78.5	1.7	78.5	1.7
No	19.5	0.4	19.5	0.4	17.9	0.5	18.1	0.5	22.6	1.0	22.3	1.0	23.6	0.9	23.6	0.9	21.5	1.7	21.5	1.7
Parent attended a school or class event																				
Yes	68.2	0.4	68.3	0.4	72.7	0.6	72.7	0.6	58.0	1.2	58.1	1.2	55.8	0.9	55.9	0.9	65.0	1.9	65.1	1.8
No	31.8	0.4	31.7	0.4	27.3	0.6	27.4	0.6	42.0	1.2	41.9	1.2	44.2	0.9	44.1	0.9	35.0	1.9	34.9	1.8
Parent acted as a volunteer at school																				
Yes	41.0	0.4	41.1	0.4	45.5	0.5	45.5	0.5	31.1	1.2	31.1	1.2	29.9	1.0	29.8	1.0	34.1	1.9	33.9	1.9
No	59.0	0.4	58.9	0.4	54.5	0.5	54.5	0.5	68.9	1.2	69.0	1.2	70.1	1.0	70.2	1.0	65.9	1.9	66.1	1.9
Child developmentally delayed																				
Yes	3.2	0.2	3.1	0.2	3.2	0.3	3.1	0.3	3.0	0.6	3.0	0.6	3.0	0.5	3.1	0.5	4.4	1.2	4.3	1.1
No	96.8	0.2	96.9	0.2	96.8	0.3	96.9	0.3	97.0	0.6	97.0	0.6	97.0	0.5	96.9	0.5	95.6	1.2	95.7	1.1
Child has specific learning disability																				
Yes	8.0	0.3	7.9	0.3	8.1	0.3	8.1	0.3	8.1	0.7	8.1	0.7	7.2	0.6	7.0	0.6	7.3	1.2	7.2	1.1
No	92.0	0.3	92.1	0.3	91.9	0.3	91.9	0.3	91.9	0.7	91.9	0.7	92.8	0.6	93.0	0.6	92.7	1.2	92.8	1.1
Child has other health impairment																				
Yes	5.4	0.2	5.4	0.2	5.6	0.2	5.6	0.2	6.5	0.6	6.6	0.6	4.0	0.2	4.0	0.3	4.8	0.6	4.6	0.6
No	94.6	0.2	94.6	0.2	94.4	0.2	94.4	0.2	93.5	0.6	93.4	0.6	96.0	0.2	96.0	0.3	95.2	0.6	95.4	0.6

Table 5-16.—Parent Interview: Characteristics of children age 20 or younger who are enrolled in 12th grade or below. Comparison of estimates by race/ethnicity based on nonresponse-adjusted weights and unadjusted weights–Continued

Characteristic	Overall				Race/ethnicity															
					White, non-Hispanic				Black, non-Hispanic				Hispanic				Other race/ethnicity			
	NR-adjusted		Unadjusted		NR-adjusted		Unadjusted		NR-adjusted		Unadjusted		NR-adjusted		Unadjusted		NR-adjusted		Unadjusted	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
When child last saw an MD																				
Less than 1 year ago	95.4	0.3	95.3	0.3	95.2	0.3	95.2	0.3	95.1	1.0	95.2	0.9	95.9	0.5	95.7	0.5	95.6	1.2	95.2	1.4
1- less than 2 years ago	4.2	0.3	4.3	0.3	4.5	0.3	4.5	0.3	3.6	0.7	3.5	0.7	3.8	0.5	4.0	0.5	4.1	1.1	4.5	1.3
2 years or more ago	0.4	0.1	0.4	0.1	0.3	0.1	0.3	0.1	1.3	0.7	1.3	0.7	0.3	0.1	0.3	0.1	0.3	0.2	0.3	0.2
Child receiving nonrelative care																				
Yes	10.3	0.3	10.3	0.3	10.9	0.3	10.9	0.3	9.2	0.7	9.1	0.6	8.8	0.6	8.8	0.6	10.0	1.0	9.8	1.0
No	89.7	0.3	89.7	0.3	89.2	0.3	89.1	0.3	90.8	0.7	91.0	0.6	91.2	0.6	91.2	0.6	90.0	1.0	90.2	1.0
Child receiving relative care																				
Yes	19.5	0.4	19.5	0.4	16.2	0.4	16.3	0.4	30.9	1.2	30.9	1.1	23.5	0.9	23.6	0.9	23.5	1.9	23.7	1.8
No	80.5	0.4	80.5	0.4	83.8	0.4	83.7	0.4	69.1	1.2	69.1	1.1	76.5	0.9	76.4	0.9	76.5	1.9	76.3	1.8
Whether school assigned or chosen																				
Assigned	84.4	0.3	84.6	0.3	87.0	0.4	87.1	0.4	75.3	1.1	75.6	1.1	81.5	0.9	81.5	0.8	80.6	2.1	80.5	2.0
Chosen	13.3	0.3	13.2	0.3	10.6	0.4	10.5	0.4	22.9	1.0	22.6	1.0	16.7	0.9	16.7	0.9	17.3	1.9	17.5	1.9
Assigned school is chosen	2.3	0.1	2.3	0.1	2.5	0.2	2.5	0.2	1.8	0.4	1.8	0.4	1.8	0.3	1.9	0.3	2.2	0.8	2.1	0.7
Number of students in school																				
Less than 300	16.2	0.4	16.3	0.4	16.1	0.5	16.4	0.5	13.7	0.8	13.5	0.8	17.7	0.9	17.8	0.8	18.2	1.5	18.0	1.5
300-599	36.8	0.4	36.9	0.4	36.7	0.6	36.9	0.6	39.3	1.0	39.4	1.0	35.7	1.0	35.7	1.0	35.3	1.8	35.2	1.8
600-999	22.3	0.4	22.3	0.4	22.8	0.5	22.9	0.5	21.8	0.8	21.7	0.8	20.0	0.9	20.0	0.8	22.1	1.7	22.5	1.7
1,000 or more.	24.8	0.4	24.4	0.4	24.4	0.5	23.9	0.5	25.3	1.0	25.4	1.0	26.7	1.1	26.5	1.1	24.4	1.8	24.3	1.8

Table 5-16.—Parent Interview: Characteristics of children age 20 or younger who are enrolled in 12th grade or below. Comparison of estimates by race/ethnicity based on nonresponse-adjusted weights and unadjusted weights–Continued

Characteristic	Overall				Race/ethnicity															
					White, non-Hispanic				Black, non-Hispanic				Hispanic				Other race/ethnicity			
	NR-adjusted		Unadjusted		NR-adjusted		Unadjusted		NR-adjusted		Unadjusted		NR-adjusted		Unadjusted		NR-adjusted		Unadjusted	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
Contact from school about child's behavior																				
Yes	17.3	0.3	17.2	0.3	14.8	0.4	14.8	0.4	30.8	1.1	30.7	1.1	19.5	0.9	19.2	0.9	15.0	1.3	14.8	1.2
No	82.7	0.3	82.8	0.3	85.2	0.4	85.2	0.4	69.2	1.1	69.3	1.1	80.5	0.9	80.8	0.9	85.1	1.3	85.2	1.2
Child's overall grades																				
Mostly As	33.7	0.5	34.0	0.5	36.4	0.6	36.5	0.6	24.4	1.1	24.5	1.1	27.1	1.1	27.4	1.1	37.7	2.2	38.0	2.1
Mostly Bs	28.9	0.4	28.8	0.4	28.0	0.5	27.9	0.5	31.1	1.1	31.3	1.1	31.4	1.0	31.6	1.0	28.8	2.2	28.9	2.0
Mostly Cs	12.7	0.4	12.6	0.4	11.4	0.4	11.4	0.4	20.8	1.0	20.7	1.0	13.5	0.7	13.3	0.7	10.5	1.5	10.2	1.3
Mostly Ds	1.9	0.1	1.9	0.1	1.7	0.1	1.7	0.1	2.7	0.4	2.7	0.4	2.3	0.3	2.3	0.3	1.4	0.6	1.5	0.6
Mostly Fs	1.0	0.1	1.0	0.1	0.8	0.1	0.8	0.1	1.3	0.4	1.2	0.3	1.5	0.3	1.5	0.2	1.2	0.5	1.2	0.4
No grades given	21.8	0.4	21.7	0.4	21.8	0.4	21.7	0.5	19.7	1.0	19.6	1.0	24.3	1.0	24.0	1.0	20.4	1.7	20.3	1.6
Contact from school about child's school work																				
Yes	22.7	0.4	22.4	0.4	21.6	0.5	21.4	0.5	29.5	1.1	29.4	1.1	24.2	1.1	23.8	0.9	18.1	1.8	17.8	1.6
No	77.3	0.4	77.6	0.4	78.4	0.5	78.6	0.5	70.5	1.1	70.6	1.1	75.8	1.0	76.2	0.9	81.9	1.8	82.2	1.6

NOTE: NR-adjusted is nonresponse-adjusted. s.e. is standard error. Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Estimates of Characteristics of Youth (Youth Interview). In order to determine the effects of the nonresponse adjustment on the Youth component of NHES:1999, estimates of several overall characteristics of the youths surveyed were reviewed, including grade, sex, race/ethnicity, school type (public or private), and school size by comparing the nonresponse adjusted estimates and standard errors to unadjusted estimates and standard errors (table 5-17). In addition to these, estimates of whether the school requires and/or arranges community service activities were computed using the nonresponse adjusted weights and unadjusted weights (table 5-18). No significant differences were found between estimates using the two different weights.

Table 5-17.—Youth Interview: Characteristics of students in grades 6 through 12. Comparison of estimates based on nonresponse-adjusted weights and unadjusted weights

Characteristic	Percent of students			
	Nonresponse-adjusted		Unadjusted	
	Estimate	s.e.	Estimate	s.e.
Estimated number of youth (in thousands)	30,914	228	—[1]	—
Student's grade				
6	13.6	0.4	13.5	0.4
7	14.8	0.4	14.9	0.5
8	14.9	0.5	15.0	0.5
9	15.2	0.4	15.3	0.5
10	14.2	0.4	14.1	0.5
11	13.6	0.4	13.7	0.5
12	13.7	0.4	13.5	0.5
Student's sex				
Male	50.3	0.8	50.2	0.7
Female	49.7	0.8	49.8	0.7
Student's race/ethnicity				
White, non-Hispanic	71.3	0.5	72.1	0.5
Black, non-Hispanic	10.6	0.3	10.3	0.3
Hispanic	12.9	0.4	12.6	0.4
Other race/ethnicity	5.2	0.4	5.0	0.3
School type				
Public	89.7	0.4	89.7	0.4
Private	10.3	0.4	10.3	0.4
School size				
Under 300	10.0	0.5	10.2	0.5
300-599	28.2	0.7	28.4	0.6
600-999	24.1	0.5	24.3	0.5
1,000 or more	37.6	0.6	37.1	0.6

[1]The total number of youth cannot be estimated accurately using the unadjusted weights because these weights do not include adjustments for Screener nonresponse or for nonresponse to the Parent or Youth Interviews.

NOTE: s.e. is standard error. Because of rounding, details may not add to totals. Estimates for school type and school size do not include home schooled children.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Table 5-18.—Youth Interview: Characteristics of students in grades 6 through 12. Comparison of estimates of school practice to promote student community service by selected student and school characteristics based on nonresponse-adjusted weights and unadjusted weights

Characteristic	School requires and arranges community service				School only requires community service				School only arranges community service				School does not require or arrange community service			
	NR-adjusted		Unadjusted		NR-adjusted		Unadjusted		NR-adjusted		Unadjusted		NR-adjusted		Unadjusted	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
Total	19.6	0.5	18.9	0.5	1.4	0.1	1.4	0.1	67.6	0.6	67.1	0.6	11.5	0.5	12.6	0.5
Student's grade																
6-8	15.4	0.8	14.9	0.8	1.7	0.2	1.7	0.2	67.9	1.0	67.7	1.0	14.9	0.9	15.8	0.8
9-10	24.4	1.2	23.7	1.1	1.5	0.2	1.5	0.3	64.5	1.3	63.8	1.2	9.6	0.8	11.0	0.8
11-12	20.9	1.1	20.2	1.0	0.8	0.2	0.8	0.2	70.4	1.3	69.8	1.3	8.0	0.7	9.2	0.8
Student's sex																
Male	20.0	0.8	19.4	0.8	1.2	0.2	1.3	0.2	67.0	0.9	66.5	0.9	11.8	0.7	12.9	0.7
Female	19.1	0.8	18.5	0.7	1.6	0.2	2.5	0.2	68.2	0.9	67.7	0.9	11.1	0.7	12.3	0.7
Student's race/ethnicity																
White, non-Hispanic	17.3	0.6	16.9	0.6	1.1	0.1	1.1	0.1	70.1	0.8	69.4	0.8	11.6	0.7	12.7	0.6
Black, non-Hispanic	22.8	1.4	22.1	1.4	2.6	0.5	2.5	0.5	62.0	1.7	62.0	1.7	12.6	1.2	13.3	1.2
Hispanic	27.6	1.5	26.5	1.5	2.6	0.5	2.7	0.5	60.0	1.5	59.8	1.4	9.9	0.9	11.1	1.0
Other race/ethnicity	24.6	2.9	23.4	3.2	0.8	0.5	0.7	0.4	63.8	3.1	63.0	3.4	10.8	2.0	12.9	2.4
School type																
Public	16.8	0.6	16.4	0.6	1.3	0.1	1.4	0.1	70.0	0.7	70.3	0.7	11.9	0.5	12.0	0.5
Private	43.8	2.1	43.4	2.1	2.0	0.7	1.8	0.6	46.4	2.0	47.0	2.0	7.8	1.4	7.8	1.3
School size																
Under 300	16.7	1.6	16.2	1.5	2.4	0.5	2.4	0.5	63.3	2.5	63.8	2.4	17.7	2.1	17.6	2.0
300-599	18.7	1.0	18.6	1.0	1.6	0.3	1.6	0.2	66.9	1.2	67.2	1.2	12.7	1.0	12.6	1.0
600-999	18.9	1.2	18.4	1.2	1.3	0.3	1.3	0.3	68.6	1.5	68.9	1.5	11.2	1.1	11.4	1.0
1,000 or more	21.3	0.8	20.9	0.8	1.1	0.2	1.1	0.2	68.6	0.9	68.9	0.9	9.0	0.7	9.2	0.7

NOTE: NR-adjusted is nonresponse adjusted. s.e. is standard error. Because of rounding, details may not add to totals. Estimates for school type and school size do not include home schooled children.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Estimates of Characteristics of Adults (Adult Education Interview). In order to determine the effects of the nonresponse adjustment on the Adult component of NHES:1999, estimates of several overall characteristics of the adults surveyed were reviewed, including Census region, educational attainment, household income, race/ethnicity, and sex by comparing the nonresponse-adjusted estimates and standard errors to unadjusted estimates and standard errors (table 5-19). In addition to these, overall adult education participation, ABE/GED participation, ESL participation, credential program participation, apprenticeship program participation, work-related participation, and personal development participation by educational attainment, sex, and race/ethnicity were compared using the nonresponse adjusted weights and unadjusted weights (tables 5-20 through 5-22). No significant differences were found between estimates using the two different weights.

Table 5-19.—Adult Education Interview: Characteristics of adults. Comparison of estimates based on nonresponse-adjusted weights and unadjusted weights

Characteristic	Nonresponse-adjusted		Unadjusted	
	Estimate	s.e.	Estimate	s.e.
Estimated number of adults (in thousands)*	170,901	2,009	—	—
Census region				
Northeast	19.3	0.6	19.7	0.6
Midwest	24.9	0.7	23.8	0.8
South	34.6	0.8	35.0	0.8
West	21.2	0.7	21.5	0.7
Educational attainment				
Less than a high school diploma or its equivalent	10.5	0.4	10.2	0.4
High school diploma or its equivalent and/or some college, associate's degree, or voc/tech school	58.0	0.9	57.8	0.9
Bachelor's degree or higher	31.5	0.8	32.0	0.8
Household income				
$5,000 or less	2.5	0.2	2.5	0.2
$5,001 to $10,000	4.0	0.3	4.0	0.3
$10,001 to $15,000	4.5	0.3	4.6	0.3
$15,001 to $20,000	5.2	0.3	5.4	0.3
$20,001 to $25,000	6.2	0.4	6.2	0.4
$25,001 to $30,000	8.1	0.4	8.0	0.4
$30,001 to $35,000	6.1	0.4	6.1	0.4
$35,001 to $40,000	6.8	0.4	6.8	0.4
$40,001 to $50,000	11.0	0.5	11.0	0.4
$50,001 to $75,000	19.1	0.6	19.3	0.6
Over $75,000	26.6	0.6	26.3	0.6
Race/ethnicity				
White, non-Hispanic	76.4	0.7	77.3	0.7
Black, non-Hispanic	9.2	0.5	8.9	0.4
Hispanic	9.5	0.4	9.0	0.4
Other	5.0	0.4	4.8	0.3
Sex				
Male	44.6	0.6	43.1	0.7
Female	55.4	0.6	56.9	0.7

*The total number of adults cannot be estimated accurately using the unadjusted weights because these weights do not include adjustments for Screener nonresponse or for nonresponse to the Adult Education Interview.

NOTE: s.e. is standard error. Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Table 5-20.—Adult Education Interview: Percent of adults who took part in various adult education activities in a 12-month period, by race/ethnicity. Comparison of estimates based on nonresponse-adjusted and unadjusted weights

Type of adult education	All adults				Race/ethnicity: White, non-Hispanic			
	Nonresponse-adjusted		Unadjusted		Nonresponse-adjusted		Unadjusted	
	Estimate	s.e.	Estimate	s.e.	Estimate	s.e.	Estimate	s.e.
Estimated number of adults (in thousands)[1]	170,901	2,009	—	—	130,538	2,155	—	—
Types of activity								
Any adult education activity[2]	48.7	0.9	49.8	0.8	49.0	0.9	49.9	0.9
Any ABE/GED[3,4]	2.0	0.2	1.9	0.2	0.9	0.2	0.9	0.2
Any ESL[5]	10.8	1.6	11.3	1.6	7.8	3.2	7.5	3.0
Any credential programs[2]	18.0	0.6	18.2	0.6	16.4	0.7	16.6	0.6
Any apprenticeship program	1.8	0.2	1.8	0.2	1.4	0.2	1.4	0.2
Any work-related course	25.2	0.7	26.1	0.7	26.5	0.8	27.3	0.8
Any personal development course	24.5	0.7	25.1	0.7	25.5	0.8	26.0	0.8

Table 5-20.—Adult Education Interview: Percent of adults who took part in various adult education activities in a 12-month period, by race/ethnicity. Comparison of estimates based on nonresponse-adjusted and unadjusted weights—Continued

Type of adult education	Race/ethnicity							
	Black, non-Hispanic				Hispanic			
	Nonresponse-adjusted		Unadjusted		Nonresponse-adjusted		Unadjusted	
	Estimate	s.e.	Estimate	s.e.	Estimate	s.e.	Estimate	s.e.
Estimated number of adults (in thousands)[1]	15,678	774	—	—	16,176	742	—	—
Types of activity								
Any adult education activity[2]	51.2	2.5	52.5	2.5	42.9	2.3	44.5	2.2
Any ABE/GED[3,4]	3.7	0.9	3.9	0.9	7.8	1.0	8.1	1.0
Any ESL[5]	19.5	3.8	20.2	14.1	11.1	1.9	11.9	1.0
Any credential programs[2]	22.4	2.0	23.0	1.9	18.8	1.7	19.8	1.7
Any apprenticeship program	3.8	2.1	3.6	1.9	3.5	0.9	3.5	0.8
Any work-related course	23.8	2.4	24.5	2.3	15.7	1.7	16.4	1.7
Any personal development course	26.4	2.3	27.2	2.2	16.2	1.5	17.1	1.5

Table 5-20.—Adult Education Interview: Percent of adults who took part in various adult education activities in a 12-month period, by race/ethnicity. Comparison of estimates based on nonresponse-adjusted and unadjusted weights—Continued

Type of adult education	Race/ethnicity			
	Other race/ethnicity			
	Nonresponse-adjusted		Unadjusted	
	Estimate	s.e.	Estimate	s.e.
Estimated number of adults (in thousands)[1]	8,509	616	—	—
Types of activity				
Any adult education activity[2]	50.6	3.4	51.9	3.3
Any ABE/GED[3,4]	3.9	1.3	1.9	0.2
Any ESL[5]	10.7	4.3	10.3	4.1
Any credential programs[2]	32.0	2.5	32.8	2.5
Any apprenticeship program	1.7	0.6	1.7	0.6
Any work-related course	27.0	3.0	27.7	2.9
Any personal development course	21.6	2.5	22.1	2.6

[1] The total number of adults cannot be estimated accurately using the unadjusted weights because these weights do not include adjustments for Screener nonresponse or for nonresponse to the Adult Education Interview.

[2] Adults who participated in a credential program on a full-time basis only, for part or all of the year, and did not participate in any other type of formal educational activity are not counted as participants in adult education. Adults who participated in a credential program on a full-time basis only and also participated in another type of adult education are included in the overall rate and the rate for the type of noncredential adult education in which they participated, but not in the credential program rate. Adults who participated in a credential program on a part-time basis only or on both part-time and full-time bases are included in the credential rate and the overall rate.

[3] Adult basic education/general education development (ABE/GED). Respondents who did not have a high school diploma or its equivalent, received a high school diploma or its equivalent in the past 12 months, or received a high school diploma in a foreign country were asked about participation in adult basic education, GED preparation classes, adult high school equivalency programs.

[4] Persons with a bachelor's degree or more education were not asked about participation in adult basic education, GED preparation classes, adult high school, or high school equivalency programs.

[5] Respondents whose primary language is other than English were asked about participation in English as a second language classes.

NOTE: s.e. is standard error. Percents for different types of adult education sum to more than the overall participation rate because some adults participate in more than one type of activity or program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Table 5-21.—Adult Education Interview: Percent of adults who took part in various adult education activities in a 12-month period, by sex. Comparison of estimates based on nonresponse-adjusted and unadjusted weights

Type of adult education	All adults				Sex							
					Male				Female			
	Nonresponse-adjusted		Unadjusted		Nonresponse-adjusted		Unadjusted		Nonresponse-adjusted		Unadjusted	
	Estimate	s.e.	Estimate	s.e.	Estimate	s.e.	Estimate	s.e.	Estimate	s.e.	Estimate	s.e.
Estimated number of adults (in thousands)[1]	170,901	2,009	—	—	76,170	1,286	—	—	94,730	1,706	—	—
Types of activity												
Any adult education activity[2]	48.7	0.9	49.8	0.8	45.6	1.1	47.0	1.1	51.2	1.2	51.9	1.1
Any ABE/GED[3,4]	2.0	0.2	1.9	0.2	2.3	0.3	2.3	0.3	1.7	0.2	1.7	0.2
Any ESL[5]	10.8	1.6	11.3	1.6	10.5	2.2	11.5	2.4	11.1	2.2	11.1	2.2
Any credential programs[2]	18.0	0.6	18.2	0.6	18.4	1.0	19.1	1.0	17.6	0.7	17.6	0.6
Any apprenticeship program	1.8	0.2	1.8	0.2	2.5	0.4	2.5	0.4	1.3	0.4	1.2	0.3
Any work-related course	25.2	0.7	26.1	0.7	25.3	0.9	26.3	1.0	25.1	1.0	25.9	0.9
Any personal development course	24.5	0.7	25.1	0.7	18.7	0.9	19.2	0.9	29.2	1.0	29.5	1.0

[1] The total number of adults cannot be estimated accurately using the unadjusted weights because these weights do not include adjustments for Screener nonresponse or for nonresponse to the Adult Education Interview.

[2] Adults who participated in a credential program on a full-time basis only, for part or all of the year, and did not participate in any other type of formal educational activity are not counted as participants in adult education. Adults who participated in a credential program on a full-time basis only and also participated in another type of adult education are included in the overall rate and the rate for the type of noncredential adult education in which they participated, but not in the credential program rate. Adults who participated in a credential program on a part-time basis only or on both part-time and full-time bases are included in the credential rate and the overall rate.

[3] Adult basic education/general education development (ABE/GED). Respondents who did not have a high school diploma or its equivalent, received a high school diploma or its equivalent in the past 12 months, or received a high school diploma in a foreign country were asked about participation in adult basic education, GED preparation classes, adult high school equivalency programs.

[4] Persons with a bachelor's degree or more education were not asked about participation in adult basic education, GED preparation classes, adult high school, or high school equivalency programs.

[5] Respondents whose primary language is other than English were asked about participation in English as a second language classes.

NOTE: s.e. is standard error. Percents for different types of adult education sum to more than the overall participation rate because some adults participate in more than one type of activity or program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Table 5-22.—Adult Education Interview: Percent of adults who took part in various adult education activities in a 12-month period, by educational achievement. Comparison of estimates based on nonresponse-adjusted and unadjusted weights

Type of adult education	All adults				Educational attainment			
					Less than a high school diploma or its equivalent			
	Nonresponse-adjusted		Unadjusted		Nonresponse-adjusted		Unadjusted	
	Estimate	s.e.	Estimate	s.e.	Estimate	s.e.	Estimate	s.e.
Estimated number of adults (in thousands)[1]	170,901	2,009	—	—	17,945	756	—	—
Types of activity								
Any adult education activity[2]	48.7	0.9	50.2	0.8	23.7	1.9	23.5	1.8
Any ABE/GED[3,4]	2.0	0.2	1.9	0.2	12.3	1.7	12.2	1.6
Any ESL[5]	10.8	1.6	11.3	1.6	12.4	3.0	12.9	3.0
Any credential programs[2]	18.0	0.6	18.2	0.6	3.3	0.8	3.2	0.8
Any apprenticeship program	1.8	0.2	1.8	0.2	1.4	0.6	1.2	0.4
Any work-related course	25.2	0.7	26.1	0.7	4.1	0.8	4.4	0.9
Any personal development course	24.5	0.7	25.1	0.7	8.4	1.3	8.3	1.2

Table 5-22.—Adult Education Interview: Percent of adults who took part in various adult education activities in a 12-month period, by educational achievement. Comparison of estimates based on nonresponse-adjusted and unadjusted weights—Continued

Type of adult education	Educational attainment							
	High school diploma or its equivalent, some college, associate's degree, or vocational/technical school				Bachelor's degree or higher			
	Nonresponse-adjusted		Unadjusted		Nonresponse-adjusted		Unadjusted	
	Estimate	s.e.	Estimate	s.e.	Estimate	s.e.	Estimate	s.e.
Estimated number of adults (in thousands)[1]	99,180	1,840	—	—	53,776	1,520	—	—
Types of activity								
Any adult education activity[2]	45.5	1.1	46.5	1.1	63.1	1.5	64.1	1.5
Any ABE/GED[3,4]	0.9	0.2	0.9	0.7	<0.5	0.7	<0.5	0.2
Any ESL[5]	9.2	1.9	10.0	2.1	11.4	3.8	11.0	3.5
Any credential programs[2]	20.9	0.8	21.2	0.8	17.4	1.0	17.7	1.0
Any apprenticeship program	2.3	0.4	2.3	0.4	1.0	0.2	1.0	0.2
Any work-related course	21.4	0.8	22.1	0.8	39.3	1.6	40.2	1.6
Any personal development course	23.0	1.0	23.6	1.0	32.7	1.4	33.2	1.4

[1] The total number of adults cannot be estimated accurately using the unadjusted weights because these weights do not include adjustments for Screener nonresponse or for nonresponse to the Adult Education Interview.

[2] Adults who participated in a credential program on a full-time basis only, for part or all of the year, and did not participate in any other type of formal educational activity are not counted as participants in adult education. Adults who participated in a credential program on a full-time basis only and also participated in another type of adult education are included in the overall rate and the rate for the type of noncredential adult education in which they participated, but not in the credential program rate. Adults who participated in a credential program on a part-time basis only or on both part-time and full-time bases are included in the credential rate and the overall rate.

[3] Adult basic education/general education development (ABE/GED). Respondents who did not have a high school diploma or its equivalent, received a high school diploma or its equivalent in the past 12 months, or received a high school diploma in a foreign country were asked about participation in adult basic education, GED preparation classes, adult high school equivalency programs.

[4] Persons with a bachelor's degree or more education were not asked about participation in adult basic education, GED preparation classes, adult high school, or high school equivalency programs.

[5] Respondents whose primary language is other than English were asked about participation in English as a second language classes.

NOTE: s.e. is standard error. Percents for different types of adult education sum to more than the overall participation rate because some adults participate in more than one type of activity or program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Conclusions

The analysis of nonresponse bias shows no evidence of bias in estimates from the NHES:1999 Parent, Youth, and Adult Education Interviews. The statistical adjustments used in weighting may have corrected at least partially for biases that might have existed due to differential nonresponse. Of course, nonresponse bias may still be present in other variables that were not studied.

In the NHES:1999, the largest component of nonresponse was nonresponse to the Screener. With the use of a CHAID analysis to create the nonresponse adjustment cells that were used to adjust for Screener nonresponse, there is evidence to suggest that there is little nonresponse bias attributable to Screener nonresponse.

Evidence from previous studies (see Brick, Collins, and Chandler 1997) suggested that a good predictor of extended interview response propensity is whether the person serving as the extended interview respondent was also the Screener respondent. This was evidenced by the difference in response rates of the corresponding items in tables 5-9 and 5-10. This item was used in forming the cells for nonresponse adjustment for the Adult Education and Adult Special Study Interviews. Other items were selected for use in forming nonresponse adjustment cells based on either previous evidence of their power to predict response propensity or the extent of their use in forming analytic subgroups.

The results of a study of the potential for using data from an outside vendor, Acxiom, to form nonresponse adjustment cells show that some items provided by Acxiom may be useful in forming cells for nonresponse adjustment. While these items were not the most predictive of response, they could be used in combination with characteristics provided by Genesys to create classes that differentiate with respect to response propensity. However, because of data quality issues cited earlier in this section, the Acxiom data were not used to form cells for nonresponse adjustment in the NHES:1999. Further exploration of the quality of the data is warranted.

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6. ITEM RESPONSE AND IMPUTATION

Introduction

In the NHES:1999, as in most surveys, the responses to some data items were not obtained for all interviews. There are numerous reasons for item nonresponse. Some respondents do not know the answer for the item or do not wish to respond for other reasons, e.g., privacy. Some item nonresponse arises when an interview is interrupted and not continued later, leaving items at the end of the interview blank. Item nonresponse may also be encountered because responses provided by the respondent are not internally consistent, and this inconsistency is not discovered until after the interview is completed. In these cases, the items that were not internally consistent were set to missing.

For most of the data items collected in the NHES:1999, the item response rate was very high. The median item response rate for imputed items from the Parent Interview was 98.96 percent; for the Youth Interview data, 98.41 percent; and for the Adult Education Interview, 99.25 percent. Despite the high item response rates, virtually all data items with missing data on the file were imputed. The imputations were done for three reasons. First, complete responses were needed for the variables used in developing the sampling weights. Second, users will be computing estimates employing a variety of methods, and complete responses should aid their analyses. Third, imputation may be used to reduce bias due to item nonresponse, by obtaining imputed values from donors that are similar to the recipients.

For the public release files, the exceptions were the nine knowledge about government items. (For those items, answers of “don't know” or “refused” are regarded as valid but incorrect responses. As such, they were not imputed.) Character string variables, such as countries of origin, languages, or “other/specify” responses were also not imputed. These character string variables do not appear on the public use data files; they appear only on the restricted use data file.

Methodology

The methodology used for imputation in the NHES:1999 is very similar to that used in previous NHES survey administrations. The imputation procedures were developed based on the procedures for imputing items in the NHES:1995 and the NHES:1996.

A hot-deck procedure was used to impute missing responses (Kalton and Kasprzyk 1986). In this approach, the entire file was sorted into cells defined by characteristics of households or respondents. These characteristics, or boundary variables, were used to group respondents into those most likely to have the same response or the same response propensity for the data item to be imputed. Two types of boundary variables were used. "Hard" boundary variables were considered to be so important that the donor and the recipient were required to match exactly. For other sort variables, called "soft" boundary variables, the values did not have to match exactly. In effect, the hard boundary variables were matching variables and the soft boundary variables were used to order the cases within the matching variables. The variables used as sort variables in the imputation of items in the NHES:1995 and the NHES:1996 were considered in order to arrive at a final set of standard imputation sort variables for each of the NHES:1999 interview components.

The WESDECK software was used to implement the hot-deck imputation procedure. WESDECK is a proprietary SAS macro developed by Westat to form hot-deck cells, impute using the hot-deck method, and generate output to verify the imputation.

The standard set of sort order variables for the household-level items collected in the Parent, Youth, Adult Education, and Adult Special Study Interviews consisted of the following:

- CENREG—the Census region in which the household was located;
- HINCOME or HINCMRNG—household income category (broad or specific, respectively);
- KIDINHH—a variable derived for imputation from the age (AGE) of household members indicating whether or not children under age 18 resided in the household; and
- HOWNHOME—whether the home was rented versus owned or other arrangement.

The standard sort order variables for the person-level items on the Parent Interview file were as follows:

- MAINRSLT—the final completion code for the interview;
- ALLGRADR—a variable derived for imputation that indicates the grade/grade equivalent of the sampled child;
- SEX—sex of the sampled child;
- PARGRADS—a variable that indicates the highest education level attained by either parent in the household as less than high school diploma, high school diploma but no

bachelor's degree, or college graduate; derived from highest grade completed by mother (MOMGRADE), whether mother has high school diploma or equivalent (MOMDIPL), highest grade completed by father (DADGRADE), and whether father has high school diploma or equivalent (DADDIPL); and

- HHPARNS—a variable derived for imputation from specific relationship of mother to child (MOMTYPE), specific relationship of father to child (DADTYPE), and Parent interview respondent's sex (RESPSEX) indicating whether there were two parents in the household or not.

The standard sort order variables for the person-level items from the Youth Interview were as follows:

- ALLGRADR—a variable derived for imputation that indicates the grade/grade equivalent of the sampled child;
- SPUBLIC—whether the sampled child attends a public or private school;
- SEX—sex of the sampled child; and
- PARGRADR—a variable derived for imputation that indicates the highest education level attained by either parent in the household as less than high school diploma, high school diploma but no bachelor's degree, or college graduate; derived from MOMGRADE, MOMDIPL, DADGRADE, and DADDIPL.

The standard sort order variables for the person-level items from the Adult Education Interview and Adult Special Study Interview files were as follows:

- PARTIC—a variable derived for imputation that indicates whether the adult participated in any adult education activities (including full-time credential) in the last year;
- EDUC—a variable derived for imputation that indicates whether or not the adult has at least a high school diploma or the equivalent;
- AGECAT—a variable derived for imputation from AGE of the adult, with the categories 18 through 29 years, 30 through 49 years, and 50 or older;
- ARACETH—a variable derived for imputation that classifies the respondent as black, non-Hispanic; Hispanic; or other; and
- HINCMRNG—the household income range.

For items that were sometimes skipped, a "trigger" variable was included as one of the hard boundary variables. The trigger variable ensured that the skip pattern in the questionnaire was maintained. The trigger variable could be either a single variable or a set of conditions that determine

whether the respondent is eligible for the particular question, i.e., whether the variable in question should be answered or skipped. In some cases, an item was originally coded –1 (inapplicable) because of nonresponse to a component of the trigger, but the item became applicable as a result of the imputed value for the trigger component. In such cases, the item was recoded from –1 to –9 and imputed. If, on the other hand, the trigger indicated that the item should have been skipped, the variable was set equal to –1 (if it was not already equal to –1) prior to running WESDECK.

All of the observations were classified into cells defined by the responses to the sort variables, and then divided into two classes within the cell depending on whether or not the item was missing. The donors consisted of observations with complete data for the item; recipients were observations for which the item was missing. For an observation with a missing value, a value from a randomly selected donor (observation in the same cell but with the item completed) was used to replace the missing value. This method is called a hot-deck procedure because actual values are imputed from donors selected from the current data set. After the imputation was completed, edit programs were run to ensure the imputed responses did not violate skip patterns or edit rules.

After values had been imputed for all observations with missing values, the distribution of the item prior to imputation (i.e., the respondents' distribution) was compared to the post-imputation distributions of the imputed values alone and of the imputed values together with the observed values. This comparison is an important step in assessing the potential impact of item nonresponse bias, particularly for items with relatively low response rates (less than 90 percent). There were 51 items in the Parent file with response rates of less than 90 percent, 23 items in the Youth file, and 9 items in the Adult Education file. The comparisons revealed similar item distributions pre- and post-imputation. If the comparisons had revealed dissimilar item distributions pre- and post-imputation, the differences would have been investigated. Such an investigation would have aimed to determine whether the differences likely reflected a reduction in item nonresponse bias. Such a reduction is possible because characteristics associated with response propensity are often used to develop imputation cells.

For each data item for which any values were imputed, an imputation flag variable was created. If the response for the item was not imputed, the imputation flag was set equal to 0. If the response was imputed, the flag was set to either 1, 2, 3, or 4. The value of the imputation flag indicates the specific procedure used to impute the missing value. The imputation flag was typically set to 1 if the missing value was imputed using the standard hot-deck approach. In some cases, variables had to be recoded to be consistent with the skip patterns of the questionnaire prior to being imputed using the standard hot-deck approach; for these cases, the imputation flag was set to 2. For items that were imputed manually, the flag was set to 3. The imputation flag was set to 4 for cases in which the original response

had been "don't know." The flag value of 4 may provide analytic utility in the analysis of variables such as PSCOLAMT, PSCESTUI, PSCESAMT, PS4YRTUI, HNDOCWHN, and HNDNTWHN on the Parent file; SAARRSER, FCPOSTHS, YSCOLAMT, and YSCESTUI on the Youth file; and GIHOPE, GILIFE, and CONTREQ on the Adult Education and Adult Special Study files. (These items may be found in the questionnaires given in appendix B. This list of variables is provided for illustrative purposes only, and is not all-inclusive.)

The imputation flags were created to enable users to identify imputed values. Users can employ the imputation flag to delete the imputed values, use alternative imputation procedures, or account for the imputation in computation of the reliability of the estimates produced from the data set. (If there is no imputation flag corresponding to a particular variable, no values for that variable were imputed.) For example, some users might wish to analyze the data with the missing values rather than the imputed values. If the imputation flag corresponding to the variable is equal to 1, 2, 3, or 4, the user can replace the imputed response with a missing value to accomplish this goal. This method could also be used to replace the imputed value with a value imputed by some user-defined imputation approach.

Item nonresponse and imputation contribute to the variances of estimators. (See, for example, Rao and Shao (1992) for a discussion of this.) Therefore, treating imputed values as if they had been reported and using standard variance estimators may result in substantial underestimation of the variance of an estimator, particularly if item nonresponse rates are high. If the user wishes to account for the fact that some of the data were imputed when computing sampling errors for the estimates, the missing values could be imputed using multiple imputation methods (Rubin 1987) or imputed so that the Rao and Shao (1992) variance procedures could be used. Imputation flags are required for applying these methods.

Manual Imputation

For some items, the missing values were imputed manually rather than using the hot-deck procedure. In the NHES:1999, hand imputation was done (1) to impute certain person-level demographic characteristics; (2) to impute whether a child is home schooled, if the child attends regular school for some classes, and the number of hours the child attends regular school; (3) to correct for a small number of inconsistent imputed values; and (4) to impute for a few cases when no donors with matching sort variable values could be found.

Some person-level characteristics from the Screener and from the "Demographic Characteristics" section of the Parent Interview and the "Initial Background" and "Remaining Background" sections of the Adult Education Interview were imputed manually because these variables typically involve complex relationships and/or constraints that would have required extensive programming in order to impute using a hot-deck procedure. The same is true of the items indicating whether a child is home schooled, if the child attends regular school for some classes, and the number of hours the child attends regular school. Furthermore, the reasonableness of imputed values for these person-level characteristics can often be assessed by examining the values of these variables for other members of the household. For example, while there is an increasing incidence of mixed-race households, the race of household members tends to be the same in most cases. Education is also correlated among adults within households The use of the manual imputation approach in this situation permits the review of the characteristics of household members when imputing the missing values on the person-level variables.

Manual imputation was also used to correct for inconsistent values following post-imputation data editing. Following imputation, edit programs were run to ensure that the imputed responses did not violate edit rules. When violations or inconsistencies were detected, manual imputation was used in some cases to reimpute for a very small number of cases. The distribution of the item was used to arrive at the new values; typically, a modal value was imputed. In some cases, the overall mode was imputed, and in other cases, a modal value for a subgroup was imputed.

The final use of manual imputation was to impute for a few cases when no donors with matching hard boundary variable values could be found. For these cases, when relaxing the hard boundary variable requirements still did not produce a donor, manual imputation was done. The distribution of the item was used to assign imputed values; typically, a modal value was imputed. In some cases, the overall mode was imputed, and in other cases, a modal value for a subgroup was imputed.

For hand imputation of the person-level demographic items and of the home schooling items, three sort variables were used. State was used as the first sort variable; that is, whenever possible, all values were imputed from within-state donors. Because there is some geographic clustering of subpopulations within states, the 3-digit ZIP code of the household was used as the second sort variable. Third, cases were sorted by the person identification number. Because all household members share the first 8 digits of their identification numbers, this resulted in all household members being grouped together.

The following is a description of the specifications used to manually impute specific items.

Age and Year of Birth. In the imputation of age for preschoolers and children enrolled in grades kindergarten through 12, the grade of the child was used as a hard boundary. For adults with missing age, if there was a Parent Interview in the household, the relationship of the person with missing age to the child sampled for a Parent Interview was used as a hard boundary variable in the imputation of age. When the age of a parent was missing and the age of the other parent was available, the other parent was used as the donor in the imputation of age. When there was only one parent in the household and his or her age was missing, age was imputed from the previous single-adult household with a child the same age as the oldest child in the missing-variable household (within the same state, and within the same 3-digit ZIP code, if possible).

When the value of age for an adult was missing and there was no Parent Interview in the household, the age of the missing person was imputed as the median age of the adult household members. When the adult for whom the age was missing was the only adult in the household, the age of the adult in the previous single-adult household within the same state and within the same 3-digit ZIP code was used.

For adults sampled for an Adult Interview with missing year of birth (ADOBYY), year of birth was updated based on age or imputed after imputing age, such that year of birth was consistent with age. Month of birth (ADOBMM and CDOBMM) was imputed from the nearest eligible donor who was born in the same year or within 5 years, within the 3-digit ZIP code and state. (Child's year of birth, CDOBYY, was never missing; the interview was terminated if the responding parent did not know or refused to give the sampled child's year of birth.)

Sex. Sex was imputed in two ways. First, deductive imputation was used when the information in the household suggested an appropriate answer. For example, if there were two household members and one reported that he or she is married, and one was male and the other was missing on sex, the latter person was imputed as female. For cases in which an appropriate answer could not be deduced, the value of sex was imputed as male or female with equal probability.

Race (Including "Other" Race) and Hispanic Origin. Race and Hispanic origin were imputed in different ways, depending on the information available about the household members. First, if race and Hispanic origin were available for other household members, this information was used to impute race and Hispanic origin for the person for whom the data were missing. The household member enumerated immediately before the person with the missing value was used as the donor. (If the person with the missing value was enumerated first, then the following person in the household was used as the

donor.) When race and/or Hispanic origin were available for no household members, the first enumerated household member in the next within-state, within 3-digit ZIP code household was used as the donor.

Country of Birth and First Language. The country of birth and first language variables were imputed using the same procedure as described above for race and Hispanic origin.

Marital Status. In the imputation of marital status, the number of adults in the household (classified as "one adult" or "more than one adult") was used as a hard boundary.

Active Duty Status and Household Residency. In order to avoid imputing a sampled adult to be ineligible for the Adult Education Interview, active duty military status (XACTVDUT) was imputed to "not currently serving on active duty in the U.S. Armed Forces" and household residency (LIVENOW) was imputed to "adult is living here (in this household)."

Home Schooling. The home schooling variable HOMESCHL was imputed for persons age 5 through age 17 who did not have a grade, a grade equivalent, or a highest grade that is postsecondary. For persons under age 5, the value of the home schooling question was set to –1. (This was an update, not an imputation. More will be said about updates later in this chapter.) For persons age 18 or older and persons younger than 18 with a postsecondary grade reported, the value of the home schooling question was set to "no" based on the interview skip patterns. (Again, this was treated as an update, not an imputation.)

For the imputation of HOMESCHL, age was used as an additional within-household sort variable (in place of enumeration order). When there were no other children in the household, the Parent Interview items were examined to see if the parent had reported visiting the child's school, attending parent/teacher meetings, and so on, and whether there were any interviewer comments relating to home school status; in such cases, deductive imputation was used if home schooling status could be deduced from these items.

A few additional home school variables were manually imputed using the population of home schoolers as donors. Whether the child receives all schooling at home (HOMEALL) and the number of hours per week the child goes to school for instruction (HOMSCHR) triggered the administration of some questions about regular school. Whenever possible, the donors were located within the 3-digit ZIP code or within the state. Other home school variables were imputed using the WESDECK procedure.

Grade in School/Highest Grade Completed/High School Diploma. Grade in school (GRADE and GRADEEQ) and highest grade completed (MOMGRADE, DADGRADE, IBGRADE) were imputed using age as an additional sort variable. When the person with the missing value was age 25 or younger, the donor was of the same age, unless there was no donor of the same age available; in this case, the donor was within 1 year of age in either direction. When the person was over age 25, the donor was the person closest in age to the recipient within the state and ZIP code whose possession of a high school diploma or not was the same as the person with the missing variable, if available. When grade in school did need to be imputed but a following item was missing (e.g., MOMDIPL), the donor was the person with the same grade or educational attainment who was closest in age within state and ZIP code.

Same School. The variable that indicated whether two children in the family attended the same school, SSAME, was used for convenience to avoid administering some school items twice to the parent respondent for two children who attended the same school. It was created to trigger a skip, in order to reduce respondent burden; however, it is not intended to be used for analytic purposes. It was imputed to "no" because if the value of SSAME was missing, the items were administered the second time in the interview.

Relationship. When a household member's relationship to the sampled child was missing, the variable RELATION was imputed manually. The age, gender, and relationship of all household members to the subject child were examined to determine the likely relationship of the person missing on that variable.

Updates and imputations. Some of the values changed during the manual imputation process were actually updates. This occurred when a value was missing on one data file but was available from another source in the database. For example, when an adult had a missing value on the variable ADIPL (have a high school diploma), the database was checked to see if that person was the mother or father of a sampled child and, if so, the value of MOMDIPL or DADDIPL (as appropriate) was used to update ADIPL. Conversely, when ADIPL was available for the mother or father but MOMDIPL or DADDIPL had missing values, the value of ADIPL was used to update MOMDIPL or DADDIPL. Very few values were updated in this way. In general, this process was not considered imputation because the response was obtained from the household. The exception was when neither variable had a reported value. In such cases, one variable (e.g., ADIPL) was imputed, and the imputed value was copied into the other variable (e.g., MOMDIPL); likewise, the value of the imputation flag for the first variable was copied into the value of the imputation flag for the second variable.

Item Response Rates

For most of the data items collected in the NHES:1999, the overall item response rate was very high. However, for certain subgroups, the item response rates for some items may vary considerably. It is recommended that analysts examine the item response rates for the items in their analyses, for the subgroups under consideration.

The tables in this chapter show the item response rates for items on the public data files and the Adult Special Study restricted data file. The number of cases for which each item was attempted and the percentage of cases for which a valid response was obtained are shown, as well as the percent of imputed cases that were manually imputed. Tables 6-1, 6-2, 6-3, and 6-4 show the item response rates for items on the Parent, Youth, Adult Education**,** and Adult Special Study files, respectively. For the Parent, Youth, Adult Education**,** and Adult Special Study questionnaires, the median item response rates for imputed items were 98.96 percent, 98.41 percent, 99.25 percent, and 98.82 percent, respectively.

As shown in table 6-1, most items on the Parent Interview public use data file have item response rates over 90 percent. The items with response rates of less than 90 percent include items pertaining to the child's plans for and the cost of and financing for postsecondary education (SECOLLEG, PS4YRAMT, PSSTART, PS4YRTUI, PSOESAMT, PSCOLTYE, PSCOLTUI, PS4YRINC, PSCESAMT, PSCOLST, PSCESTUI, PSOESINC, PS2YRAMT, PSCESINC, PSCOLAMT, PSCOLINC, PS2YRINC, PSOTHAMT, PSOTHINC, PSLIFUS, and PSHOPUS); cost of child care items (RCCSTHN, RCCSTHH, NCUNIT, CPCSTHH, NCCSTHN, NCCSTHH, CPCSTHN, RCUNIT, HSCSTHH, and HSUNIT); items pertaining to home schoolers only (HSACTVSU, HOMSCHR, HSACTVS, HSSTPLC, HSPAPLC, HSSTPLCU, HSMATLSU, HSPAPLCU, HSMATLS, HSCURRU, HSCURR, HSATTND, HSSTWEB, HSPAWEBU, and HSPAWEB, HSSTWEBU,); and income items (HINCOME and HINCMEXT). Household income items traditionally generate high nonresponse because many people are sensitive about providing information about their household income, and prefer to respond with a general income range. The items pertaining to postsecondary education are likely to have relatively lower response rates because decisions about postsecondary education have not yet been made. The relatively lower response rates for cost of child care items may be due to the instances in which the Parent Interview respondent is not the person who makes payments for child care. Small sample sizes might explain the response rates below 90 percent for some of the home school items; for such items, relatively few nonrespondents may result in a high item nonresponse rate.

Items with response rates of less than 90 percent on the Youth Interview public file (table 6-2) are primarily items pertaining to the youth's plans for and the cost of postsecondary education

(YSCESAMT, YSCESINC, YS4YRAMT, YSOESAMT, YS4YRINC, YSOESINC, YSCOLAMT, YS2YRAMT, YS2YRINC, YSOTHAMT, and YSOTHINC). These items are likely to have relatively lower response rates because decisions about postsecondary education have not yet been made.

Items with response rates of less than 90 percent on the Adult Education Interview public file (table 6-3) include income and earnings items (HINCMRNG, HINCOME, HINCMEXT, EARNAMT, and EARNUNT); the question about using the Lifetime Learning Tax Credit (GILIFUS); and a few items pertaining to basic skills courses (BSDAYS and BSWKS). As noted previously, income and earnings items traditionally generate high nonresponse because many people are sensitive about providing information about their income and earnings. For items that are asked only of a small subgroup of respondents, e.g., the items pertaining to basic skills courses, a small number of missing values could result in a low item response rate.

Items with response rates of less than 90 percent on the Adult Special Study Interview restricted data file (table 6-4) include income and earnings items (HINCMRNG, HINCOME, HINCMEXT, EARNAMT, and EARNUNT); the question about using the Lifetime Learning Tax Credit (GILIFUS); the question about whether the respondent could have taken a job last week; and a few items pertaining to basic skills and ESL courses (BSFMLIT, GIOTGED, and ESWKS). As noted previously, income and earnings items traditionally generate high nonresponse because many people are sensitive about providing information about their income and earnings. For items that are asked only of a small subgroup of respondents, e.g., the items pertaining to basic skills courses, a small number of missing values could result in a low item response rate.

Table 6-1.—Item response rates for items on the Parent Interview public use data file

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
CDOBYY	PA1-YEAR OF BIRTH	24,600	100.00%	0.00%
CDOBMM	PA1-MONTH OF BIRTH	24,600	100.00%	0.00%
ENROLL	PB1-CHILD ENROLLED/ATTENDING SCHOOL	21,222	100.00%	0.00%
GRADE	PB6-GRADE/YR CHILD IS ATTENDING	19,347	100.00%	0.00%
HSAGE	PC6-HOME SCH/CHILD NOT OLD ENOUGH	285	100.00%	0.00%
HSBEHAV	PC6-HOME SCH/STUDENT BEHAVIORAL PROBLEMS	285	100.00%	0.00%
HSBETTER	PC6-HOME SCH/BETTER EDUCATION	285	100.00%	0.00%
HSCAREER	PC6-HOME SCH/PARENT'S CAREER	285	100.00%	0.00%
HSCHAR	PC6-HOME SCH/TO DEVELOP CHARACTER/MORALITY	285	100.00%	0.00%
HSCHALNG	PC6-HOMESCH/NO CHALLENGE FOR CHILD AT SCHOOL	285	100.00%	0.00%
HSCSTHN	PH12OV-NUMBER CHILDREN AMOUNT IS FOR	3	100.00%	0.00%
HSDESIRE	PC6-HOME SCH/CLDNT GET INTO DESIRED SCHOOL	285	100.00%	0.00%
HSDISABL	PC6-HOME/SCH/CHILD HAS SPEC NEED/DISABIL	285	100.00%	0.00%
HSENVIRN	PC6-HOME SCH/POOR LEARN ENVIR SCHOOL	285	100.00%	0.00%
HSFAMLY	PC6-HOME SCH/FAMILY REASONS	285	100.00%	0.00%
HSILL	PC6-HOME SCH/CHILD HAS TEMP ILLNESS	285	100.00%	0.00%
HSOBJECT	PC6-HOME SCH/OBJECT TO WHAT SCH TEACHES	285	100.00%	0.00%
HSOTHER	PC6-HOME SCH/OTHER REASONS	285	100.00%	0.00%
HSPRIVAT	PC6-HOME SCH/CANT AFFORD PRIVATE SCH	285	100.00%	0.00%
HSRELIGN	PC6-HOME SCH/RELIGIOUS REASONS	285	100.00%	0.00%
HSSCPROB	PC6-HOME SCH/OTH PROB WITH PUBL/PRIV SCH	285	100.00%	0.00%
HSTRAN	PC6-HOME SCH/TRANSPORT/DIST/CONVENIENCE	285	100.00%	0.00%
NCHRSAF	PO9-# HRS/WK NONREG CARE AFTER SCH	78	100.00%	0.00%
SCHRSAF	PQ11OV-# HRS/WK SELF CARE AFT SCH	24	100.00%	0.00%
SCHRSBF	PQ11-NUMBER HRS/WK SELF CARE BEF SCH	24	100.00%	0.00%
CBORNUS	PA5-CHILD'S BIRTH COUNTRY	24,600	99.99%	100.00%
CSPEAK	PA6-LANG CHILD SPEAKS MOST AT HOME	22,387	99.99%	100.00%
HOMESCHL	PB2-CHILD BEING SCHOOLED AT HOME	17,999	99.99%	100.00%
RESPSEX	PARENT RESPONDENT'S SEX	24,600	99.99%	100.00%
SEX	SEX	24,600	99.98%	100.00%
HAPRETND	PE7-CHILD LOOKS AT STORY BK/PRETNDS READ	3,366	99.97%	0.00%
RESRELN	PARENT R'S RELATIONSHIP TO CHILD	24,600	99.97%	100.00%
CPNNOW	PI1-CHILD ATTENDS CENTER BASED PROGRAM	6,939	99.96%	0.00%
FOZOO	PS4D-VISITED ZOO/AQUARIUM IN PAST MO	12,075	99.95%	0.00%
FOERAND	PS3E-TOOK CHILD ON ERRANDS IN PAST WK	5,041	99.94%	0.00%
HNDOCWHN	PT2-LST TIME CHILD SAW DOCTOR	6,939	99.94%	0.00%
FOCHORE	PS3F-INVOLVED CHILD W/CHORES IN PAST WK	12,075	99.93%	0.00%
HDBLNDIM	PT5F_PT6B-CHILD HAS BLINDNESS/VISUAL PRO	24,600	99.93%	0.00%
HDRETARD	PT5B-CHILD IS MENTALLY RETARDED	21,222	99.93%	0.00%
FOERANDN	PS3E-# TIMES TOOK ON ERRANDS IN PAST WK	4,746	99.92%	0.00%
HASTORY	PE5-CHILD CAN READ STORY BOOKS	3,561	99.92%	0.00%
RCNOW	PF1_PN1-RECEIVES CARE FROM A RELATIVE	19,335	99.92%	0.00%
HDSPEECH	PT5C-CHILD HAS SPEECH IMPAIRMENT	21,222	99.91%	0.00%
DADTYPE	SPECIFIC RELATIONSHIP OF FATHER TO CHILD	18,203	99.90%	100.00%
SFVISITS	PJ2B-HAD MORE THAN ONE HOME VISIT	6,939	99.90%	57.14%
CPSNOW	PP1-ATTENDS CENTER BASED PROGRAM	12,396	99.89%	0.00%

Table 6-1.—Item response rates for items on the Parent Interview public use data file—Continued

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
HDORTHO	PT5G_PT6C-CHILD HAS ORTHOPEDIC IMPAIRMENT	24,600	99.89%	0.00%
SEBEHAVR	PL3-TCHRS CONTACT FAM RE BEH PRBLMS	17,400	99.89%	0.00%
FOCHOREN	PS3F-INVOLVED CHILD W/CHORES IN PAST WK	11,206	99.88%	0.00%
FOCONCRT	PS4B-WENT TO PLAY/CNCRT/SHOW IN PAST MO	12,075	99.88%	0.00%
FOMUSEUM	PS4C-VISIT ART GALLERY/MUSEUM IN PAST MO	12,075	99.88%	0.00%
FOMUSIC	PS3C-TAUGHT CHILD SONGS/MUSIC IN PAST WK	5,041	99.88%	0.00%
HDDEAFIM	PT5E_PT6A-CHILD HAS DEAFNESS/HEARING PRO	24,600	99.88%	0.00%
HDDEVEL	PT6D-CHILD HAS SEVERE DEVEL DELAY	3,378	99.88%	0.00%
HDOTHER	PT5H_PT6E-CHILD HAS OTHR HLTH PROB 6 MO+	24,600	99.88%	0.00%
NCNOW	PG1_P01-RECEIVES CARE FROM A NONRELATIVE	19,335	99.88%	0.00%
SFSUPCTR	PJ2A-GONE TO FAMILY SUPPORT CENTER	6,939	99.88%	50.00%
MOMTYPE	SPECIFIC RELATIONSHIP OF MOTHER TO CHILD	23,046	99.87%	100.00%
SFATTCLS	PJ1B-ATTENDED PARENTING CLASS	6,939	99.87%	55.56%
DPCOUNT	PE3-HOW HIGH CHILD CAN COUNT	3,561	99.86%	0.00%
FOMUSICN	PS3C-# TIMES TAUGHT SONGS/MUSIC PAST WK	3,691	99.86%	0.00%
ACTVTES	PQ1-PRNTS ARRANGE AFT SCH ACTIVITIES	12,396	99.85%	0.00%
FOGROUP	PS4F-WENT TO COMMTY EVENT IN PAST MO	12,075	99.85%	0.00%
FSSPORT	PM1C-HH ADULT ATTENDED CLASS EVENT	19,581	99.85%	0.00%
SESCHLWR	PL4-TCHRS CONTACT FAM RE SCH WORK PRBLMS	17,400	99.85%	0.00%
FSMEETNG	PM1A-HH ADLT ATTNDED GENERAL SCHOOL MTG	19,581	99.84%	0.00%
FSVOLNTR	PM1D-HH ADULT VOLUNTEERED AT SCHOOL	19,581	99.84%	0.00%
SCSELF	PQ6-CHILD CARES FOR SELF ON REG BASIS	12,396	99.84%	0.00%
FOREADTO	PS1-# TIMES READ TO CHILD PAST WK	12,672	99.83%	0.00%
HDDELAY	PT1-CHILD DEVELOPMENTALLY DELAYED	6,939	99.83%	0.00%
SFATTGRP	PJ1A-ATTENDED SUPPORT GRP FOR PRNTS	6,939	99.83%	41.67%
SCHOICE	PD2-SCHOOL ASSIGNED OR CHOSEN	15,290	99.81%	0.00%
DPCOLOR	PE1-CHILD CAN IDENTIFY COLORS	3,561	99.80%	0.00%
SPUBLIC	PD1-CHILD ATTNDS PUBL/PRIV SCHOOL	17,400	99.80%	0.00%
CPWEEK	PI6_PP7-PRGRM REG SCHED ONCE/WEEK	4,703	99.79%	0.00%
HDDISTRB	PT5D-CHILD HAS EMOTIONAL DISTURBANCE	21,222	99.79%	0.00%
HSWEEK	PH4-HEAD START REG SCHED ONCE/WEEK	478	99.79%	0.00%
SCWEEK	PQ8-CHILD CARE FOR SELF AT LEAST ONCE/WK	1,445	99.79%	0.00%
FOLIBRAY	PS4A-VISITED LIBRARY W/CHILD IN PAST MO	12,075	99.78%	0.00%
FOWORDS	PS3B-TAUGHT LTRS/WRDS/NMBRS IN PAST WK	5,041	99.78%	0.00%
FSATCNFN	PM1B-HH ADULT ATTENDED MTG W/TEACHER	19,581	99.78%	0.00%
HNDNTIST	PT3-CHILD HAS SEEN DENTIST	3,561	99.78%	0.00%
NCBFAFT	PO4-NONREL CARE BEFORE/AFTER SCHOOL	921	99.78%	0.00%
RCBFAFT	PN5-REL CARE BEFORE/AFTER SCHOOL	2,495	99.76%	0.00%
ACTWEEK	PQ2-AFT SCH ACTVTES AT LEAST ONCE/WK	1,978	99.75%	0.00%
CPMORE	PI2_PP2-NUMBER CTR BSD ARRANGEMNTS	4,703	99.74%	0.00%
SEREPEAT	PL5-CHILD HAS REPEATED A GRADE	17,400	99.74%	0.00%
CPWORK	PI5/PP5-PROGRAM LOCATED AT PRNT WORKPLAC	4,512	99.73%	0.00%
HNDNTWHN	PT4-LAST TIME CHILD SAW DENTIST	2,248	99.73%	0.00%
MOMSPEAK	PU3-LANGUAGE SPOKEN MOST AT HOME BY MOM	23,650	99.73%	100.00%
ATNDKIND	PC1-CHILD ATTENDED KINDERGARTEN	2,857	99.72%	0.00%
CPPLACE	PI4_PP3-LOCATION OF CTR BSD PRGRM	4,703	99.72%	0.00%
DADSPEAK	PV2-LANGUAGE SPOKEN MOST AT HOME BY DAD	18,314	99.71%	100.00%

Table 6-1.—Item response rates for items on the Parent Interview public use data file—Continued

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
FSVOLNTP	PM1D2-WHO VOLUNTEERED AT SCHOOL	5,923	99.71%	0.00%
MOMBORN	PU4-COUNTRY MOM WAS BORN IN	23,650	99.71%	100.00%
NCWEEK	PG4_PO5-NON-REL CARE REG SCHED ONCE/WEEK	2,066	99.71%	0.00%
CPBFAFT	PP6-ATTENDS PROGRAM BEF/AFT SCH OR BOTH	2,351	99.70%	0.00%
HSNOW	PH1-CHILD ATTENDS HEAD START	6,939	99.70%	0.00%
DADWORK	PV6-DAD WORKED FOR PAY LAST WEEK	18,314	99.69%	0.00%
FOWORDSN	PS3B-TAUGHT LTRS/WRDS/NMBRS IN PAST WK	4,564	99.69%	0.00%
FSSPORTP	PM1C2-WHO ATTENDED CLASS EVENT	9,315	99.69%	0.00%
MOMLEAVE	PU8-MOM ON LEAVE OR VACATION LAST WEEK	7,702	99.69%	0.00%
FSMEETNP	PM1A2-WHO ATTNDED GENERAL SCHOOL MTG	11,143	99.68%	0.00%
CPFEE	PI12_PP12-ANY FEE FOR CTR BSD PRGRM	4,600	99.67%	0.00%
MOMWORK	PU7-MOM WORKED FOR PAY LAST WEEK	23,650	99.67%	0.00%
DADBORN	PV3-COUNTRY DAD WAS BORN IN	18,314	99.66%	100.00%
DPLETTER	PE2-CHILD RECOGNIZES LETTERS	3,561	99.66%	0.00%
NCMORE	PG2_PO2-# OTH NONREL CARE ARRANGEMNTS	2,066	99.66%	0.00%
RCPLACE	PF4_PN4-LOCATION OF REL CARE	4,136	99.66%	0.00%
SESUSEXP	PL7-CHILD EVER SUSPENDED/EXPELLED	9,013	99.66%	0.00%
HOTHNUM	PW2-OTHER TELEPHONE NUMBER IN HH	24,600	99.65%	0.00%
MOMLANG	PU2-FIRST LANGUAGE SPOKEN BY MOM	23,650	99.65%	100.00%
PREKEVR	PC4-PRIOR TO K CHILD ATTEND PRESCHOOL	4,330	99.65%	0.00%
HFOODST	PW5B-FAMILY RECD FOOD STMPS PAST 12 MO	24,600	99.64%	0.00%
RCWEEK	PF5_PN6-REL CARE REG SCHED ONCE/WK	4,136	99.64%	0.00%
HDLEARN	PT5A-CHILD HAS SPECIFIC LRNING DISBLTY	21,222	99.63%	0.00%
HWIC	PW5A-FAMILY RECD WIC PAST 12 MO	24,600	99.63%	0.00%
CPPLACK	PP4-PRGRM AT SAME PLACE ATTENDS K/GRADE	1,561	99.62%	0.00%
NTYPE	PI3-PRGRM WHERE CHILD SPENDS MOST TIME	2,352	99.62%	0.00%
RCADLTS	PF10-NUMBER ADULTS GIVING REL CARE	1,535	99.61%	0.00%
DADLANG	PV1-FIRST LANGUAGE SPOKEN BY DAD	18,314	99.60%	100.00%
HDSOURCE	PT7C_PT10D-RECEIVES OTHER SRVCS	4,064	99.58%	0.00%
HSDAYS	PH5-NUMBER DAYS/WEEK ATTENDS HEAD START	467	99.57%	0.00%
SRELGON	PD4-CHILD ATTNDS CHURCH RELATED SCHOOL	2,110	99.57%	0.00%
FSCFNP	PM1B2-WHO ATTENDED MTG W/TEACHER	9,774	99.56%	0.00%
HDDOCTOR	PT7B_PT10C-RECEIVES SRVCS OF DR/CLINIC	4,064	99.56%	0.00%
NCPLACE	PG3_PO3-LOCATION OF NONREL CARE	2,066	99.56%	0.00%
HNUMUSE	PW3-HOW MANY OTH PHN NUM FOR HH USE	5,826	99.55%	0.00%
HAFDC	PW5C-FAMILY RECD TANF/AFDC PAST 12 MO	24,600	99.54%	0.00%
HDSCHL	PT10A-RECEIVES SERVICES FROM SCHL DIST	3,933	99.54%	0.00%
CHISPAN	PA4-CHILD IS OF HISPANIC ORIG	24,600	99.53%	100.00%
DADAGE	FATHER'S AGE	18,203	99.53%	100.00%
MOMLOOK	PU11-MOM LOOKING FOR WORK PAST 4 WEEKS	7,170	99.53%	0.00%
CPDAYS	PI7_PP8-DAYS/WK ATTENDS CTR BSD PROGRAM	4,600	99.52%	0.00%
DPNAME	PE4-CHILD CAN WRITE FIRST NAME	3,561	99.52%	0.00%
FCSCHOOL	PK1A-SATISFIED WITH CHILD'S SCHOOL	17,400	99.52%	0.00%
HOWNHOME	PW1-OWN, RENT HOME/OTHR ARRNGMNT	24,600	99.52%	0.00%
SEGRADES	PL1-CHILD'S GRADES ACROSS ALL SUBJECTS	17,400	99.52%	0.00%
CRACE	PA3-CHILD'S RACE	24,600	99.50%	100.00%
HAWORDS	PE6-CHILD ACTUALLY READS THE WORDS	195	99.49%	0.00%

Table 6-1.—Item response rates for items on the Parent Interview public use data file—Continued

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
SCATHLIC	PD5-CHILD ATTNDS CATHOLIC SCHOOL	1,541	99.48%	0.00%
SCBFAFT	PQ7-CHILD CARE FOR SELF BEF/AFT SCH/BOTH	1,445	99.45%	0.00%
SCPARHM	PQ12-PRNT HOME WHN CHILD GETS HOME/SCH	5,531	99.44%	0.00%
CMOVEAGE	PA5OV-AGE WHEN CHILD MOVED TO US	1,039	99.42%	100.00%
NCFEE	PG10_PO10-ANY FEE FOR NONREL CARE	1,996	99.40%	0.00%
HSPLACE	PH2-LOCATION OF HEAD START PROGRAM	478	99.37%	0.00%
RCMORE	PF2_PN2-# REL CARE ARRANGEMNTS	4,136	99.37%	0.00%
FOETHNIC	PS4E-TOLD CHILD FAM HISTORY IN PAST MO	12,075	99.36%	0.00%
HSFEE	PH10-ANY FEE FOR HEAD START PROGRAM	467	99.36%	0.00%
NCDAYS	PG5_PO6-# DAYS/WEEK RECEIVES NONREL CARE	1,996	99.35%	0.00%
RCKIDS	PF9-NUMBER CHILDREN CARED FOR BY REL	1,535	99.35%	0.00%
RCTYPE	PF3_PN3-REL WHO CARES FOR CHILD	4,136	99.35%	0.00%
HOMEALL	PB4-FULL OR PARTIAL HOME SCH	301	99.34%	100.00%
FSSPPERF	PM3A-SCH TELL FAM HOW CHILD DOING IN SCH	19,581	99.31%	0.00%
MOMACTY	PU13-MOM'S ACTIVITY MOST OF LAST WEEK	6,364	99.29%	0.00%
RESPAGE	PARENT RESPONDENT'S AGE	24,600	99.28%	100.00%
GRADEEQ	PB7-GRADE EQUIV/HOME SCH/SP ED/UNGRD	394	99.24%	100.00%
MOMAGE	MOTHER'S AGE	23,046	99.24%	100.00%
ACTDAYS	PQ3-# DYS/WK CHLD PARTIC AFT SCH ACTVT	1,815	99.23%	0.00%
MOMGRADE	PU5-HIGHEST GRADE/YR OF SCH MOM COMPLETD	23,650	99.22%	100.00%
MOMDIPL	PU6-MOM HAS HS DIPLOMA OR GED	11,078	99.19%	100.00%
FOSTORY	PS3A-TOLD CHILD STORY IN PAST WK	12,075	99.17%	0.00%
HEADEVR	PC3-PRIOR TO K CHILD ATTEND HD START	4,330	99.17%	0.00%
DADLOOK	PV9-DAD LOOKING FOR WORK PAST 4 WEEKS	837	99.16%	0.00%
SESUSIN	PL8A-CHILD WAS SUSPENDED	1,637	99.14%	0.00%
DADACTY	PV11-DADS ACTIVITY MOST OF LAST WK	787	99.11%	0.00%
NCADLTS	PG9-NUMBER ADULTS GIVING NONREL CARE	1,108	99.10%	40.00%
CPHRS	PI8_PP9-HRS/WK ATTENDS CTR BSD PROGRAM	4,427	99.07%	0.00%
MOMNEW	PU1-MOM'S AGE WHEN FIRST BECAME A MOTHER	23,650	98.99%	6.72%
FOSTORYN	PS3A-# TIMES TOLD CHILD STORY IN PAST WK	8,848	98.98%	0.00%
RCDAYS	PF6_PN7-DAYS/WEEK RECEIVES REL CARE	3,929	98.98%	0.00%
HDGOVT	PT7A_PT10B-RECEIVES ST/LOCL/SOCL SRVCS	4,064	98.97%	0.00%
DADLEAVE	PV7-DAD ON LEAVE OR VACATION LAST WEEK	1,155	98.96%	0.00%
NCHRS	PG6_PO7-# HRS/WK NONREL CARE	1,918	98.96%	0.00%
FORDDAY	PS2-MINS READ TO CHILD PAST WK	11,741	98.91%	0.00%
FCTEACHR	PK1B-SATISFIED WITH CHILD'S TEACHERS	17,400	98.89%	0.00%
MOMMTHS	PU10-MONTHS MOM WORKED IN PAST YEAR	23,650	98.89%	0.76%
CPADLTS	PI11-# ADULTS IN SAME GRP AT PRGM	2,335	98.84%	0.00%
COTHRACE	PA3OV-CHILD IS HISP/MIXED RACE	3,755	98.75%	100.00%
HSWORK	PH3-HEAD START LOCATED AT WORKPLACE	463	98.70%	0.00%
RCFEE	PF11_PN11-ANY FEE FOR REL CARE	3,929	98.70%	0.00%
FSSPVOLN	PM3C-SCH TELLS ABT CHANCES TO VOLUNTEER	19,581	98.67%	0.00%
MOMHOURS	PU9-HOURS PER WEEK MOM WORKS FOR PAY	16,296	98.67%	0.00%
SDISRCT	PD3-SCHOOL IN ASSIGNED SCH DISTRICT	2,296	98.65%	9.68%
SEINOUT	PL9-IN-SCH OR OUT-SCH SUSPENSION	1,610	98.63%	0.00%
FSFREQ	PM2-HOW OFTN WENT TO SCH MTGS/EVENTS	19,581	98.62%	0.00%
HSTECHR	PC9-CHILD'S HM INSTR BY PUB SCH TCHR	285	98.60%	0.00%

Table 6-1.—Item response rates for items on the Parent Interview public use data file—Continued

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
FCSTDS	PK1C-SATISFIED W/SCH ACADEMIC STANDARDS	17,400	98.58%	0.00%
FCORDER	PK1D-SATISFIED W/SCH ORDER & DISCIPLINE	17,400	98.56%	0.00%
ACTHRS	PQ4-# HRS/WK CHLD PARTIC AFT SCH ACTVT	1,815	98.51%	0.00%
HDAFFECT	PT9-DISABILITY AFFECTS ABILITY TO LEARN	3,933	98.50%	0.00%
SEEXPEL	PL8B-CHILD WAS EXPELLED	1,637	98.47%	0.00%
DADHOURS	PV8-HOURS PER WEEK DAD WORKS FOR PAY	17,250	98.38%	0.00%
DADGRADE	PV4-HIGHEST GRADE/YR OF SCH DAD COMPLETE	18,314	98.28%	100.00%
SCDAYS	PQ9-NUMBER DAYS/WK CHILD CARES FOR SELF	1,392	98.28%	0.00%
SHIGH	PD7-HIGHEST GRADE AT CHILD'S SCHOOL	17,400	98.28%	0.00%
MOMANSAD	PU12-MOM PLACED/ANSWERD ADS/SENT RESUME	1,177	98.22%	0.00%
MOMEMPL	PU12-MOM CHECKED W/EMPLOYER DIRECTLY	1,177	98.22%	0.00%
MOMOTHER	PU12-MOM DID SOMETHING ELSE TO FIND WORK	1,177	98.22%	0.00%
MOMPRIV	PU12-MOM CHECKED PRIVATE EMPLOY AGENCY	1,177	98.22%	0.00%
MOMPUBL	PU12-MOM CHECKED PUBLIC EMPLOY AGENCY	1,177	98.22%	0.00%
MOMREAD	PU12-MOM READ WANT ADS	1,177	98.22%	0.00%
MOMREL	PU12-MOM CHECKED W/FRIENDS/RELATIVES	1,177	98.22%	0.00%
DADDIPL	PV5-DAD HAS HS DIPLOMA/GED	7,319	98.18%	100.00%
SLOW	PD6-LOWEST GRADE AT CHILD'S SCHOOL	17,400	98.14%	0.00%
FSSPCDEV	PM3B-SCH HELPS FAM UNDERSTAND CHLD DEV	19,581	98.12%	0.00%
MOMGRAD2	PU5-ACTUAL GRADE 9-11 MOM COMPLETED	1,891	98.10%	100.00%
SEGRADEQ	PL2-RATING OF CHILD'S SCHOOL WORK	3,998	97.92%	0.00%
FSSPHOME	PM3D-SCH ADVISES ABT HOME LEARNING	19,581	97.82%	0.00%
HACONECT	PE8-PRTND READ SOUNDS LIKE CONNCTD STORY	3,368	97.80%	0.00%
NCKIDS	PG8-# CHILDREN CARED FOR BY NONREL	1,108	97.65%	0.00%
PSNOTREA	PR20-RSN CHILD WILL NOT ATTND SCH AFT HS	590	97.63%	0.00%
MOMGRAD1	PU5-ACTUAL GRADE 0-8 MOM COMPLETED	1,115	97.49%	100.00%
SEREPTK	PL6-CHILD REPEATED KINDERGARTEN	1,732	97.40%	4.44%
SEREPT1	PL6-CHILD REPEATED 1ST GRADE	1,694	97.34%	4.44%
SEREPT2	PL6-CHILD REPEATED 2ND GRADE	1,616	97.34%	4.65%
SEREPT3	PL6-CHILD REPEATED 3RD GRADE	1,511	97.29%	4.88%
HNIFSP	PT8-RECEIVES SERVICES THRU IFSP	108	97.22%	0.00%
HSADLTS	PH9-NUMBER ADULTS IN SAME GRP AT HEAD ST	467	97.22%	0.00%
SCHRS	PQ10-NUMBER HRS/WK CHILD CARES FOR SELF	1,368	97.22%	0.00%
RCHRS	PF7_PN8-HOURS/WEEK RECEIVES REL CARE	3,728	97.10%	0.00%
CPKIDS	PI10-# CHILDREN SAME GRP AT CTR BSD PRGM	2,335	97.09%	0.00%
SEREPT4	PL6-CHILD REPEATED 4TH GRADE	1,408	97.09%	4.88%
SEREPT5	PL6-CHILD REPEATED 5TH GRADE	1,299	97.00%	5.13%
SEREPT6	PL6-CHILD REPEATED 6TH GRADE	1,195	96.90%	5.41%
SEREPT8	PL6-CHILD REPEATED 8TH GRADE	908	96.81%	6.90%
SEREPT7	PL6-CHILD REPEATED 7TH GRADE	1,066	96.72%	5.71%
FSSPSERV	PM3E-SCH GIVES INFO ABT COMM SERVICES	19,581	96.64%	0.00%
SEREPT10	PL6-CHILD REPEATED 10TH GRADE	528	96.59%	11.11%
DADANSAD	PV10-DAD PLACED/ANSWERD ADS/SENT RESUME	320	96.56%	0.00%
DADEMPL	PV10-DAD CHECKED W/EMPLOYER DIRECTLY	320	96.56%	0.00%
DADOTHER	PV10-DAD DID SOMETHING ELSE TO FIND WORK	320	96.56%	0.00%
DADPRIV	PV10-DAD CHECKED PRIVATE EMPLOY AGENCY	320	96.56%	0.00%
DADPUBL	PV10-DAD CHECKED PUBLIC EMPLOY AGENCY	320	96.56%	0.00%

Table 6-1.—Item response rates for items on the Parent Interview public use data file—Continued

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
DADREAD	PV10-DAD READ WANT ADS	320	96.56%	0.00%
DADREL	PV10-DAD CHECKED W/FRIENDS/RELATIVES	320	96.56%	0.00%
MOMUSAGE	PU4OV-AGE WHEN MOM MOVED TO US	4,042	96.54%	0.00%
SEREPT11	PL6-CHILD REPEATED 11TH GRADE	350	96.29%	15.38%
SEREPT9	PL6-CHILD REPEATED 9TH GRADE	734	96.19%	7.14%
HOMEKIND	PC2-HOME SCHOOL KINDERGARTEN	26	96.15%	0.00%
NCHRSBF	PO8-# HRS/WK NONREL CARE BEFORE SCH	78	96.15%	0.00%
SEREPT12	PL6-CHILD REPEATED 12TH GRADE	164	95.73%	28.57%
PSREQ	PR19-TALK W/COUNSLR ABT COLL ACAD REQ	8,439	95.43%	0.00%
SEAFTRHS	PR1A-CHILD WILL ATTEND SCHOOL AFTER HS	9,147	95.38%	0.00%
PSFINAID	PR15-TALKED ABT FINANCIAL AID W/SOMEONE	8,557	95.28%	0.00%
PSHOPE	PR16B-HEARD OF HOPE SCHOLARSHIP TAX CRD	8,557	95.13%	0.00%
PSAVMON	PR14-SAVING MONEY TO PAY FOR CHILD'S ED	8,557	95.07%	0.00%
CPHRSAF	PP10OV-# HRS AT CTR BSD PROGRAM AFT SCH	180	95.00%	0.00%
HOMEPREK	PC5-HOME SCHOOL PRESCHOOL	20	95.00%	0.00%
PSLIFE	PR16A-HEARD OF LIFETIME LEARNING TAX CRD	8,557	94.97%	0.00%
DADGRAD1	PV4-ACTUAL GRADE 0-8 DAD COMPLETED	859	94.18%	100.00%
HINCMRNG	PW6-TOTAL HH INCOME RANGE	24,600	93.87%	0.00%
CPCOST	PI13_PP13-AMT HH PAYS FOR CTR BSD PRGRM	3,441	93.72%	6.02%
DADGRAD2	PV4-ACTUAL GRADE 9-11 DAD COMPLETED	1,266	93.60%	100.00%
FSHADCN	PM1OV-SCHOOL HAD TCHR MTG THIS SCH YR	5,574	93.47%	0.00%
CPHRSBF	PP10-# HRS AT CTR BSD PROGRAM BEF SCH	180	92.78%	0.00%
DADUSAGE	PV3OV-AGE WHEN DAD MOVED TO US	3,192	92.01%	0.00%
HSKIDS	PH8-NUMBER CHILDREN SAME GRP HEAD STRT	467	91.86%	0.00%
PS2YRTUI	PR13-CAN EST TUITION AT 2YR COMM COLL	231	91.77%	0.00%
HSCOST	PH11-AMT HH PAYS FOR HEAD START	143	91.61%	16.67%
RCHRSBF	PN9-# OF HRS REL CARE BEFORE SCHOOL	201	91.54%	0.00%
PSOTHTYP	PR9-CHLD LIKELY ATTND VOC/TCH/CMM/JR COL	2,175	91.45%	0.00%
CPUNIT	PI13_PP13-TIME UNIT FOR CTR BSD PRGM CST	3,441	91.25%	1.33%
PSOTHTUI	PR10-GOT INFO TUITION VOC/TECH/COMM SCH	1,944	91.20%	0.00%
RCHRSAF	PN9OV-# OF HRS REL CARE AFTER SCHOOL	201	91.04%	0.00%
SNUMSTUD	PD8-NUMBER OF STDTS AT CHILD'S SCHOOL	17,400	90.99%	0.00%
PSOESTUI	PR12-CAN EST TUITION VOC/TECH/COMM SCH	1,181	90.94%	0.00%
NCCOST	PG11_PO11-AMT HH PAYS FOR NONREL CARE	1,707	90.80%	0.64%
RCCOST	PF12_PN12-AMT HH PAYS FOR REL CARE	834	90.41%	3.75%
FSHADMEE	PM1OV-SCHOOL HAD GEN MTG THIS SCH YR	4,045	90.38%	0.00%
RCCSTHN	PF13OV/PN13OV-# CHILDREN AMOUNT IS FOR	268	89.93%	0.00%
SECOLLEG	PR1B-CHILD WILL GRAD FRM 4YR COLLEGE	8,557	89.88%	0.00%
RCCSTHH	PF13_PN13-COST OF REL CARE CHILD/OTHRS	564	89.72%	0.00%
NCUNIT	PG11-PO11-TIME UNIT FOR NONREL CARE CST	1,707	89.51%	0.00%
HINCOME	PW6-TOTAL HH INCOME	24,600	89.39%	0.00%
HSACTVSU	PC7OVG-USED PUB SCH SPPRT-PARTIC SPT/ACT	101	89.11%	0.00%
PS4YRAMT	PR8OV1-TUITION EST OF IN-STATE 4YR COLL	1,037	88.91%	0.00%
CPCSTHH	PI14_PP14-COST CTR BSD PRGM CHILD/OTHRS	2,265	88.74%	0.00%
NCCSTHN	PG12OV_PO12OV-# CHILDREN AMOUNT IS FOR	447	88.59%	0.00%
NCCSTHH	PG12_PO12-NONREL CST CHILD ONLY/OTHRS	1,150	88.35%	0.00%
HOMSCHR	PB5-HRS/WK HOME SCH CHILD IN SCHOOL	67	88.06%	100.00%

Table 6-1.—Item response rates for items on the Parent Interview public use data file—Continued

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
PSSTART	PR2-CHLD WILL START COLL AT 2 OR 4YR SCH	7,743	87.94%	0.00%
PS4YRTUI	PR8-CAN EST TUITION IN-STATE 4YR COLL	3,208	87.72%	0.00%
HSACTVS	PC7G-PUB SCH SPPRT-SPRTS/ACTVT FOR CHILD	285	87.02%	0.00%
PSOESAMT	PR12OV1-EST TUITION/FEES VOC/TECH SCH	345	86.96%	0.00%
FSDECIS	PM4-SCH PUTS PARENTS ON COMMITTEES	19,581	85.50%	0.00%
CPCSTHN	PI14OV_PP14OV-# CHILDREN AMOUNT IS FOR	170	84.71%	0.00%
RCUNIT	PF12_PN12-UNIT OF TIME FOR REL CARE COST	834	84.65%	0.00%
PSCOLTYE	PR3-CHILD LIKELY ATTND PUB/PRIV 4YR COLL	4,329	84.38%	0.00%
HSCSTHH	PH12-COST HEAD START CHILD ONLY/OTHERS	82	84.15%	0.00%
HSUNIT	PH11-UNIT OF TIME FOR HEAD START COST	143	83.22%	0.00%
PSCOLTUI	PR5-GOT INFO ABT TUITION FOR SPECFC COLL	3,174	83.14%	0.00%
PS4YRINC	PR8OV2-EST INCLUDES TUITION/OTHER FEES	1,037	83.12%	0.00%
PSCESAMT	PR7OV1-EST OF TUITION/FEES AT 4YR COLL	670	82.84%	4.35%
SNUMGRAD	PD8OV-NUMBER OF STDTS IN CHLD'S GRADE	524	82.63%	1.10%
PSCOLST	PR4-CHLD LIKELY ATTEND IN/OUT STATE COLL	2,490	82.29%	0.00%
HSSTPLC	PC7E-PUB SCH SPPRT-PLACE HM STDTS MEET	285	82.11%	0.00%
PSCESTUI	PR7-CAN ESTIMATE TUITION/FEES 4YR COLL	1,419	82.03%	0.00%
PSOESINC	PR12OV2-EST INCLUDES TUITION/OTHER FEES	345	81.45%	0.00%
HSPAPLC	PC7C-PUB SCH SPPRT-PRNT PLACE INFO/MEET	285	81.40%	0.00%
HSSTPLCU	PC7OVE-USED PUB SCH SPPRT-PLACE FOR STDT	53	81.13%	0.00%
HSMATLSU	PC7OVB-USED PUB SCH SPPRT-BOOKS/MATLS	95	80.00%	0.00%
HSPAPLCU	PC7OVC-USED PUB SCH SPPRT-PLCE FOR PRNTS	65	80.00%	0.00%
PS2YRAMT	PR13OV1-EST TUITION/FEES 2YR COMM COLL	54	79.63%	0.00%
PSCESINC	PR7OV2-EST INCLUDES TUITION/OTHER FEES	670	78.96%	0.00%
HSMATLS	PC7B-PUB SCH SPPRT-OFFER BOOK/MATLS	285	77.89%	0.00%
HSCURRU	PC7OVA-USED PUB SCH SPPRT-CURRICULA	90	76.67%	0.00%
HSCURR	PC7A-PUB SCH SPPRT-DETAILED CURRIC	285	74.74%	0.00%
PSCOLAMT	PR6-COST OF TUITION AT SPCFC 4 YR COL	1,755	71.00%	2.16%
PSHOPUS	PR18-USE HOPE SCHOLARSHIP TAX CREDIT	1,100	70.36%	0.31%
PSLIFUS	PR17-USE LIFETIME LEARNING TAX CREDIT	936	70.09%	0.00%
HSATTND	PC8-PUB SCH OFFER CHLD CHNC ATTND CLASS	222	69.82%	0.00%
HSSTWEB	PC7F-PUB SCH SPPRT-WEB SITE HM SCH STDTS	285	69.47%	0.00%
PSCOLINC	PR6OV-EST INCLUDES TUITION/OTH FEES	1,755	68.66%	0.00%
PS2YRINC	PR13OV2-EST INCLUDES TUITION/OTHER FEES	54	66.67%	0.00%
HSPAWEBU	PC7OVD-USED PUB SCH SPPRT-WEB SITE PRNTS	35	65.71%	0.00%
HSPAWEB	PC7D-PUB SCH SPPRT-WEB SITE HM SCH PRNTS	285	65.26%	0.00%
PSOTHAMT	PR11-TUITION AT SPEC VOC/TECH/COMM SCH	763	64.88%	0.00%
HINCMEXT	PW6OV-EXACT HH INC NEAREST $1,000	4,599	62.97%	0.53%
PSOTHINC	PR11OV-EST INCLUDES TUITION/OTHER FEES	763	60.42%	0.00%
HSSTWEBU	PC7OVF-USED PUB SCH SPPRT-WEB SITE STDT	27	59.26%	0.00%

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Table 6-2.—Item response rates for items on the Youth Interview public use data file

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
CDOBYY	PA1-YEAR OF BIRTH	7,913	100.00%	0.00%
CDOBMM	PA1-MONTH OF BIRTH	7,913	100.00%	0.00%
ENROLL	PB1-CHILD ENROLLED/ATTENDING SCHOOL	7,913	100.00%	0.00%
GRADE	PB6-GRADE/YR CHLD IS ATTENDING	7,806	100.00%	0.00%
BCODE3	BROAD CATEGORY	206	100.00%	0.00%
SPCODEA3	SPECIFIC CATEGORY	206	100.00%	0.00%
SPCODEB2	SPECIFIC CATEGORY	129	100.00%	0.00%
SPCODEB3	SPECIFIC CATEGORY	43	100.00%	0.00%
SPCODEC2	SPECIFIC CATEGORY	22	100.00%	0.00%
SPCODEC3	SPECIFIC CATEGORY	7	100.00%	0.00%
HOMEALL	PB4-FULL OR PARTIAL HOME SCH	107	100.00%	0.00%
HOMESCHL	PB2-CHILD BEING SCHOOLED AT HOME	7,913	100.00%	0.00%
CBORNUS	PA5-CHILD'S BIRTH CTRY	7,913	99.99%	100.00%
CSPEAK	PA6-LANG CHLD SPEAKS MOST AT HOME	7,913	99.99%	100.00%
PRSCHACT	YC3-PARTICIPATED IN SCH ACTIVITIES	7,806	99.99%	0.00%
SEX	SEX	7,913	99.99%	100.00%
CYWATCHU	YE2-FREQ YOUTH WATCH/LSTN NATL NEWS	7,913	99.97%	0.00%
PRGRPACT	YC4-PARTICIPATED OUT-OF-SCH ACTIVITIES	7,913	99.97%	0.00%
FEZOO	YB3C-FAM VISIT ZOO/AQUARIUM PAST MO	7,913	99.96%	0.00%
PRWORK	YC5-WORKS FOR PAY	7,913	99.96%	0.00%
CYRDNEWU	YE1-FREQ YOUTH READS NATL NEWS	7,913	99.95%	0.00%
RESRELN	PARENT R'S RELATIONSHIP TO CHILD	7,913	99.95%	100.00%
HFOODST	PW5B-FAMILY RECD FOOD STMPS PAST 12 MO	7,913	99.92%	0.00%
DADTYPE	SPECIFIC RELATIONSHIP OF FATHER TO CHILD	5,711	99.91%	100.00%
CYSCHLET	YE13A-IN CLASS WROTE LTR TO UNKNOWN PERS	7,913	99.90%	0.00%
FELIBRAY	YB3A-FAM VISIT LIBRARY W/CHLD PAST MO	7,913	99.90%	0.00%
HWIC	PW5A-FAMILY RECD WIC PAST 12 MO	7,913	99.90%	0.00%
PRLOOK	YC7-LOOKED FOR JOB THIS SCH YR	4,180	99.90%	0.00%
FEFAMDEC	YB2A-FAM DISCUSSES DECISIONS W/CHLD	7,913	99.89%	0.00%
CYSCHSPE	YE13B-IN CLASS GAVE SPEECH/ORAL REPRT	7,913	99.86%	0.00%
SANOW1	YD3-PARTICIPATING IN ACTIVITY NOW	4,141	99.86%	50.00%
FERHMWRK	YB1C-RULES ABT DOING HOMEWORK	7,913	99.85%	0.00%
MOMTYPE	SPECIFIC RELATIONSHIP OF MOTHER TO CHILD	7,321	99.85%	100.00%
FEMUSEUM	YB3B-FAM VISIT ART GAL/MUSEUM PAST MO	7,913	99.84%	0.00%
HAFDC	PW5C-FAMILY RECD TANF/AFDC PAST 12 MO	7,913	99.82%	0.00%
HOWNHOME	PW1-OWN, RENT HOME/OTHR ARRNGMNT	7,913	99.82%	0.00%
CYISTALK	YE4-FREQ TALK ABT NATL NEWS W/FAM	7,913	99.81%	0.00%
SACTY	YD1-DOES COMMTY SERVICE ACTY	7,913	99.81%	100.00%
FERBED	YB1A-RULES ABT BEDTIME/SCH NIGHTS	3,532	99.80%	0.00%
SPUBLIC	PD1-CHLD ATTNDS PUBL/PRIV SCH	7,815	99.80%	0.00%
FEENJOY	YA1B-CHLD ENJOYS SCHOOL	7,806	99.78%	0.00%
FERTVPRG	YB1E-RULES ABT TV PRGMS WATCHED	7,913	99.77%	0.00%
FETEADIS	YA1C-TCHRS MAINTAIN DISCIPLINE	7,806	99.77%	0.00%
SCHOICE	PD2-SCH ASSIGNED OR CHOSEN	7,036	99.77%	0.00%
FERULES	YB2C-FAM LETS CHLD HAVE SAY IN RULES	7,913	99.76%	0.00%
FEYRSIDE	YB2B-FAM LISTENS CHLDS SIDE/ARGUMNT	7,913	99.76%	0.00%
SEBEHVOK	YA3-FRNDS THINK IMPORTANT TO BEHAVE	7,806	99.74%	0.00%

Table 6-2.—Item response rates for items on the Youth Interview public use data file—Continued

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
FERTVTIM	YB1D-RULES ABT TV VIEWING TIME	7,913	99.72%	0.00%
CYSCHDEB	YE13C-IN CLASS TOOK PART IN DEBATE	7,913	99.68%	0.00%
CYLETTER	YE6-COULD WRITE LETTER TO GOVT OFCL	4,381	99.66%	0.00%
CYNEWSHH	YE3-WATCH/LSTN NATL NEWS W/FAM PST WK	6,812	99.66%	0.00%
FERSCHNT	YB1B-RULES ABT TIME HOME/SCH NIGHTS	4,381	99.66%	0.00%
SAREG1	YD4-SERVICE ACTIVITY SCHEDULE	4,141	99.61%	43.75%
SRELGON	PD4-CHLD ATTNDS CHURCH RELATED SCH	779	99.61%	0.00%
CHISPAN	PA4-CHILD IS HISPANIC ORIGIN	7,913	99.60%	100.00%
FERESPCT	YA1D-STDTS/TCHRS RESPECT EACH OTHR	7,806	99.60%	0.00%
SAARNG1	YG3-DID SERVICE ON OWN/ORG BY OTHERS	1,516	99.60%	16.67%
CYCRSE	YE10-COURSE REQS ATTN TO GOVT ISSUES	7,913	99.56%	0.00%
FECHALNG	YA1A-CHLD IS CHALLENGED AT SCH	7,806	99.56%	0.00%
SATALK	YD11-TALK IN CLASS/GRP ABT SERV ACTIVITY	4,080	99.56%	0.00%
SEWORKOK	YA2-FRNDS THINK IMPORTANT WRK HARD GRADE	7,806	99.55%	0.00%
CRACE	PA3-CHILD'S RACE	7,913	99.51%	100.00%
SAJOURNL	YD12-REQUIRED TO WRITE ABT SERV ACTY	4,080	99.51%	0.00%
SAPYMT1	YG2-RCV MONEY/GIFTS IN RETURN FOR SERV	1,516	99.47%	12.50%
SCATHLIC	PD5-CHLD ATTNDS CATHOLIC SCH	568	99.47%	0.00%
SANOW2	YD3-PARTICIPATING IN ACTIVITY NOW	1,838	99.46%	80.00%
DADAGE	FATHER'S AGE	5,711	99.42%	100.00%
SAPYMT2	YG2-RCV MONEY/GIFTS IN RETURN FOR SERV	656	99.39%	25.00%
CYMTG	YE7-COULD MAKE STATEMENT AT PUBLIC MTG	4,381	99.38%	0.00%
SAARRYOU	YD7-SCH ARR THIS STDT SERV ACTY	4,080	99.31%	0.00%
CYINTRST	YE12-CLASS INCREASED INT/GOVT ISSUES	5,540	99.30%	0.00%
SAARNG2	YG3-DID SERVICE ON OWN/ORG BY OTHERS	656	99.24%	20.00%
CMOVEAGE	PA5OV-AGE WHEN CHILD MOVED TO US	521	99.23%	100.00%
SAHELP1	YG4-WHO HELPED MOST BY SERV ACTY	1,516	99.21%	8.33%
CYCOMPLI	YE5A-CAN'T UNDERSTAND POLITICS/GOVT	4,381	99.20%	0.00%
FELISTEN	YA1F-STDT OPINIONS COUNT AT SCH	7,806	99.18%	0.00%
SAGRADE	YD13-ACTIVITY FOR A GRADE IN CLASS	4,080	99.17%	0.00%
COTHRACE	PA3OV-CHILD IS HISP/MIXED RACE	1,066	99.16%	100.00%
FEPRIDIS	YA1E-PRINCIPAL MAINTAINS DISCIPLINE	7,806	99.15%	0.00%
CYCRSLST	YE11-LST YR COURSE REQD ATTN TO GOVT ISS	7,913	99.13%	0.00%
SAREG2	YD4-SERVICE ACTIVITY SCHEDULE	1,838	99.13%	75.00%
CYAGNST	YE5C-ALLOW FREEDOM TO SPEAK AGNST RELGN	4,381	99.11%	0.00%
CYBOOK	YE5D-SOME BKS SHLD BE KPT OUT/PUB LIB	4,381	99.11%	0.00%
RESPAGE	PARENT RESPONDENT'S AGE	7,913	99.08%	100.00%
SAARNG3	YG3-DID SERVICE ON OWN/ORG BY OTHERS	206	99.03%	0.00%
SAHELP3	YG4-WHO HELPED MOST BY SERV ACTY	206	99.03%	50.00%
SAPYMT3	YG2-RCV MONEY/GIFTS IN RETURN FOR SERV	206	99.03%	0.00%
MOMAGE	MOTHER'S AGE	7,321	99.00%	100.00%
SHIGH	PD7-HIGHEST GRADE AT CHLD'S SCH	7,815	98.96%	0.00%
SDISRCT	PD3-SCHOOL IN ASSIGNED SCHL DISTRICT	966	98.86%	9.09%
SAHELP2	YG4-WHO HELPED MOST BY SERV ACTY	656	98.63%	22.22%
YSAIDTEA	YF18OV-TALK ABOUT FINCL AID W/TEACHERS	7,528	98.46%	0.00%
YSCOSTEA	YF17OV-TALK ABOUT COST OF COLL W/TCHRS	7,528	98.46%	0.00%
GRADEEQ	PB7-GRADE EQUIV/HOME SCH/SP ED/UNGRD	127	98.43%	100.00%

Table 6-2.—Item response rates for items on the Youth Interview public use data file—Continued

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
YSATTTEA	YF5OV-DISC COLLEGES/SCHOOLS W/TEACHERS	7,528	98.41%	0.00%
YSREQTEA	YF3OV-TALK W/TEACHER ABT COLL ACAD REQ	7,528	98.41%	0.00%
FCPOSTHS	YF1A-WILL ATTEND SCHOOL AFTER HS	7,913	98.33%	0.00%
SAPOOR3	YG7-ACTY ORG TO HELP POOR/HUNGRY	120	98.33%	50.00%
YSCOSFAM	YF17-TALK ABOUT COST OF COLL W/PARENT	7,619	98.31%	0.00%
YSATTFAM	YF5-DISC COLLEGES/SCHOOLS W/PARENTS	7,619	98.29%	0.00%
SAREG3	YD4-SERVICE ACTIVITY SCHEDULE	582	98.28%	90.00%
YSAIDFAM	YF18-TALK ABOUT FINCL AID W/ PARENT	7,619	98.24%	0.00%
YSREQFAM	YF3-TALK W/PRNT ABT COLL ACAD REQ	7,619	98.14%	0.00%
SAWKSNU3	YD5OV-NUM WKS FOR SERV ACTY	159	98.11%	0.00%
YSTEST	YF4-TAKEN TEST FOR COLLEGE ADMISSION	4,181	98.11%	0.00%
SAWKS3	YD5-FREQ OF SERVICE ACTIVITY	244	97.95%	0.00%
SLOW	PD6-LOWEST GRADE AT CHLD'S SCH	7,815	97.91%	0.00%
SAHCHIL2	YG5-HELPED CHLDRN/STDTS	449	97.55%	18.18%
SARELA2	YG6-HELPED FAM/FRNDS	449	97.55%	18.18%
SAHADLT3	YG5-HELPED ADLTS	120	97.50%	33.33%
SAHCHIL3	YG5-HELPED CHLDRN/STDTS	120	97.50%	33.33%
SAHELDR3	YG5-HELPED ELDRLY	120	97.50%	33.33%
SAHADLT2	YG5-HELPED ADLTS	449	97.33%	25.00%
SAHELDR2	YG5-HELPED ELDRLY	449	97.33%	25.00%
SAWKS2	YD5-FREQ OF SERVICE ACTIVITY	763	97.25%	0.00%
SADISB2	YG8-ACT ORG TO HELP DISABLED	449	97.10%	7.69%
SAPOOR2	YG7-ACTY ORG TO HELP POOR/HUNGRY	449	97.10%	15.38%
YSOTHTUI	YF13-GOT INFO TUITION VOC/TECH/COMM SCH	802	96.51%	0.00%
SAWKS1	YD5-FREQ OF SERVICE ACTIVITY	1,841	96.47%	0.00%
SAHRS2	YD6-HRS/WK FOR SERV ACTY	763	96.46%	0.00%
SAHCHIL1	YG5-HELPED CHLDRN/STDTS	1,022	96.38%	0.00%
CYFAMSAY	YE5B-FAM HAS NO SAY IN WHAT GOVT DOES	4,381	96.37%	0.00%
SAHRS1	YD6-HRS/WK FOR SERV ACTY	1,841	96.36%	0.00%
SAWKSNU2	YD5OV-NUM WKS FOR SERV ACTY	521	96.35%	0.00%
SAHRS3	YD6-HRS/WK FOR SERV ACTY	244	96.31%	0.00%
YS2YRTUI	YF16-CAN EST TUITION AT 2YR COMM COLL	346	96.24%	0.00%
YSOTHTYP	YF12-LIKELY ATTEND VOC/TECH/COMM/JR COLL	1,280	96.09%	0.00%
SARELA3	YG6-HELPED FAM/FRNDS	120	95.83%	20.00%
SAHRSNU1	YD6OV-NUM HRS/WK FOR SERV ACTY	1,811	95.80%	0.00%
SAWKSNU1	YD5OV-NUM WKS FOR SERV ACTY	1,254	95.77%	0.00%
SAHRSNU3	YD6OV-NUM HRS/WK FOR SERV ACTY	235	95.74%	0.00%
SAHRSNU2	YD6OV-NUM HRS/WK FOR SERV ACTY	748	95.72%	0.00%
FCGRADCO	YF1B-WILL GRADUATE FROM 4YR COLL	7,619	95.69%	0.00%
YSSTART	YF2-WILL START COLL ED AT 2 OR 4 YR SCH	7,132	95.26%	0.00%
SADISB3	YG8-ACT ORG TO HELP DISABLED	120	95.00%	0.00%
SAREQYOU	YD10-SCH REQD THIS STDT SERV ACTY	965	94.61%	0.00%
SAARRSER	YD8-SCH ARRANGES SERV ACTIVITIES	7,806	94.45%	0.00%
YS4YRTUI	YF11-CAN EST TUITION IN-STATE 4YR COLL	4,283	94.19%	0.00%
YSOESTUI	YF15-CAN EST TUITION VOC/TEC/COMM SCH	540	93.89%	0.00%
SARELA1	YG6-HELPED FAM/FRNDS	1,022	93.84%	0.00%
SAHADLT1	YG5-HELPED ADLTS	1,022	93.74%	0.00%

Table 6-2.—Item response rates for items on the Youth Interview public use data file—Continued

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
SAHELDR1	YG5-HELPED ELDRLY	1,022	93.74%	0.00%
YSCOLTYP	YF6-LIKELY TO ATTEND PUB/PRIV 4YR COLL	3,382	93.70%	0.00%
YSCESTUI	YF10-CAN ESTIMATE TUITION/FEES 4YR COLL	1,071	93.56%	0.00%
PRREPGOV	YC2-SERVED/WORKED IN STUDENT GOVT	6,487	92.51%	0.00%
PRSTUGOV	YC1-SCH HAS STUDENT GOVT	7,806	92.49%	0.00%
PRWRKHRS	YC6-HRS/WK WORKS	3,733	92.39%	0.00%
YSNOTREA	YF19-REASON NOT ATTEND SCH AFTER HS	294	92.18%	0.00%
SAREQSER	YD9-SCH REQUIRES SERV ACTY	7,806	92.06%	0.00%
YSCOLST	YF7-LIKELY TO ATTEND IN/OUT STATE COLL	1,818	91.91%	0.00%
SAPOOR1	YG7-ACTY ORG TO HELP POOR/HUNGRY	1,022	91.88%	0.00%
YSCOLTUI	YF8-GOT INFO ABT TUITION FOR SPECFC COLL	1,517	91.83%	0.00%
SNUMSTUD	PD8-# OF STDTS AT CHLD'S SCH	7,815	91.66%	0.00%
SADISB1	YG8-ACT ORG TO HELP DISABLED	1,022	91.10%	0.00%
HINCOME	PW6-TOTAL HH INCOME RANGE	7,913	91.01%	0.00%
HOMSCHR	PB5-HRS/WK HOME SCH CHLD IN SCHOOL	31	87.10%	100.00%
SNUMGRAD	PD8OV-# OF STDTS IN CHLD'S GRADE	125	83.20%	0.00%
YSCESAMT	YF10OV1-EST OF TUITION/FEES AT 4YR COLL	272	82.35%	4.17%
YSCESINC	YF10OV2-EST INCLUDES TUITION/OTHER FEES	272	78.31%	0.00%
YS4YRAMT	YF11OV1-EST OF TUITION IN-STATE 4YR COLL	729	78.19%	0.63%
YSOESAMT	YF15OV1-EST TUITION/FEES VOC/TECH/COMM	87	75.86%	0.00%
YS4YRINC	YF11OV2-EST INCLUDES TUITION/OTHER FEES	729	67.90%	0.43%
YSOESINC	YF15OV2-EST INCLUDES TUITION/OTHER FEES	87	67.82%	21.43%
HINCMEXT	PW6OV-EXACT HH INC NEAREST $1,000	1,284	64.95%	1.33%
YSCOLAMT	YF9-COST OF TUITION AT SPECFC 4YR COLL	985	64.26%	3.69%
YS2YRAMT	YF16OV1-EST TUITION/FEES 2YR COMM COLL	62	62.90%	0.00%
YS2YRINC	YF16OV2-EST INCLUDES TUITION/OTHER FEES	62	56.45%	0.00%
YSOTHAMT	YF14-TUITION AT SPEC VOC/TECH/COMM SCH	394	46.95%	0.00%
YSOTHINC	YF14OV-EST INCLUDES TUITION/OTHER FEES	394	38.32%	2.88%

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Table 6-3.—Item response rates for items on the Adult Education Interview public use data file

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
APSTILL	AE2-STILL IN APPRENTICESHIP PROGRAM	133	100.00%	0.00%
BSCUREM	AC12-PROV OF SUPPORT CURRENT EMPLOYER	20	100.00%	0.00%
BSIMPROV	AC1A-BASIC SKILLS CLASSES	972	100.00%	0.00%
BSINCOM	AC14-ABE/GED THRU DIST ED-COM CONF	7	100.00%	0.00%
BSINEMA	AC14-ABE/GED THRU DIST ED-E-MAIL	7	100.00%	0.00%
BSINOTH	AC14-ABE/GED THRU DIST ED-OTHER	7	100.00%	0.00%
BSINSAT	AC14-ABE/GED THRU DIST ED-SATELLITE	7	100.00%	0.00%
BSINTV	AC14-ABE/GED THRU DIST ED-TV/RADIO	7	100.00%	0.00%
BSINVID	AC14-ABE/GED THRU DIST ED-VIDEO CONF	7	100.00%	0.00%
BSINWWW	AC14-ABE/GED THRU DIST ED-INTERNET	7	100.00%	0.00%
ESCUREM	AB11-PROV OF SUPPORT CURRENT EMPLOYER	8	100.00%	0.00%
ESDIST	AB12-ESL THRU DISTANCE EDUCATION	33	100.00%	0.00%
ESEMPPAY	AB10D-EMPLOYER PAID ALL/PART OF COSTS	21	100.00%	0.00%
ESEMPREQ	AB10A-EMPLOYER REQUIRED ESL CLASSES	21	100.00%	0.00%
ESEMPSPA	AB10C-EMPLOYER PROVIDED CLASSROOM SPACE	21	100.00%	0.00%
ESEMPWP	AB10B-EMPLOYER GAVE TIME OFF W/WO PAY	21	100.00%	0.00%
ESINCOM	AB13-ESL CLASS THRU DIST ED-COM CONF	0	100.00%	0.00%
ESINEMA	AB13-ESL CLASS THRU DIST ED-E-MAIL	0	100.00%	0.00%
ESINOTH	AB13-ESL CLASS THRU DIST ED-OTHER	0	100.00%	0.00%
ESINSAT	AB13-ESL CLASS THRU DIST ED-SATELLITE	0	100.00%	0.00%
ESINTV	AB13-ESL CLASS THRU DIST ED-TV/RADIO	0	100.00%	0.00%
ESINVID	AB13-ESL CLASS THRU DIST ED-VIDEO CONF	0	100.00%	0.00%
ESINWWW	AB13 ESL CLASS THRU DIST ED-INTERNET	0	100.00%	0.00%
ESWKS	AB5-HOW MANY WEEKS IN ESL CLASSES	0	100.00%	0.00%
ESPROVEM	AB9-INSTRUCTION PROVIDER WAS EMPLOYER	21	100.00%	0.00%
ESREASON	AB3-MAIN REASON FOR ESL CLASSES	68	100.00%	0.00%
SAINCOM	AG5-PERS CRSE THRU DIST ED-COM CONF	48	100.00%	0.00%
SAINEMA	AG5-PERS CRSE THRU DIST ED-E-MAIL	48	100.00%	0.00%
SAINOTH	AG5-PERS CRSE THRU DIST ED-OTHER	48	100.00%	0.00%
SAINSAT	AG5-PERS CRSE THRU DIST ED-SATELLITE	48	100.00%	0.00%
SAINTV	AG5-PERS CRSE THRU DIST ED-TV/RADIO	48	100.00%	0.00%
SAINVID	AG5-PERS CRSE THRU DIST ED-VIDEO CONF	48	100.00%	0.00%
SAINWWW	AG5-PERS CRSE THRU DIST ED-INTERNET	48	100.00%	0.00%
SEX	ADULT'S GENDER	6,697	100.00%	0.00%
IBSPEAK	AA9-LANGUAGE SPOKEN MOST AT HOME	6,697	99.99%	100.00%
IBDIPLYR	AA3-HS DIPL/EQUIV IN LAST 12 MONTHS	3,749	99.95%	0.00%
CRDEGREE	AD1A-COLLEGE OR UNIVERSITY PROGRAM	6,697	99.93%	0.00%
IBLANF	IMPUTATION FLAG	6,697	99.93%	100.00%
IBWORK	AA5-WORKED FOR PAY LAST WEEK	6,697	99.93%	0.00%
SAACTY	AG1-OTHER STRUCTURED COURSES	6,697	99.93%	0.00%
APPRENTI	AE1-APPRENTICESHIP PROGRAM	6,697	99.91%	0.00%
BSHSEQUV	AC1C-OTHER HS EQUIVALENCY PROGRAM	972	99.90%	0.00%
CRVOCDIP	AD1B-VOC/TECH PROGRAM	6,697	99.90%	0.00%
IBDIPL	AA2-HIGH SCHOOL DIPLOMA OR GED	2,900	99.90%	100.00%
IBWORK12	AA7-WORK AT A JOB IN PAST 12 MONTHS	6,697	99.90%	0.00%
WRNEW	D-TOTAL NUMBER OF WRK-REL CRS AT AF2	1,943	99.90%	0.00%
SARSBAS	AG2-TO IMPROVE BASIC SKILLS	1,807	99.89%	0.00%

Table 6-3.—Item response rates for items on the Adult Education Interview public use data file—Continued

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
SARSCUR	AG2-TO IMPROVE/ADVANCE JOB	1,807	99.89%	0.00%
SARSNEW	AG2-TO TRAIN FOR NEW JOB	1,807	99.89%	0.00%
SARSPER	AG2-FOR PERSONAL/FAMILY REASON	1,807	99.89%	0.00%
SARSREQ	AG2-TO MEET REQUIREMENT FOR DEGREE	1,807	99.89%	0.00%
WRACTY	AF1-CAREER OR JOB RELATED COURSES	6,697	99.88%	0.00%
IBUSDIPL	AA2OV-HIGH SCHOOL DIPLOMA IN U.S.	2,206	99.86%	0.00%
GIOTH	AH1-TAKEN ANY OTH CLASSES NOT MENTIONED	6,697	99.84%	0.00%
SADIST	AG4-PERS CRSE THRU DISTANCE EDUCATION	1,807	99.83%	0.00%
SARSOTH	AG2-FOR SOME OTHER REASON	1,807	99.83%	0.00%
IBLEAVE	AA6-ON LEAVE OR VACATION LAST WEEK	1,596	99.81%	0.00%
WRSAME	AF4-SAME MAIN REASON FOR OTH COURSES	1,067	99.81%	0.00%
ESLANG	AB1-ESL CLASSES	488	99.80%	0.00%
READENGL	AA10-HOW WELL READS ENGLISH	488	99.80%	0.00%
CRDIST	AD11-CRED PRGM THRU DISTANCE EDUCATION	1,437	99.79%	0.00%
ESEVER	AB14-EVER TAKEN ESL CLASSES	420	99.76%	0.00%
WRCSREA	AF3-MAIN REASON FOR WORK-REL COURSE	1,943	99.74%	0.00%
WRDIST	AF11-WK REL CRS THRU DISTANCE EDUCATION	1,943	99.74%	0.00%
WREMPSPA	AF9C-EMPLOYER PROVIDED CLASSROOM SPACE	1,901	99.74%	0.00%
WRTOTHR	AF6-TOTAL HRS IN WORK RELATED COURSES	1,943	99.69%	0.00%
IBGED	AA4-HIGH SCHOOL DIPLOMA THROUGH GED	6,003	99.68%	5.26%
SAPRBUS	AG3-PROVIDER-BUSINESS/INDUSTRY	1,807	99.67%	0.00%
SAPRGOV	AG3-PROVIDER-FEDERAL/STATE/LOCAL GOVT	1,807	99.67%	0.00%
SAPRPRI	AG3-PROVIDER-PRIV TRADE/BUSINESS SCHOOL	1,807	99.67%	0.00%
SARPRPRO	AG3-PROVIDER-PROFESSIONAL ASSOCIATION	1,807	99.67%	0.00%
SASC2YR	AG3-PROVIDER-JUNIOR COLLEGE	1,807	99.67%	0.00%
SASCALC	AG3-PROVIDER-ADULT LEARNING CENTER	1,807	99.67%	0.00%
SASCCHU	AG3-PROVIDER-CHURCH/RELIGIOUS ORG	1,807	99.67%	0.00%
SASCLIB	AG3-PROVIDER-PUBLIC LIBRARY	1,807	99.67%	0.00%
SASCORG	AG3-PROVIDER-PRIVATE COMMUNITY ORG	1,807	99.67%	0.00%
SASCOTH	AG3-PROVIDER-OTHER SCHOOL/ORG	1,807	99.67%	0.00%
SASCSCH	AG3-PROVIDER-ELEMENTARY/JR/HIGH SCHOOL	1,807	99.67%	0.00%
SASCTUT	AG3-PROVIDER-TUTOR/PRIVATE INSTRUCTOR	1,807	99.67%	0.00%
SASCVOC	AG3-PROVIDER-VOC/TECH SCHOOL	1,807	99.67%	0.00%
IBGRADE	AA1-HIGHEST GRADE/YR OF SCHL COMPLETED	6,697	99.66%	100.00%
CRREASON	AD4-MAIN REASON FOR CRED PROGRAM	1,437	99.65%	0.00%
WREMPPAY	AF9D-EMPLOYER PAID ALL/PART OF COSTS	1,901	99.63%	0.00%
WREMPREQ	AF9A-EMPLOYER REQUIRED WORK-REL COURSES	1,901	99.63%	0.00%
WRPROVEM	AF8-INSTRUCTIONAL PROVIDER WAS EMPLOYER	1,901	99.63%	0.00%
CREMPREQ	AD8A-EMPLOYER REQUIRED CRED PROGRAM	1,319	99.62%	0.00%
SAPR4YR	AG3-PROVIDER-4 YR COLLEGE/UNIVERSITY	1,807	99.61%	14.29%
BSGED	AC1B-GED PREPARATION CLASSES	972	99.59%	0.00%
WRITENGL	AA11-HOW WELL WRITES ENGLISH	488	99.59%	0.00%
CRCUREM	AD9-PROV OF SUPPORT CURRENT EMPLOYER	709	99.58%	0.00%
GIHOPE	AH3-HEARD OF HOPE SCHOLARSHIP TAX CRDT	6,697	99.57%	0.00%
CRPROVEM	AD7-INSTRUCTION PROVIDER WAS EMPLOYER	1,319	99.55%	0.00%
BSEVER	AC15-EVER TAKEN ABE/GED CLASSES	751	99.47%	0.00%
CREMPPAY	AD8D-EMPLOYER PAID ALL/PART OF COSTS	1,319	99.47%	0.00%

Table 6-3.—Item response rates for items on the Adult Education Interview public use data file—Continued

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
IBVOCDIP	AA1OV-RECEIVED VOC/TECH DIPLOMA	1,326	99.47%	100.00%
WRCUREM	AF10-PROV OF SUPPORT CURRENT EMPLOYER	1,671	99.46%	0.00%
CIPF	MAJOR FIELD OF STUDY CODE	1,437	99.44%	0.00%
CRPRTYP	AD5-TYPE OF INSTRUCTION PROVIDER	1,437	99.44%	0.00%
GILIFE	AH3-HEARD OF LIFETIM LEARNING TAX CRDT	6,697	99.42%	0.00%
WRINCOM	AF12-WK REL CRS THRU DIST ED-COM CONF	173	99.42%	100.00%
WRINEMA	AF12-WK REL CRS THRU DIST ED-E-MAIL	173	99.42%	100.00%
WRINOTH	AF12-WK REL CRS THRU DIST ED-OTHER	173	99.42%	100.00%
WRINSAT	AF12-WK REL CRS THRU DIST ED-SATELLITE	173	99.42%	100.00%
WRINTV	AF12-WK REL CRS THRU DIST ED-TV/RADIO	173	99.42%	100.00%
WRINVID	AF12-WK REL CRS THRU DIST ED-VIDEO CONF	173	99.42%	100.00%
WRINWWW	AF12-WK REL CRS THRU DIST ED-INTERNET	173	99.42%	100.00%
CREMPSPA	AD8C-EMPLOYER PROVIDED CLASSROOM SPACE	1,319	99.39%	0.00%
CARDBOOK	AI3-READ ANY BOOKS IN PAST 6 MONTHS	6,697	99.34%	0.00%
CASERVC	AI6-PARTICIPATE IN COMMUNITY SERVICE	6,697	99.34%	0.00%
LIBMO	AI4-USED PUBLIC LIBRARY IN PAST MONTH	6,697	99.33%	0.00%
WRRSBAS	AF5-TO IMPROVE BASIC SKILLS	144	99.31%	0.00%
WRRSCUR	AF5-TO IMPROVE/ADVANCE JOB	144	99.31%	0.00%
WRRSNEW	AF5-TO TRAIN FOR NEW JOB	144	99.31%	0.00%
WRRSOTH	AF5-FOR SOME OTHER REASON	144	99.31%	0.00%
WRRSPER	AF5-FOR PERSONAL/FAMILY REASON	144	99.31%	0.00%
WRRSREQ	AF5-TO MEET REQUIREMENT FOR DEGREE	144	99.31%	0.00%
CARDPAPR	AI1-HOW OFTEN READ NEWSPAPER	6,697	99.28%	0.00%
LIBYR	AI5-USED PUBLIC LIBRARY IN PAST YEAR	6,697	99.28%	0.00%
WRPR4YR	AF7-PROVIDER-4 YR COLLEGE/UNIVERSITY	1,943	99.28%	0.00%
WRPRBUS	AF7-PROVIDER-BUSINESS/INDUSTRY	1,943	99.28%	0.00%
WRPRGOV	AF7-PROVIDER-FEDERAL/STATE/LOCAL GOVT	1,943	99.28%	0.00%
WRPRPRI	AF7-PROVIDER-PRIV TRADE/BUSINESS SCHOOL	1,943	99.28%	0.00%
WRPRPRO	AF7-PROVIDER-PROFESSIONAL ORGANIZATION	1,943	99.28%	0.00%
WRSC2YR	AF7-PROVIDER-JUNIOR COLLEGE	1,943	99.28%	0.00%
WRSCALC	AF7-PROVIDER-ADULT LEARNING CENTER	1,943	99.28%	0.00%
WRSCCHU	AF7-PROVIDER-CHURCH/RELIGIOUS ORG	1,943	99.28%	0.00%
WRSCLIB	AF7-PROVIDER-PUBLIC LIBRARY	1,943	99.28%	0.00%
WRSCORG	AF7-PROVIDER-PRIVATE COMM ORGANIZATION	1,943	99.28%	0.00%
WRSCOTH	AF7-PROVIDER-OTHER SCHOOL OR ORG	1,943	99.28%	0.00%
WRSCSCH	AF7-PROVIDER-ELEM/JR/HIGH SCHOOL	1,943	99.28%	0.00%
WRSCTUT	AF7-PROVIDER-TUTOR/PRIVATE INSTRUCTOR	1,943	99.28%	0.00%
WRSCVOC	AF7-PROVIDER-VOC/TECH SCHOOL	1,943	99.28%	0.00%
BSATDAY	AC2-RECVED DIPLOMA THRU REG DAYTIME HS	134	99.25%	0.00%
CRINCOM	AD12-CRED PRGM THRU DIST ED-COMP/CON	133	99.25%	0.00%
CRINEMA	AD12-CRED PRGM THRU DIST ED-E-MAIL	133	99.25%	0.00%
CRINOTH	AD12-CRED PRGM THRU DIST ED-OTHER	133	99.25%	0.00%
CRINSAT	AD12-CRED PRGM THRU DIST ED-SATELLITE	133	99.25%	0.00%
CRINTV	AD12-CRED PRGM THRU DIST ED-TV/RADIO	133	99.25%	0.00%
CRINVID	AD12-CRED PRGM THRU DIST ED-VIDEO CONF	133	99.25%	0.00%
CRINWWW	AD12-CRED PRGM THRU DIST ED-INTERNET	133	99.25%	0.00%
CREMPWP	AD8B-EMPLOYER GAVE TIME OFF W/WO PAY	1,319	99.24%	0.00%

Table 6-3.—Item response rates for items on the Adult Education Interview public use data file—Continued

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
WREMPWP	AF9B-EMPLOYER GAVE TIME OFF W/WO PAY	1,901	99.21%	0.00%
APEMPLOY	AE4A-EMPLOYER SPONSORED APPR	125	99.20%	0.00%
ABORNUS	AJ6-COUNTRY OF ORIGIN	6,697	99.13%	100.00%
JOBACTY	AJ9-MAIN ACT DONE MOST OF LAST WEEK	1,835	98.96%	0.00%
AMARSTAT	AJ5-CURRENT MARITAL STATUS	6,697	98.82%	100.00%
CARDMAGS	AI2-NUMBER OF MAGAZINES	6,697	98.81%	0.00%
HAFDC	AK5C-FAMILY RECD TANF/AFDC PAST 12 MO	2,298	98.78%	0.00%
HFOODST	AK5B-FAMILY RECD FOOD STMPS PAST 12 MO	2,298	98.78%	0.00%
CRTYASC	AD2-TYPE OF PRGM-ASSOCIATE'S DEGREE	1,437	98.75%	0.00%
CRTYBCH	AD2-TYPE OF PRGM-BACHELOR'S DEGREE	1,437	98.75%	0.00%
CRTYDOC	AD2-TYPE OF PRGM-DOCTORATE	1,437	98.75%	0.00%
CRTYMAS	AD2-TYPE OF PRGM-MASTER'S DEGREE	1,437	98.75%	0.00%
CRTYOTH	AD2-TYPE OF PRGM-ANOTHER DEGREE	1,437	98.75%	0.00%
CRTYPRF	AD2-TYPE OF PRGM-PROFESSIONAL DEGREE	1,437	98.75%	0.00%
CRTYVOC	AD2-TYPE OF PRGM-VOC/TECH DIPLOMA	1,437	98.75%	0.00%
GIOTCRD	AH2C-CREDENTIAL PROGRAMS	400	98.75%	0.00%
HWIC	AK5A-FAMILY RECD WIC PAST 12 MO	2,298	98.74%	0.00%
HOTHNUM	AK2-OTHER TELEPHONE NUMBER IN HH	6,697	98.73%	0.00%
JOBEVER	AJ11-EVER WORKED AT A JOB FOR PAY	1,629	98.65%	0.00%
AHISPANI	AJ4-HISPANIC ORIGIN	6,697	98.54%	100.00%
ESHRS	AB6-HRS ATTENDED ESL CLASSES	68	98.53%	0.00%
ESHRSUNT	AB6-UNIT OF TIME ATTENDED ESL	68	98.53%	0.00%
ESWHEN	AB4-TIME SPENT IN ESL CLASSES	68	98.53%	0.00%
ESWHENUN	AB4-UNIT OF TIME IN ESL CLASSES	68	98.53%	0.00%
APUNION	AE4B-LABOR UNION SPONSORED APPR	133	98.50%	0.00%
IBGRAD2	AA1-ACTUAL GRADE 9-11 COMPLETED	453	98.45%	100.00%
HOWNHOME	AK1-OWN, RENT HOME/OTHR ARRANGMNT	6,697	98.43%	0.00%
ARACE	AJ2-RACE	6,697	98.37%	100.00%
HNUMUSE	AK3-HOW MANY OTH PHN NUM FOR HM USE	1,299	98.31%	0.00%
GIOTAPR	AH2D-APPRENTICESHIP PROGRAMS	400	98.25%	0.00%
IBWORKMO	AJ12-MONTHS WORKED FOR PAY IN PAST YEAR	6,697	98.22%	0.00%
IBGRAD1	AA1-ACTUAL GRADE 0-8 COMPLETED	272	98.16%	100.00%
JOBLOOK	AJ7-LOOKING FOR WORK IN PAST 4 WKS	1,443	98.13%	0.00%
GIOTWRL	AH2E-CAREER OR JOB RELATED COURSES	400	98.00%	0.00%
ADOBMM	AJ1-MONTH OF BIRTH	6,697	97.80%	100.00%
GIOTPRS	AH2F-OTHER STRUCTURED COURSES	400	97.75%	0.00%
JOBMORE	AJ13-MORE THAN ONE JOB LAST WEEK	5,177	97.74%	0.00%
ADOBYY	AJ1-YEAR OF BIRTH	6,697	97.61%	100.00%
ASTANDS	AI7B-PROMOTION STANDARD WLD IMPROV EDU	6,697	97.52%	0.00%
BSEMPPAY	AC11D-EMPLOYER PAID ALL/PART OF COSTS	80	97.50%	0.00%
BSEMPREQ	AC11A-EMPLOYER REQUIRED ABE/GED CLASSES	80	97.50%	0.00%
BSEMPSPA	AC11C-EMPLOYER PROVIDED CLASSROOM SPACE	80	97.50%	0.00%
BSPROVEM	AC10-INSTRUCTION PROVIDER WAS EMPLOYER	80	97.50%	0.00%
ADISCIP	AI7A-STRICT DISCIPLINE WLD IMPROV EDU	6,697	97.45%	0.00%
AEVAL	AI7C-TEACHR EVALUATIONS WLD IMPROV EDU	6,697	97.30%	0.00%
CRPBPR	AD6-PUBLIC OR PRIVATE COLLEGE/UNIV	1,033	97.29%	0.00%
AOTHRACE	AJ3-SOME OTHER RACE	586	97.27%	100.00%

Table 6-3.—Item response rates for items on the Adult Education Interview public use data file—Continued

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
BSDIST	AC13-ABE/GED THRU DISTANCE EDUCATION	107	97.20%	0.00%
BSREASON	AC4-MAIN REASON FOR ABE/GED CLASSES	107	97.20%	0.00%
PAYHRS	AJ14-HOURS PER WEEK WORKED FOR PAY	4,625	97.17%	0.00%
ASTUENG	AJ6OV2-STUDY ENGLISH BEFORE CAME TO US	556	97.12%	0.00%
ESCOLL	AB2-ESL IS PART OF COLLEGE PROGRAM	68	97.06%	0.00%
ESPRTYP	AB8-TYPE OF INSTRUCTION PROVIDER	33	96.97%	0.00%
FSOC	OCCUPATION CODE	5,183	96.89%	0.00%
AMOVEAGE	AJ6OV-AGE WHEN MOVED TO U.S.	759	96.71%	4.00%
FSIC	INDUSTRY CODE	5,183	96.57%	0.00%
ASCHLYR	AI7D-LONGER SCHOOL YR WLD IMPROV EDU	6,697	96.49%	0.00%
CONTREQ	AJ18-REQUIRED CONTINUING EDUCATION	5,183	96.26%	0.00%
BSEMPWP	AC11B-EMPLOYER GAVE TIME OFF W/WO PAY	80	96.25%	0.00%
APOTHER	AE4E-SOMEONE ELSE SPONSORED APPR	133	96.24%	0.00%
JOBANSAD	AJ8-PLACE OR ANSWERED ADS/SENT RESUME	268	95.52%	0.00%
JOBEMPL	AJ8-CHECKED WITH EMPLOYER DIRECTLY	268	95.52%	0.00%
JOBOTHER	AJ8-SOMETHING ELSE TO FIND WORK	268	95.52%	0.00%
JOBPRIV	AJ8-CHECKED WITH PRIV EMPLOYMENT AGENCY	268	95.52%	0.00%
JOBPUBL	AJ8-CHECKED WITH PUBLIC EMPLMENT AGENCY	268	95.52%	0.00%
JOBREAD	AJ8-READ WANT ADS	268	95.52%	0.00%
JOBREL	AJ8-CHECKED WITH FRIENDS OR RELATIVES	268	95.52%	0.00%
APSTAGOV	AE4C-LOCAL OR STATE GOV SPONSORED APPR	133	95.49%	0.00%
BSHRS	AC7-HRS ATTENDED ABE/GED CLASSES	107	95.33%	0.00%
BSHRSUNT	AC7-UNIT FOR HOURS ATTENDED ABE/GED	107	95.33%	0.00%
CRPTFT	AD10-PART-TIME OR FULL-TIME STUDENT	1,437	95.13%	1.43%
ESDAYS	AB7-DAYS/WK ATTENDED ESL CLASSES	20	95.00%	0.00%
BSFMLIT	AC3-ABE/GED PART OF FAMILY LITERACY PRM	107	94.39%	0.00%
GIOTESL	AH2A-ESL CLASSES	17	94.12%	0.00%
BSWHEN	AC5-TIME SPENT IN ABE/GED CLASSES	107	93.46%	0.00%
BSWHENUN	AC5-UNIT OF TIME IN ABE/GED CLASSES	107	93.46%	0.00%
GIHOPUS	AH5-USE HOPE SCHOLARSHIP TAX CREDIT	763	92.79%	0.00%
GIOTGED	AH2B-ABE/GED CLASSES	27	92.59%	50.00%
BSPRTYP	AC9-TYPE OF INSTRUCTION PROVIDER	107	92.52%	0.00%
APFEDGOV	AE4D-FED GOV SPONSORED APPR	133	91.73%	0.00%
JOBTAKE	AJ10-COULD HAVE TAKEN JOB LAST WEEK	420	90.71%	5.13%
GILIFUS	AH4-USE LIFETIME LEARNING TAX CREDIT	580	88.62%	0.00%
HINCMRNG	AK6-TOTAL HOUSEHOLD INCOME RANGE	6,697	87.71%	0.00%
BSDAYS	AC8-DAYS/WK ATTENDED ABE/GED CLASSES	36	86.11%	40.00%
EARNAMT	AJ15-EARNINGS	5,183	84.20%	0.37%
EARNUNT	AJ15-UNIT OF EARNINGS	5,183	84.06%	0.36%
HINCOME	AK6-TOTAL HOUSEHOLD INCOME	6,697	80.86%	0.00%
HINCMEXT	AK6OV-EXACT HH INC NEAREST $1000	689	50.65%	0.00%
BSWKS	AC6-HOW MANY WEEKS IN ABE/GED CLASSES	4	0.00%	50.00%

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Table 6-4.—Item response rates for items on the Adult Special Study Interview restricted use data file

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
APEMPLOY	AE4A-EMPLOYER SPONSORED APPR	17	100.00%	0.00%
APFEDGOV	AE4D-FED GOV SPONSORED APPR	19	100.00%	0.00%
APOTHER	AE4E-SOMEONE ELSE SPONSORED APPR	19	100.00%	0.00%
APSTAGOV	AE4C-LOCAL OR STATE GOV SPONSORED APPR	19	100.00%	0.00%
APUNION	AE4B-LABOR UNION SPONSORED APPR	19	100.00%	0.00%
BSPROVEM	AC10-INSTRUCTION PROVIDER WAS EMPLOYER	10	100.00%	0.00%
BSPRTYP	AC9-TYPE OF INSTRUCTION PROVIDER	11	100.00%	0.00%
BSREASON	AC4-MAIN REASON FOR ABE/GED CLASSES	11	100.00%	0.00%
BSWHEN	AC5-TIME SPENT IN ABE/GED CLASSES	11	100.00%	0.00%
BSWHENUN	AC5-UNIT OF TIME IN ABE/GED CLASSES	11	100.00%	0.00%
CRDEGREE	AD1A-COLLEGE OR UNIVERSITY PROGRAM	1,082	100.00%	0.00%
CRINCOM	AD12-CRED PRGM THRU DIST ED-COMP/CON	14	100.00%	0.00%
CRINEMA	AD12-CRED PRGM THRU DIST ED-E-MAIL	14	100.00%	0.00%
CRINOTH	AD12-CRED PRGM THRU DIST ED-OTHER	14	100.00%	0.00%
CRINSAT	AD12-CRED PRGM THRU DIST ED-SATELLITE	14	100.00%	0.00%
CRINTV	AD12-CRED PRGM THRU DIST ED-TV/RADIO	14	100.00%	0.00%
CRINVID	AD12-CRED PRGM THRU DIST ED-VIDEO CONF	14	100.00%	0.00%
CRINWWW	AD12-CRED PRGM THRU DIST ED-INTERNET	14	100.00%	0.00%
BSATDAY	AC2-RECVED DIPLOMA THRU REG DAYTIME HS	12	100.00%	0.00%
BSDAYS	AC8-DAYS/WK ATTENDED ABE/GED CLASSES	7	100.00%	0.00%
BSDIST	AC13-ABE/GED THRU DISTANCE EDUCATION	11	100.00%	0.00%
BSEMPPAY	AC11D-EMPLOYER PAID ALL/PART OF COSTS	10	100.00%	0.00%
BSEMPREQ	AC11A-EMPLOYER REQUIRED ABE/GED CLASSES	10	100.00%	0.00%
BSEMPSPA	AC11C-EMPLOYER PROVIDED CLASSROOM SPACE	10	100.00%	0.00%
BSEMPWP	AC11B-EMPLOYER GAVE TIME OFF W/WO PAY	10	100.00%	0.00%
BSEVER	AC15-EVER TAKEN ABE/GED CLASSES	154	100.00%	0.00%
BSGED	AC1B-GED PREPARATION CLASSES	176	100.00%	0.00%
BSHRS	AC7-HRS ATTENDED ABE/GED CLASSES	11	100.00%	0.00%
BSHRSUNT	AC7-UNIT FOR HOURS ATTENDED ABE/GED	11	100.00%	0.00%
BSHSEQUV	AC1C-OTHER HS EQUIVALENCY PROGRAM	176	100.00%	0.00%
ESHRS	AB6-HRS ATTENDED ESL CLASSES	8	100.00%	0.00%
ESHRSUNT	AB6-UNIT OF TIME ATTENDED ESL	8	100.00%	0.00%
GIOTAPR	AH2D-APPRENTICESHIP PROGRAMS	33	100.00%	0.00%
GIOTCRD	AH2C-CREDENTIAL PROGRAMS	33	100.00%	0.00%
GIOTESL	AH2A-ESL CLASSES	4	100.00%	0.00%
ESCOLL	AB2-ESL IS PART OF COLLEGE PROGRAM	8	100.00%	0.00%
ESDAYS	AB7-DAYS/WK ATTENDED ESL CLASSES	2	100.00%	0.00%
ESEVER	AB14-EVER TAKEN ESL CLASSES	61	100.00%	0.00%
ESLANG	AB1-ESL CLASSES	69	100.00%	0.00%
ESPRTYP	AB8-TYPE OF INSTRUCTION PROVIDER	2	100.00%	0.00%

Table 6-4.—Item response rates for items on the Adult Special Study Interview restricted use data file—Continued

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
ESWHEN	AB4-TIME SPENT IN ESL CLASSES	8	100.00%	0.00%
ESWHENUN	AB4-UNIT OF TIME IN ESL CLASSES	8	100.00%	0.00%
IBDIPL	AA2-HIGH SCHOOL DIPLOMA OR GED	497	100.00%	0.00%
IBDIPLYR	AA3-HS DIPL/EQUIV IN LAST 12 MONTHS	656	100.00%	0.00%
IBGRAD1	AA1-ACTUAL GRADE 0-8 COMPLETED	57	100.00%	0.00%
IBLEAVE	AA6-ON LEAVE OR VACATION LAST WEEK	251	100.00%	0.00%
IBSPEAK	AA9-LANGUAGE SPOKEN MOST AT HOME	1,082	100.00%	0.00%
IBUSDIPL	AA2OV-HIGH SCHOOL DIPLOMA IN U.S.	364	100.00%	0.00%
HNUMUSE	AK3-HOW MANY OTH PHN NUM FOR HM USE	199	100.00%	0.00%
WRITENGL	AA11-HOW WELL WRITES ENGLISH	69	100.00%	0.00%
READENGL	AA10-HOW WELL READS ENGLISH	69	100.00%	0.00%
SAACTY	AG1-OTHER STRUCTURED COURSES	1,082	100.00%	0.00%
WRRSBAS	AF9-TO IMPROVE BASIC SKILLS	51	100.00%	0.00%
WRRSCUR	AF9-TO IMPROVE/ADVANCE JOB	51	100.00%	0.00%
WRRSNEW	AF9-TO TRAIN FOR NEW JOB	51	100.00%	0.00%
WRRSOTH	AF9-FOR SOME OTHER REASON	51	100.00%	0.00%
WRRSPER	AF9-FOR PERSONAL/FAMILY REASON	51	100.00%	0.00%
WRRSREQ	AF9-TO MEET REQUIREMENT FOR DEGREE	51	100.00%	0.00%
WRATWRK	AF3-TAKEN OTHER TRAINING PRGM AT WORK	1,082	100.00%	0.00%
WRISSUE	AF5-TAKEN CLASSES FOR WORKPLACE ISSUES	1,082	100.00%	0.00%
SAISSUE	AG5-TAKEN FOR LANG/MUSIC/HH IMPROV CLS	1,082	100.00%	0.00%
WRATNEW	AF4-TOTAL NUMBER OF WORK REL COURSES	150	100.00%	0.00%
WRISNEW	AF6-TOTAL NUMBER OF WORK REL COURSES	100	100.00%	0.00%
GIOTH	AH1-TAKEN ANY OTH CLASSES NOT MENTIONED	1,082	99.91%	0.00%
CRVOCDIP	AD1B-VOC/TECH PROGRAM	1,082	99.91%	0.00%
IBLANG	AA8-FIRST LANGUAGE LEARNED TO SPEAK	1,082	99.91%	100.00%
IBWORK	AA5-WORKED FOR PAY LAST WEEK	1,082	99.91%	0.00%
IBWORK12	AA7-WORK AT A JOB IN PAST 12 MONTHS	1,082	99.91%	0.00%
SAATWRK	AG3-TAKEN ART/SPORTS/COOK/BIBLE CLS	1,082	99.91%	0.00%
APPRENTI	AE1-APPRENTICESHIP PROGRAM	1,082	99.82%	0.00%
CARDPAPR	AI1-HOW OFTEN READ NEWSPAPER	1,082	99.82%	0.00%
CASERVC	AI6-PARTICIPATE IN COMMUNITY SERVICE	1,082	99.82%	0.00%
LIBMO	AI4-USED PUBLIC LIBRARY IN PAST MONTH	1,082	99.82%	0.00%
WRCSREA	AF7-MAIN REASON FOR WORK RER COURSE	424	99.76%	0.00%
WRDIST	AF15-WK REL CRS THRU DISTANCE EDUCATION	424	99.76%	0.00%
WREMPREQ	AF13A-EMPLOYER REQUIRED WORK-REL COURSES	407	99.75%	0.00%
WREMPWP	AF13B-EMPLOYER GAVE TIME OFF W/WO PAY	407	99.75%	0.00%
LIBYR	AI5-USED PUBLIC LIBRARY IN PAST YEAR	1,082	99.72%	0.00%
WRACTY	AF1-CAREER OR JOB RELATED COURSES	1,082	99.72%	0.00%
WRNEW	AF2-TOTAL NUMBER OF WORK REL COURSES	336	99.70%	0.00%
IBGED	AA4-HIGH SCHOOL DIPLOMA THROUGH GED	949	99.68%	0.00%
CARDBOOK	AI3-READ ANY BOOKS IN PAST 6 MONTHS	1,082	99.63%	0.00%

Table 6-4.—Item response rates for items on the Adult Special Study Interview restricted use data file—Continued

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
WRSAME	AF8-SAME MAIN REASON FOR OTH COURSES	257	99.61%	0.00%
ABORNUS	AJ6-COUNTRY OF ORIGIN	1,082	99.54%	100.00%
GIHOPE	AH3-HEARD OF HOPE SCHOLARSHIP TAX CRDT	1,082	99.54%	0.00%
GILIFE	AH3-HEARD OF LIFETIM LEARNING TAX CRDT	1,082	99.54%	0.00%
IBGRADE	AA1-HIGHEST GRADE/YR OF SCHL COMPLETED	1,082	99.54%	100.00%
WREMPSPA	AF13C-EMPLOYER PROVIDED CLASSROOM SPACE	407	99.51%	0.00%
SADIST	AG9-PERS CRSE THRU DISTANCE EDUCATION	341	99.41%	0.00%
CIPF	MAJOR FIELD OF STUDY CODE	165	99.39%	0.00%
CRPRTYP	AD5-TYPE OF INSTRUCTION PROVIDER	165	99.39%	0.00%
CRREASON	AD4-MAIN REASON FOR CRED PROGRAM	165	99.39%	0.00%
CREMPREQ	AD8A-EMPLOYER REQUIRED CRED PROGRAM	152	99.34%	0.00%
WREMPPAY	AF13D-EMPLOYER PAID ALL/PART OF COSTS	407	99.26%	0.00%
WRCUREM	AF14-PROV OF SUPPORT CURRENT EMPLOYER	374	99.20%	0.00%
AHISPANI	AJ4-HISPANIC ORIGIN	1,082	99.08%	100.00%
HVCMAIL	AK9-HAS ANSWERING MACHINE/VOICE MAIL	1,082	99.08%	0.00%
WRTOTHR	AF10-TOTAL HRS IN WORK RELATED COURSES	424	99.06%	0.00%
JOBEVER	AJ11-EVER WORKED AT A JOB FOR PAY	293	98.98%	0.00%
ASTUENG	AJ6OV2-STUDY ENGLISH BEFORE CAME TO US	94	98.94%	0.00%
AMARSTAT	AJ5-CURRENT MARITAL STATUS	1,082	98.89%	100.00%
ARACE	AJ2-RACE	1,082	98.89%	100.00%
SARSBAS	AG7-TO IMPROVE BASIC SKILLS	341	98.83%	0.00%
SARSCUR	AG7-TO IMPROVE/ADVANCE JOB	341	98.83%	0.00%
SARSNEW	AG7-TO TRAIN FOR NEW JOB	341	98.83%	0.00%
SARSOTH	AG7-FOR SOME OTHER REASON	341	98.83%	0.00%
SARSPER	AG7-FOR PERSONAL/FAMILY REASON	341	98.83%	0.00%
SARSREQ	AG7-TO MEET REQUIREMENT FOR DEGREE	341	98.83%	0.00%
WRPR4YR	AF11-PROVIDER-4 YR COLLEGE/UNIVERSITY	424	98.82%	0.00%
WRPRBUS	AF11-PROVIDER-BUSINESS/INDUSTRY	424	98.82%	0.00%
WRPRGOV	AF11-PROVIDER-FEDERAL/STATE/LOCAL GOVT	424	98.82%	0.00%
WRPRPRI	AF11-PROVIDER-PRIV TRADE/BUSINESS SCHOOL	424	98.82%	0.00%
WRPRPRO	AF11-PROVIDER-PROFESSIONAL ORGANIZATION	424	98.82%	0.00%
WRSC2YR	AF11-PROVIDER-JUNIOR COLLEGE	424	98.82%	0.00%
WRSCALC	AF11-PROVIDER-ADULT LEARNING CENTER	424	98.82%	0.00%
WRSCCHU	AF11-PROVIDER-CHURCH/RELIGIOUS ORG	424	98.82%	0.00%
WRSCLIB	AF11-PROVIDER-PUBLIC LIBRARY	424	98.82%	0.00%
WRSCORG	AF11-PROVIDER-PRIVATE COMM ORGANIZATION	424	98.82%	0.00%
WRSCOTH	AF11-PROVIDER-OTHER SCHOOL OR ORG	424	98.82%	0.00%
WRSCSCH	AF11-PROVIDER-ELEM/JR/HIGH SCHOOL	424	98.82%	0.00%
WRSCTUT	AF11-PROVIDER-TUTOR/PRIVATE INSTRUCTOR	424	98.82%	0.00%
WRSCVOC	AF11-PROVIDER-VOC/TECH SCHOOL	424	98.82%	0.00%
CARDMAGS	AI2-NUMBER OF MAGAZINES	1,082	98.80%	0.00%
CRDIST	AD11-CRED PRGM THRU DISTANCE EDUCATION	165	98.79%	0.00%
CRTYASC	AD2-TYPE OF PRGM-ASSOCIATE'S DEGREE	165	98.79%	0.00%

Table 6-4.—Item response rates for items on the Adult Special Study Interview restricted use data file—Continued

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
CRTYBCH	AD2-TYPE OF PRGM-BACHELOR'S DEGREE	165	98.79%	0.00%
CRTYDOC	AD2-TYPE OF PRGM-DOCTORATE	165	98.79%	0.00%
CRTYMAS	AD2-TYPE OF PRGM-MASTER'S DEGREE	165	98.79%	0.00%
CRTYOTH	AD2-TYPE OF PRGM-ANOTHER DEGREE	165	98.79%	0.00%
CRTYPRF	AD2-TYPE OF PRGM-PROFESSIONAL DEGREE	165	98.79%	0.00%
CRTYVOC	AD2-TYPE OF PRGM-VOC/TECH DIPLOMA	165	98.79%	0.00%
WRPROVEM	AF12-INSTRUCTIONAL PROVIDER WAS EMPLOYER	407	98.77%	0.00%
JOBACTY	AJ9-MAIN ACT DONE MOST OF LAST WEEK	320	98.75%	0.00%
CREMPPAY	AD8D-EMPLOYER PAID ALL/PART OF COSTS	152	98.68%	0.00%
CREMPSPA	AD8C-EMPLOYER PROVIDED CLASSROOM SPACE	152	98.68%	0.00%
CREMPWP	AD8B-EMPLOYER GAVE TIME OFF W/WO PAY	152	98.68%	0.00%
CRPROVEM	AD7-INSTRUCTION PROVIDER WAS EMPLOYER	152	98.68%	0.00%
SAPR4YR	AG8-PROVIDER-4 YR COLLEGE/UNIVERSITY	341	98.53%	0.00%
SAPRBUS	AG8-PROVIDER-BUSINESS/INDUSTRY	341	98.53%	0.00%
SAPRGOV	AG8-PROVIDER-FEDERAL/STATE/LOCAL GOVT	341	98.53%	0.00%
SAPRPRI	AG8-PROVIDER-PRIV TRADE/BUSINESS SCHOOL	341	98.53%	0.00%
SARPRPRO	AG8-PROVIDER-PROFESSIONAL ASSOCIATION	341	98.53%	0.00%
SASC2YR	AG8-PROVIDER-JUNIOR COLLEGE	341	98.53%	0.00%
SASCALC	AG8-PROVIDER-ADULT LEARNING CENTER	341	98.53%	0.00%
SASCCHU	AG8-PROVIDER-CHURCH/RELIGIOUS ORG	341	98.53%	0.00%
SASCLIB	AG8-PROVIDER-PUBLIC LIBRARY	341	98.53%	0.00%
SASCORG	AG8-PROVIDER-PRIVATE COMMUNITY ORG	341	98.53%	0.00%
SASCOTH	AG8-PROVIDER-OTHER SCHOOL/ORG	341	98.53%	0.00%
SASCSCH	AG8-PROVIDER-ELEMENTARY/JR/HIGH SCHOOL	341	98.53%	0.00%
SASCTUT	AG8-PROVIDER-TUTOR/PRIVATE INSTRUCTOR	341	98.53%	0.00%
SASCVOC	AG8-PROVIDER-VOC/TECH SCHOOL	341	98.53%	0.00%
HOTHNUM	AK2-OTHER TELEPHONE NUMBER IN HH	1,082	98.52%	0.00%
HOWNCEL	AK7-HAS CELLULAR PHONE	1,082	98.52%	0.00%
ADOBMM	AJ1-MONTH OF BIRTH	1,082	98.24%	100.00%
IBWORKMO	AJ12-MONTHS WORKED FOR PAY IN PAST YEAR	1,082	98.24%	0.00%
HFOODST	AK18B-FAMILY RECD FOOD STMPS PAST 12 MO	498	98.19%	0.00%
HWIC	AK18A-FAMILY RECD WIC PAST 12 MO	498	98.19%	0.00%
HCOMPFAX	AK4-HH HAS PHONE NUMBER FOR COMPUTER/FAX	1,082	98.15%	0.00%
IBVOCDIP	AA1OV-RECEIVED VOC/TECH DIPLOMA	213	98.12%	100.00%
HAFDC	AK18C-FAMILY RECD TANF/AFDC PAST 12 MO	498	97.99%	0.00%
AOTHRACE	AJ3-SOME OTHER RACE	94	97.87%	100.00%
HOWNHOME	AK1-OWN, RENT HOME/OTHR ARRANGMNT	1,082	97.87%	0.00%
JOBLOOK	AJ7-LOOKING FOR WORK IN PAST 4 WKS	233	97.85%	0.00%
PAYHRS	AJ14-HOURS PER WEEK WORKED FOR PAY	725	97.79%	0.00%
ADOBYY	AJ1-YEAR OF BIRTH	1,082	97.78%	100.00%
AMOVEAGE	AJ6OV-AGE WHEN MOVED TO U.S.	134	97.76%	0.00%
ASTANDS	AI7B-PROMOTION STANDARD WLD IMPROV EDU	1,082	97.69%	0.00%
HCALLID	AK14-HAS CALLER ID	1,082	97.69%	0.00%

Table 6-4.—Item response rates for items on the Adult Special Study Interview restricted use data file—Continued

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
JOBMORE	AJ13-MORE THAN ONE JOB LAST WEEK	798	97.62%	0.00%
JOBANSAD	AJ8-PLACE OR ANSWERED ADS/SENT RESUME	40	97.50%	0.00%
JOBEMPL	AJ8-CHECKED WITH EMPLOYER DIRECTLY	40	97.50%	0.00%
JOBOTHER	AJ8-SOMETHING ELSE TO FIND WORK	40	97.50%	0.00%
JOBPRIV	AJ8-CHECKED WITH PRIV EMPLOYMENT AGENCY	40	97.50%	0.00%
JOBPUBL	AJ8-CHECKED WITH PUBLIC EMPLMENT AGENCY	40	97.50%	0.00%
JOBREAD	AJ8-READ WANT ADS	40	97.50%	0.00%
JOBREL	AJ8-CHECKED WITH FRIENDS OR RELATIVES	40	97.50%	0.00%
ASWHITE	AK21-WHITE RACE	1,082	97.50%	0.00%
ASBLACK	AK21-BLACK RACE/AFRICAN AMERICAN	1,082	97.50%	0.00%
ASAMIND	AK21-AMERICAN INDIAN/ALASKA NATIVE	1,082	97.50%	0.00%
ASASIAN	AK21-ASIAN RACE	1,082	97.50%	0.00%
ASPACIS	AK21-NATIVE HAWAIIAN/PACIFIC ISLANDER	1,082	97.50%	0.00%
ASRACOT	AK21-OTHER RACE	1,082	97.50%	0.00%
HCELINC	AK8-REPORTED CELLULAR PHONES	475	97.47%	0.00%
WRINCOM	AF16-WK REL CRS THRU DIST ED-COM CONF	39	97.44%	0.00%
WRINEMA	AF16-WK REL CRS THRU DIST ED-E-MAIL	39	97.44%	0.00%
WRINOTH	AF16-WK REL CRS THRU DIST ED-OTHER	39	97.44%	0.00%
WRINSAT	AF16-WK REL CRS THRU DIST ED-SATELLITE	39	97.44%	0.00%
WRINTV	AF16-WK REL CRS THRU DIST ED-TV/RADIO	39	97.44%	0.00%
WRINVID	AF16-WK REL CRS THRU DIST ED-VIDEO CONF	39	97.44%	0.00%
WRINWWW	AF16-WK REL CRS THRU DIST ED-INTERNET	39	97.44%	0.00%
AEVAL	AI7C-TEACHR EVALUATIONS WLD IMPROV EDU	1,082	97.32%	0.00%
ASHISP	AK20-HISPANIC OR LATINO ORIGIN	1,082	97.32%	0.00%
CRPBPR	AD6-PUBLIC OR PRIVATE COLLEGE/UNIV	109	97.25%	0.00%
ASCHLYR	AI7D-LONGER SCHOOL YR WLD IMPROV EDU	1,082	97.13%	0.00%
GIOTPRS	AH2F-OTHER STRUCTURED COURSES	33	96.97%	0.00%
GIOTWRL	AH2E-CAREER OR JOB RELATED COURSES	33	96.97%	0.00%
HCIDSCR	AK15-USES CALLER ID TO SCREEN CALLS	375	96.80%	0.00%
HAMSCR	AK12-USE ANS MACH TO SCREEN CALLS	804	96.64%	0.00%
HCOMPINC	AK5-REPORTED COMPUTER/FAX NUMBER	201	96.52%	0.00%
FSOC	OCCUPATION CODE	798	96.49%	0.00%
ADISCIP	AI7A-STRICT DISCIPLINE WLD IMPROV EDU	1,082	96.30%	0.00%
CRCUREM	AD9-PROV OF SUPPORT CURRENT EMPLOYER	78	96.15%	0.00%
HAMFRQ	AK13-FREQ ANS MACHINE USED TO SCREEN	364	96.15%	0.00%
FSIC	INDUSTRY CODE	798	96.12%	0.00%
HCOMPANS	AK6-WOULD ANSWER COMPUTER/FAX PHONE	201	96.02%	0.00%
CONTREQ	AJ18-REQUIRED CONTINUING EDUCATION	798	95.74%	0.00%
HCIDFRQ	AK16-FREQ CALLER ID USED TO SCREEN	281	95.73%	0.00%
HGOTMSG	AK10-ANSWERING MACHINE MESSAGE	479	95.62%	0.00%
HGOTWIL	AK11-ANS MACH MSG AFFECTED WILLINGNESS	304	94.74%	0.00%
GIHOPUS	AH5-USE HOPE SCHOLARSHIP TAX CREDIT	121	94.21%	0.00%
IBGRAD2	AA1-ACTUAL GRADE 9-11 COMPLETED	86	94.19%	100.00%

Table 6-4.—Item response rates for items on the Adult Special Study Interview restricted use data file—Continued

Variable name	Description	Number eligible	Item response rate	Percent manually imputed
CRPTFT	AD10-PART-TIME OR FULL-TIME STUDENT	165	92.12%	0.00%
GILIFUS	AH4-USE LIFETIME LEARNING TAX CREDIT	79	87.34%	0.00%
JOBTAKE	AJ10-COULD HAVE TAKEN JOB LAST WEEK	58	84.48%	0.00%
HINCMRNG	AK19-TOTAL HH INCOME RANGE	1,082	83.09%	0.00%
BSFMLIT	AC3-ABE/GED PART OF FAMILY LITERACY PRM	11	81.82%	0.00%
EARNAMT	AJ15-EARNINGS	798	79.07%	0.00%
EARNUNT	AJ15-UNIT OF EARNINGS	798	79.07%	0.00%
HINCOME	AK19-TOTAL HH INCOME RANGE	1,082	75.79%	0.00%
HINCMEXT	AK19OV-EXACT HH INC NEAREST $1000	125	52.00%	0.00%
GIOTGED	AH2B-ABE/GED CLASSES	3	33.33%	0.00%
BSWKS	AC6-HOW MANY WEEKS IN ABE/GED CLASSES	0	0.00%	0.00%
ESWKS	AB5-HOW MANY WEEKS IN ESL CLASSES	2	0.00%	100.00%

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

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7. WEIGHTING AND VARIANCE ESTIMATION

Weighting Methodology

The objective of the NHES:1999 is to make inferences about the entire civilian, noninstitutionalized population for the domains of interest. Weighting is necessary to account for differential probabilities of selection and to reduce potential bias due to nonresponse and differential coverage of subpopulations. Although weighting adjustments are aimed at reducing bias, these adjustments typically introduce variation in the weights, which increases the variances of survey estimates. Care was taken in the development and implementation of the weighting methodology to balance the bias reductions against the potential increases in variance.

Although only telephone households were sampled, the estimates were adjusted to totals of persons living in both telephone and nontelephone households derived from the Current Population Survey (CPS). Totals of the number of persons adjusted to account for undercoverage are available from the 1990 decennial Census. Beginning in 1994, the CPS weights were adjusted to these totals. Any additional undercoverage in the Census of various groups, such as the homeless, remains in the totals obtained from the CPS.

The full sample weight to be used for analysis of the Parent Interview file is FPWT. For the Youth Interview file, the full sample weight is FYWT. For the Adult Education Interview file, the full sample weight is FAWT. For the Adult Special Study Interview file, the full sample weight is SSFAWT.

The weighting procedures are described briefly below.

Household-Level Weights

The primary purpose of the Screener in the NHES:1999 was to provide information required to assess the eligibility of household members for an extended interview. A secondary purpose was to provide household-level characteristics required to compute household-level weights. Household-level information that is of analytic interest was collected during the extended interview. Thus, household-level weights were calculated solely for use as a basis for computing person-level weights for the analysis of the extended interview data.

The household-level weight was the product of five factors:

(1) the weight associated with the oversampling of telephone numbers in high-minority exchanges (A_j);

(2) the weight associated with the subsampling of nonmailable, no answer cases (B_j);

(3) the weight associated with Screener nonresponse (C_j);

(4) the weight associated with the number of telephone numbers in a household (D_j); and

(5) a poststratification adjustment to compensate for the fact that only telephone households were eligible for the NHES:1999 survey (E_j).

With the exception of the poststratification adjustment, both the main study sample and the Adult Special Study sample were included in the computations of these weighting factors. The Screener response rates for the two samples were similar. Special steps would have been taken if there were indications that the response rates for these subsamples were very different.

The procedures for computing the household-level weights are given below.

1. The RDD sampling method used for the NHES:1999 is a list-assisted method described by Brick et al. (1994). This basic method was also used in the NHES:1995 and the NHES:1996. The method used for NHES:1999 was a single stage sample where telephone numbers were sampled from strata defined by minority status of the exchange. Telephone numbers in high-minority exchanges were sampled at a rate twice that of those in low-minority exchanges. Therefore, households in the low minority stratum were given a weighting factor $A_j = 2$. Households in the high minority stratum were assigned an adjustment factor $A_j = 1$.

2. During data collection, no answer cases without mailable addresses were subsampled for refielding; only a 50 percent subsample of such cases was refielded. The second weighting factor adjusts for the subsampling of nonmailable no answer cases. Nonmailable no answer cases that were selected to be refielded were given a weighting factor $B_j = 2$. The nonmailable no answer cases that were subsampled out were given a weighting factor $B_j = 0$. For each sampled telephone number *j*, the unadjusted weight, UHW_j, can be written as $UHW_j = A_j * B_j$.

3. The third weighting factor adjusts for households that did not respond to the NHES:1999 Screener. Each sampled telephone number was classified as either a respondent *(R)*, a nonrespondent *(NR)*,[15] or an ineligible case *(I)*. The base weights of

[15] The residency status of telephone numbers that finalized with Screener dispositions of no answer or no answer-answering machine was unresolved. Based on the business office approach to response rate estimation (described in chapter 5), 40.5 percent of these cases were assumed to be residential; thus, for these cases, 40.5 percent of the weight was retained and these cases were treated as nonrespondents. Subsequent research using a survival method to response rate estimation (also described in chapter 5) revealed that the residency rate for these cases is much lower (less than 1 percent). However, the effects of using the lower residency rate on the weighting would have been negated during the poststratification adjustment of the household weight.

the nonrespondent cases were distributed to the base weights of the respondent cases within a nonresponse adjustment cell. A CHAID analysis (described in chapter 5) was used to identify characteristics most associated with Screener nonresponse. The characteristics considered included all the characteristics used for Screener nonresponse adjustment for the NHES:1995. (The household weights were not adjusted for Screener nonresponse in the NHES:1996.) These characteristics, which were primarily geographic characteristics, were used to form the cells for nonresponse adjustment of the household weights. Table 7-1 contains the cells used for Screener nonresponse adjustment in the NHES:1999, along with the estimated Screener response rate for each cell. The nonresponse adjustment factor, $C_{j(c)}$, applied to each respondent j in adjustment cell c is

$$C_{j(c)} = \frac{\sum_{h \in R_c \cup NR_c} UHW_h}{\sum_{h \in R_c} UHW_h} .$$

4. A weighting factor of unity was assigned to households reporting one telephone number in the household. An adjustment factor of 1/2 was assigned to households with more than one residential telephone number.[16] Technically, if the other telephone number(s) of households with multiple residential telephone numbers is in the zero-listed stratum, the household should get a weight adjustment of 1. However, looking up the other numbers to determine their listed status is impractical, and the percent of such numbers in the zero-listed stratum is small. Let

   $D_j = \frac{1}{2}$ if household j has more than one telephone number, and

   $D_j = 1$ if household j has one telephone number.

   If a household was sampled twice through two different telephone numbers, only one of the telephone numbers was kept in the sample. (There was one such household in the NHES:1999 sample.) The telephone number that was not kept was assigned a Screener result code indicating that it is a duplicate. The interview that was kept has D_j set equal to unity, to reflect that it was sampled twice.

   Thus, the nonresponse adjusted household weight, adjusted for multiple residential telephone numbers in the household, is

   $$UHW_j ¢ = A_j \bullet B_j \bullet C_{j(c)} \bullet D_j .$$

[16] The weight could be modified by a factor equal to the reciprocal of the number of residential telephone numbers in the household, but the adjustment by a factor of 2 is thought to be somewhat better. Massey and Botman (1988) comment on this adjustment.

Table 7-1.—NHES:1999 Screener nonresponse adjustment cells

Cell	Mailing sent	Answering machine message indicator	Median home value	Listed phone number	Metro status	Census region	Percent Hispanic	Percent college grads	Percent renters	Estimated response rate (percent)*
1	1	0		1		1			0,1,2,3	86
2	1	0		1		2			0,1,2,3	89
3	1	0		1	1,2	3			0,1,2,3	85
4	1	0		1	3	3			0,1,2,3	88
5	1	0		1	4,5	3			0,1,2,3	89
6	1	0		1		4			0,1,2,3	89
7	1	0		2	1,2,3,4	1,2			0,1,2,3	80
8	1	0		2	1,2,3,4	3,4			0,1,2,3	84
9	1	0		2	5				0,1,2,3	87
10	1	0	0,1,2,3,4	1				0,1	4	85
11	1	0	0,1,2,3,4	1				2	4	89
12	1	0	0,1,2,3,4	1				0,1,2	5	84
13	1	0	5,6,7,8,9	1				0,1,2	4,5	82
14	1	0		1	1			3,4,5,6,7,8	4,5	87
15	1	0		1	2,3,4,5			3,4,5,6,7,8	4,5	92
16	1	0		2					4,5	82
17	1	0							6	80
18	1	0				1			7,8,9	74
19	1	0				2,3,4			7,8,9	80
20	1	1	0,1		1					76
21	1	1	0,1		2,3,4,5					83
22	1	1	2,3,4,5				0,1			79
23	1	1	2,3,4,5				2,3,4,5,6,7,8,9			73
24	1	1	6,7				0	0,1,2		75
25	1	1	6,7				1,2,3,4,5,6,7,8,9	0,1,2		67
26	1	1	6,7					3,4,5,6,7,8		77
27	1	1	8,9							71
28	2		0		1					67
29	2		0		2,3,4,5					77
30	2	0	1,2,3,4	1						84
31	2	1	1,2,3,4	1						72
32	2		1,2,3,4	2		1				66
33	2		1,2,3,4	2		2,3			0,1,2,3,4,5	70
34	2		1,2,3,4	2		2,3			6,7,8,9	63
35	2		1,2,3,4	2		4				72
36	2		5	1						75
37	2	0	5	2		1,2				56
38	2	0	5	2		3				62
39	2	1	5	2		1,2,3				66
40	2		5	2		4				70
41	2	0	6,7	1						80
42	2	1	6,7	1						69
43	2		6,7	2				0,1		68
44	2		6,7	2				2,3		61
45	2	0	6,7	2				4,5,6,7,8		54

Table 7-1.—NHES:1999 Screener nonresponse adjustment cells–Continued

Cell	Mailing sent	Answering machine message indicator	Median home value	Listed phone number	Metro status	Census region	Percent Hispanic	Percent college grads	Percent renters	Estimated response rate (percent)*
46	2	1	6,7	2				4,5,6,7,8		62
47	2		8	1						72
48	2		8	2		1,2,3		0,1,2		60
49	2	0	8	2		1,2,3		3,4,5,6,7,8		48
50	2	1	8	2		1,2,3		3,4,5,6,7,8		58
51	2		8	2		4				63
52	2		9	1						69
53	2	0	9	2		1,2,3				39
54	2	1	9	2		1,2,3				57
55	2	0	9	2		4				56
56	2	1	9	2		4				60
57	3,4		0,1							79
58	3,4		2,3							75
59	3,4		4,5,6,7							68
60	3,4		8,9							62

*The estimated response rate is the number of completed interviews divided by the sum of the number of completed interviews, nonresponses, and 40.5 percent of the unresolved telephone numbers, weighted by the probability of selection.

Category codes:

Mailing Sent: 1 = mailable address, mailing sent; 2 = no mailable address; 3 and 4 = mailable address but mailing was returned.

Answering Machine Message Status: 0 = no answering machine messages left; 1 = at least one message left.

Median Home Value: 0 = below the 10th percentile in sample, 1 = 10th to 19th percentile in sample, 2 = 20th to 29th percentile in sample, 3 = 30th to 39th percentile in sample, 4 = 40th to 49th percentile in sample, 5 = 50th to 59th percentile in sample, 6 = 60th to 69th percentile in sample, 7 = 70th to 79th percentile in sample, 8 = 80th to 89th percentile in sample, 9 = 90th percentile in sample or higher.

Listed Phone Number: 1 = listed residential; 2 = not listed.

Metro Status: 1 = in county in central city, 2 = in county not in central city, 3 = subcounty of MSA. 4 = MSA in its own county, 5 = not MSA.

Census Region: 1 = Northeast, 2 = Midwest, 3 = South, 4 = West.

Percent Hispanic: 0 = less than 10 percent, 1 = 10 to 19 percent, 2 = 20 to 29 percent, 3 = 30 to 39 percent, 4 = 40 to 49 percent, 5 = 50 to 59 percent, 6 = 60 to 69 percent, 7 = 70 to 79 percent, 8 = 80 to 89 percent, 9 = 90 percent or more.

Percent College Graduates: 0 = less than 10 percent, 1 = 10 to 19 percent, 2 = 20 to 29 percent, 3 = 30 to 39 percent, 4 = 40 to 49 percent, 5 = 50 to 59 percent, 6 = 60 to 69 percent, 7 = 70 to 79 percent, 8 = 80 to 89 percent, 9 = 90 percent or more.

Percent Renters: 0 = less than 10 percent, 1 = 10 to 19 percent, 2 = 20 to 29 percent, 3 = 30 to 39 percent, 4 = 40 to 49 percent, 5 = 50 to 59 percent, 6 = 60 to 69 percent, 7 = 70 to 79 percent, 8 = 80 to 89 percent, 9 = 90 percent or more.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

5. The final step in computing the household weight was to adjust UHW_j' to known national control totals in order to account for household-level undercoverage due to sampling only telephone households. Poststratification was used to accomplish this task. Poststratification ensures that survey weights sum to known population totals. The characteristics used in poststratification were Census region and presence of children under 18 years of age. Table 7-2 presents the control totals used for poststratifying the household-level weights. The variables used in poststratification were chosen to address differences in coverage rates with respect to region in which the household is located and presence of children in the household. The control totals for poststratification were obtained from the March 1998 Current Population Survey (CPS). The poststratification adjustment was computed for the Main Study sample and the Adult Special Study sample separately, so that both samples would be weighted up to national totals of the number of households.

   The final household-level weight for household *j*, HHW_j, is given by

$$HHW_j = UHW_j ¢• E_{j(d)},$$

   where $E_{j(d)}$ is the poststratification adjustment factor described above for adjustment cell *d*, where household *j* has the attributes corresponding to poststratification cell *d*.

Table 7-2.—Control totals for poststratifying the NHES:1999 household-level weights

Census region	Children under 18 in household	Control total
Northeast	Yes	6,874,618
Northeast	No	12,946,397
South	Yes	13,725,789
South	No	22,870,844
Midwest	Yes	8,974,914
Midwest	No	15,284,737
West	Yes	8,587,220
West	No	13,319,699
TOTAL		102,584,218

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), March 1998. (Independent tabulations.)

Person-Level Weights for the Parent Interview

As described in chapter 2, a sampling algorithm was used to limit the number of persons sampled in each household while maintaining the sampling rates required to attain the target sample sizes. The sampling was based on information collected in the Screener interview from the adult household member who responded to the Screener, and the eligibility of the sampled children was later verified or updated when the parent/guardian most knowledgeable about the child responded to the Parent Interview.

Because sampling eligibility was defined in terms of the data collected in the Screener, the weighting procedures were developed with possible misclassification taken into account so that the estimates would not incur bias due to misclassification. The following discussion describes the development of the person-level weights for the Parent Interview.

The household-level weight was used as the base weight for the Parent Interview weight. The Parent Interview weight for sampled child k in household j, $PW_{k,}$[17] is the product of the household weight and four weight adjustment factors:

(1) the weight associated with sampling the child's domain in the given household (A_{jk});

(2) the weight associated with sampling the child from among all eligible children in the given domain in the household (B_{jk});

(3) the weight associated with Parent Interview nonresponse (C_k); and

(4) the adjustment associated with raking the person-level weights for the Parent Interview to Census Bureau estimates of the number of children (D_k).

The procedures for computing the person-level weight adjustments from the Parent Interview are given below.

1. The first step in developing the person-level weights for the Parent Interview was to account for the probability of sampling the child's domain in the given household. Table 7-3 gives the weighting factors used to adjust for the probability of sampling each domain. For example, if there was one preschooler, one younger child (enrolled in kindergarten through 5th grade), and one older child (enrolled in 6th through 12th grade), then the preschooler was sampled with certainty and either the younger child or the older child was sampled, with each of these domains assigned a probability of 0.5; the domain sampling adjustment factor for the preschooler was one, and the factor for either the younger or older child (whichever was sampled) was 2.

2. The second adjustment accounted for the probability of sampling child k from among all eligible children in the given domain in household j. The adjustment is

$$B_{jk} = N_{jk},$$

where N_{jk} is the number of children in household j in the same sampling domain as child k.

[17] The household subscript j is suppressed here for ease of presentation.

For each sampled child *k*, the unadjusted person-level weight, UPW_k, can be written as the product of the household-level weight and these two adjustments:

$$UPW_k = HHW_j \bullet A_{jk} \bullet B_{jk}.$$

3. The next step was to adjust for parents/guardians who did not respond to the Parent Interview. Each Parent Interview case was classified as either a respondent *(R)* or a nonrespondent *(NR)*, depending on whether or not the parent/guardian responded to the Parent interview for the sampled child. The unadjusted parent weights *(UPW)* of the nonrespondents were distributed to the unadjusted parent weights of the respondents within a nonresponse adjustment cell. The nonresponse adjustment cells were created using age/grade combinations: age 0, age 1, age 2, preschool, kindergarten, and grade 1 through grade 12; enrolled children with no grade equivalent were included in the cell containing the modal grade for their age. (See table 7-4 for a list of Parent Interview nonresponse adjustment cells.) The nonresponse adjustment factor, $C_{k(c)}$, applied to each respondent *k* in adjustment cell *c* is

$$C_{k(c)} = \frac{\sum_{h \in R_c \cup NR_c} UPW_h}{\sum_{h \in R_c} UPW_h}.$$

Thus, for each sampled child *k*, the nonresponse-adjusted person-level Parent Interview weight, NPW_k, can be written as

$$NPW_k = UPW_k \bullet C_{k(c)}.$$

Extreme weights may occasionally result when households or persons are sampled at very different rates. Additionally, the procedures used for nonresponse adjustment, poststratification, and raking may contribute to extreme weights. A few unexpectedly large sampling weights can seriously inflate the variance of the survey estimates. Thus, for a very small number of records, weight trimming procedures may be used to reduce the impact of such large weights on the estimates produced from the sample. Weight trimming refers to the process of artificially adjusting a few extreme weights to reduce their impact on the weighted estimates.

The variability in the nonresponse adjusted Parent Interview weights was examined to determine whether trimming would be desired. The variability was not sufficient to justify trimming.

4. The final stage of weighting for the Parent Interview involved raking the nonresponse-adjusted person-level weights, *NPW*, to national control totals. Raking was proposed by Deming and Stephan (1940) as a way to ensure consistency between complete counts and sample data from the 1940 U.S. Census of population. The raking procedure typically improves the reliability of survey estimates, and also corrects for the bias due to households or persons not covered by the survey, e.g. households without telephones and households with unlisted telephone numbers belonging to zero-listed telephone banks. The raking procedure is carried out in a sequence of adjustments: first, the base weights are adjusted to one marginal distribution (or

dimension) and then the second marginal distribution, and so on. One sequence of adjustments to the marginal distributions is known as a cycle or iteration. The procedure is repeated until convergence of weighted totals is achieved.

This additional raking adjustment, following the household-level poststratification adjustment, is required because the Parent Interview involves new eligibility criteria and a new level of sampling. That is, although the household-level poststratification adjustment aligned the weighted totals of the household weights with the household level control totals, the raking of the Parent Interview weights is required in order to align the person-level Parent Interview weights with the person-level control totals and adjust for differential coverage rates at the person level.

The three raking dimensions were a cross between race/ethnicity of the child (black, non-Hispanic/Hispanic/other) and household income categories ($10,000 or less/$10,001-$25,000/$25,001 or more), a cross of Census region (Northeast/South/Midwest/West) and urbanicity (urban/rural), and a cross of home tenure (rent/own or other) and age or grade of child (with those enrolled in school but having no grade equivalent assigned to the modal grade for their age; that is, they were assigned to the grade that most children their age were enrolled in). These raking dimensions were used because they include important analysis variables (e.g., grade) and characteristics that have been shown to be associated with telephone coverage (e.g., race/ethnicity).

The control totals were obtained using the percentage distributions from the October 1997 CPS and the total number of children from the March 1998 CPS. The October 1997 CPS contains variables not available on the March 1998 CPS, but the totals in the latter are more current. In the procedure used in the NHES:1999, the control total for a raking cell is the proportion in that cell from the October 1997 CPS multiplied by the estimate of the total number of children from the March 1998 CPS. Table 7-5 shows the control totals used for raking the Parent Interview weights. The raking iterations were continued until the estimated totals were within 1 of all the control totals.

The final Parent Interview weight for each sampled child *k* is

$$PW_k = NPW_k \bullet D_{k(d)},$$

where $D_{k(d)}$ is the raking adjustment factor for raking cell *d*, where child *k* has the attributes corresponding to the levels of the three dimensions of raking cell *d*.

Person-Level Weights for the Youth Interview

A Youth Interview was attempted with each sampled child age 20 or less enrolled in grades 6 through 12 if and only if the Parent Interview for that child had been completed. Youth who did not live with a parent/guardian or with an adult at least 12 years older than the sampled youth were declared ineligible for the Youth Interview. This section describes the development of the person-level weights for the Youth Interview.

Table 7-3.—Weighting factors to account for domain sampling for children

Household composition (number of children)				Domain sampling adjustment factor			
Infants	Preschoolers	Elementary schoolers	Secondary schoolers	Infant	Preschooler	Elementary schooler	Secondary schooler
0.....	0	0	1 or more	—	—	—	1.0000
0	0	1 or more	0	—	—	1.0000	—
0	0	1 or more	1 or more	—	—	1.0000	1.0000
0	1 or more	0	0	—	1.0000	—	—
0	1 or more	0	1 or more	—	1.0000	—	1.0000
0	1 or more	1 or more	0	—	1.0000	1.0000	—
0	1 or more	1 or more	1 or more	—	1.0000	2.0000	2.0000
1 or more.....	0	0	0	1.1481	—	—	—
1 or more.....	0	0	1 or more	1.1481	—	—	1.0000
1 or more.....	0	1 or more	0	1.1481	—	1.0000	—
1 or more.....	0	1 or more	1 or more	2.2962	—	1.0000	1.0000
1 or more.....	1 or more	0	0	1.1481	1.0000	—	—
1 or more.....	1 or more	0	1 or more	2.2962	1.0000	—	1.0000
1 or more.....	1 or more	1 or more	0	2.2962	1.0000	1.0000	—
1 or more.....	1 or more	1 or more	1 or more	2.2962	1.0000	2.0000	2.0000

— indicates that factor is not applicable because there are no children in the domain in the household.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

The Youth Interview weight for sampled youth *k*, YW_k, used the final person-level weight for the Parent Interview, PW_k, as the base weight. Two weight adjustments were made to produce the person-level weight for the Youth Interview:

(1) the adjustment associated with Youth Interview nonresponse (A_k); and

(2) the adjustment associated with raking the Youth Interview weights to Census Bureau estimates of the number of youth (B_k).

The procedures for computing the Youth Interview weights are given below.

1. The first weight adjustment to *PW* adjusts for sampled youth for whom the Parent Interview was completed but the Youth Interview was not completed. Each sampled youth with a completed Parent Interview was classified as either a respondent (*R*) or a nonrespondent (*NR*) to the Youth Interview. The weights of the nonrespondents were distributed to the weights of the respondents within a nonresponse adjustment cell (see table 7-6). Adjustment cells were created for each grade of 6 through 12; enrolled children with no grade equivalent were included in the cell containing the modal grade for their age. The nonresponse adjustment factor, $A_{k(c)}$, applied to each respondent *k* in adjustment cell *c* is

$$A_{k(c)} = \frac{\sum_{h \in R_c \cup NR_c} PW_h}{\sum_{h \in R_c} PW_h}$$

Thus, for each sampled youth with a completed Parent Interview, the nonresponse adjusted Youth Interview weight, NYW_k, can be written as

$$NYW_k = PW_k \bullet A_{k(c)}.$$

Extreme weights may occasionally result when households or persons are sampled at very different rates. Additionally, the procedures used for nonresponse adjustment, poststratification, and raking may contribute to extreme weights. A few unexpectedly large sampling weights can seriously inflate the variance of the survey estimates. Thus, for a very small number of records, weight trimming procedures may be used to reduce the impact of such large weights on the estimates produced from the sample. Weight trimming refers to the process of artificially adjusting a few extreme weights to reduce their impact on the weighted estimates.

The variability in the nonresponse adjusted Youth Interview weights was examined to determine whether trimming would be desired. The variability was not sufficient to justify trimming.

2. The final step was to adjust *NYW* to national control totals using a raking procedure. Three dimensions were used for raking the Youth Interview weights. Raking was proposed by Deming and Stephan (1940) as a way to ensure consistency between complete counts and sample data from the 1940 U.S. Census of population. The raking procedure typically improves the reliability of survey estimates, and also corrects for the bias due to households or persons not covered by the survey, e.g. households without telephones and households with unlisted telephone numbers belonging to zero-listed telephone banks. The raking procedure is carried out in a sequence of adjustments: first, the base weights are adjusted to one marginal distribution (or dimension) and then the second marginal distribution, and so on. One sequence of adjustments to the marginal distributions is known as a cycle or iteration. The procedure is repeated until convergence of weighted totals is achieved.

   The first dimension was a cross between race/ethnicity of the child (black, non-Hispanic/Hispanic/other) and household income categories ($10,000 or less/$10,001-$25,000/$25,001 or more); the second dimension was a cross of Census region (Northeast/South/Midwest/West) and urbanicity (urban/rural); and the third dimension was a cross of home tenure (rent/own or other) and grade of the youth. These variables were selected because they were available from existing sources and are correlated with coverage loss from telephone sampling and response propensity. These variables were used to rake the NHES:1996 Youth Interview weights. The same variables were also used for raking 9- and 10-year-olds in the NHES:1995 Early Childhood Program Participation (ECPP) component, except that age was used in the NHES:1995 ECPP, while grade was used here. The dimensions and control totals are listed in table 7-7.

   The control totals of the number of youth were obtained by allocating the estimate of the total number of youth from the March 1998 CPS to the October 1997 CPS distributions. In other words, the control total for a raking cell is the proportion in that cell from the October 1997 CPS multiplied by the estimate of the total from the March 1998 CPS. This allocation is necessary because the raking dimensions use items that are only available in the October CPS while the number of children obtained from the March 1998 CPS is more accurate since it is closer in time to the 1999 survey date. Note that

although the same variables were used in raking the Parent and Youth Interview weights, the control totals for the two were different. This was due to the difference in age eligibility for the two components. The raking iterations were continued until the estimated totals were within 1 of all the control totals.

The final person-level weight for the Youth Interview is

$$YW_k = NYW_k \bullet B_{k(d)} ,$$

where $B_{k(d)}$ is the raking adjustment factor for raking cell d, where child k has the attributes corresponding to the levels of the three dimensions of raking cell d.

Table 7-4.—NHES:1999 Parent Interview nonresponse adjustment cells

Explanatory variables: Age or grade/equivalent from Screener	Number of respondents in cell	Completion rate (percent)
Age 0	1,128	93.4
Age 1	1,085	92.0
Age 2	1,165	90.8
Unenrolled (ages 3 through 5)/nursery school/prekindergarten/Head Start	3,459	90.4
Kindergarten/transitional kindergarten/pre-1st grade	1,581	91.2
1st grade or equivalent	1,459	89.6
2nd grade or equivalent	1,392	88.2
3rd grade or equivalent	1,403	89.7
4th grade or equivalent	1,377	90.3
5th grade or equivalent	1,403	89.4
6th grade or equivalent	1,307	89.7
7th grade or equivalent	1,407	90.2
8th grade or equivalent	1,374	90.4
9th grade or equivalent	1,377	90.3
10th grade or equivalent	1,259	88.6
11th grade or equivalent	1,229	90.2
12th grade or equivalent	1,195	87.2

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Table 7-5.—Control totals for raking the NHES:1999 person-level Parent Interview weights

Race/ethnicity of child	Household income	Control total
Black, non-Hispanic	$10,000 or less	3,266,822
Black, non-Hispanic	$10,001-$25,000	3,670,239
Black, non-Hispanic	$25,001 or more	4,291,060
Hispanic	$10,000 or less	2,369,575
Hispanic	$10,001-$25,000	4,395,980
Hispanic	$25,001 or more	4,074,109
Other	$10,000 or less	3,534,461
Other	$10,001-$25,000	7,694,716
Other	$25,001 or more	38,951,280
Census region	**Urbanicity**	**Control total**
Northeast	Urban	11,647,153
Northeast	Rural	3,112,524
South	Urban	17,039,345
South	Rural	7,782,019
Midwest	Urban	12,424,450
Midwest	Rural	4,908,814
West	Urban	13,226,039
West	Rural	2,107,898
Home tenure	**Age/grade of child**	**Control total**
Rent	Age 0	1,631,853
Rent	Age 1	1,647,456
Rent	Age 2	1,563,092
Rent	Age 3-6, not enrolled	1,908,434
Rent	Nursery/preschool/Head Start	1,527,384
Rent	Transitional kindergarten/ kindergarten/pre-1st grade	1,485,570
Rent	1st grade	1,689,976
Rent	2nd grade	1,363,467
Rent	3rd grade	1,442,195
Rent	4th grade	1,213,289
Rent	5th grade	1,258,129
Rent	6th grade	1,259,293
Rent	7th grade	1,127,283
Rent	8th grade	1,081,496
Rent	9th grade	1,170,347
Rent	10th grade	1,094,704
Rent	11th grade	913,607
Rent	12th grade	919,125
Own or other	Age 0	2,253,010
Own or other	Age 1	2,288,726
Own or other	Age 2	2,270,693
Own or other	Age 3-6, not enrolled	2,157,114
Own or other	Nursery/preschool/Head Start	2,988,861
Own or other	Transitional kindergarten/ kindergarten/pre-1st grade	2,490,185

Table 7-5.—Control totals for raking the NHES:1999 person-level Parent interview weights—Continued

Home tenure	Age/grade of child	Control total
Own or other	1st grade	2,824,870
Own or other	2nd grade	2,643,794
Own or other	3rd grade	2,661,986
Own or other	4th grade	2,789,842
Own or other	5th grade	2,813,686
Own or other	6th grade	2,757,231
Own or other	7th grade	2,890,037
Own or other	8th grade	2,730,898
Own or other	9th grade	2,878,147
Own or other	10th grade	2,917,967
Own or other	11th grade	2,754,259
Own or other	12th grade	2,840,236
TOTAL		72,248,242

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), October 1997 and March 1998. (Independent tabulations.)

Table 7-6.—NHES:1999 Youth Interview nonresponse adjustment cells

Explanatory variable: grade/equivalent from Parent Interview	Number of respondents in cell	Completion rate (percent)
6th grade or equivalent	1,112	85.1
7th grade or equivalent	1,223	87.3
8th grade or equivalent	1,197	87.8
9th grade or equivalent	1,196	85.9
10th grade or equivalent	1,094	87.2
11th grade or equivalent	1,052	87.1
12th grade or equivalent	1,039	87.2

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Table 7-7.—Control totals for raking the NHES:1999 person-level Youth Interview weights

Race/ethnicity of child	Household income	Control total
Black, non-Hispanic	$10,000 or less	1,235,980
Black, non-Hispanic	$10,001-$25,000	1,388,610
Black, non-Hispanic	$25,001 or more	1,623,494
Hispanic	$10,000 or less	896,513
Hispanic	$10,001-$25,000	1,663,189
Hispanic	$25,001 or more	1,541,411
Other	$10,000 or less	1,337,239
Other	$10,001-$25,000	2,911,243
Other	$25,001 or more	14,736,951
Census region	**Urbanicity**	**Control total**
Northeast	Urban	4,406,621
Northeast	Rural	1,177,602
South	Urban	6,446,720
South	Rural	2,944,274
Midwest	Urban	4,700,706
Midwest	Rural	1,857,216
West	Urban	5,003,982
West	Rural	797,509
Home tenure	**Grade of child**	**Control total**
Rent	6th	1,259,293
Rent	7th	1,127,283
Rent	8th	1,081,496
Rent	9th	1,170,347
Rent	10th	1,094,704
Rent	11th	913,607
Rent	12th	919,125
Own or other	6th	2,757,231
Own or other	7th	2,890,037
Own or other	8th	2,730,898
Own or other	9th	2,878,147
Own or other	10th	2,917,967
Own or other	11th	2,754,259
Own or other	12th	2,840,236
TOTAL		27,334,630

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), October 1997 and March 1998. (Independent tabulations.)

Person-Level Weights for the Adult Education Interview

As described in chapter 2, a sampling algorithm was used to limit the number of persons sampled in each household while maintaining the sampling rates required to attain the target sample sizes. The sampling was based on information collected in the Screener interview from the adult household member who responded to the Screener. An eligible adult was defined to be a person 16 years of age or older who is not enrolled in 12th grade or below and is not on active duty in the U.S. Armed Forces. This section describes the development of the person-level weights for the Adult Education Interview.

The household-level weight was used as the base weight for the Adult Education Interview weight. The Adult Education Interview weight for sampled adult k in household j, AW_k, is the product of the household weight and four weight adjustment factors:

(1) the weight associated with sampling the adult domain in the given household (A_{jk});

(2) the weight associated with sampling the adult from among all eligible adults in the household (B_{jk});

(3) the weight associated with Adult Education Interview nonresponse (C_k); and

(4) the adjustment associated with raking the person-level weights for the Adult Education Interview to Census Bureau estimates of the number of adults (D_k).

The procedures for computing the person-level weight adjustments from the Adult Education Interview are given below.

1. The first adjustment, A_{jk}, was to account for the probability of sampling the adult domain in the given household. Table 7-8 gives the weighting factors used to account for the probability of sampling the adult domain, based on the household composition. For example, if there were no eligible children in the household and there were two eligible adults—one adult education participant and one nonparticipant—then an adult was sampled with probability 0.258. In such an example, if an adult was sampled, then the domain sampling adjustment factor for that adult was 3.876, which is the reciprocal of the probability of sampling the adult domain.

Table 7-8.—Weighting factors to account for domain sampling for adults

Household composition				Domain sampling adjustment factor
Number of eligible children in household	Number of adults in household			
	Total adults	Adult education participants	Adult education non-participants	
0	1	1	0	3.8760
0	1	0	1	15.5039
0	2	0	2	5.1680
0	2	1 or more	0 or more	3.8760
0	3 or more	0	3 or more	3.8760
0	3 or more	1 or more	0 or more	3.8760
1 or more	1	1	0	7.7519
1 or more	1	0	1	30.9598
1 or more	2	0	2	10.3306
1 or more	2	1 or more	0 or more	7.7519
1 or more	3 or more	0	3 or more	7.7519
1 or more	3 or more	1 or more	0 or more	7.7519

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

2. The second adjustment, B_{jk}, accounted for the probability of sampling adult k from among all eligible adults in household j. Persons identified by the Screener respondent as adult education participants were given twice the probability of selection of persons identified as nonparticipants. The adjustment had the form

$$B_{jk} = \begin{cases} 2p_j + n_j, & \text{If adult } k \text{ was sampled as an adult education nonparticipant} \\ p_j + 0.5n_j, & \text{If adult } k \text{ was sampled as an adult education participant,} \end{cases}$$

where p_j is the number of adult education participants in household j and n_j is the number of adult education nonparticipants in household j.

In the above example, the adult education participant had a probability of selection equal to two-thirds, and the adult education nonparticipant had a probability of selection equal to one-third. If the adult education participant was selected, then the adjustment factor was 1.5; if the adult education nonparticipant was sampled, then the adjustment factor was 3.

For each sampled adult k, the unadjusted person-level Adult Education Interview weight, $UAWk$, can be written as the product of the household-level weight and these two adjustments:

$$UAW_k = HHW_j \bullet A_{jk} \bullet B_{jk}.$$

3. The next step was to adjust for adults who did not respond to the Adult Education Interview. Each sampled adult was classified as either a respondent (R) or a nonrespondent (NR), depending on whether or not the adult completed the Adult Education Interview. The unadjusted Adult Education Interview weights (UAW) of the nonrespondents were distributed to the unadjusted Adult Education Interview weights of

the respondents within a nonresponse adjustment cell. Three variables were used to create the nonresponse adjustment cells. The first was the sex of the adult, the second was the adult education participation status of the adult (as reported by the Screener respondent), and the third was an indicator of whether the sampled adult was the Screener respondent. These variables were used because they are available for all sampled adults (both respondents and nonrespondents) and are associated with Adult Education Interview response propensity. (See table 7-9 for a list of Adult Education Interview nonresponse adjustment cells.) The nonresponse adjustment factor, $C_{k(c)}$, applied to each respondent k in adjustment cell c is

$$C_{k(c)} = \frac{\sum_{h \in R_c \cup NR_c} UAW_h}{\sum_{h \in R_c} UAW_h}$$

Table 7-9.—NHES:1999 Adult Education Interview nonresponse adjustment cells

Explanatory variables: Sex/adult education participation status (from Screener)/indicator of whether sampled adult was the Screener respondent	Number of respondents in cell	Completion rate (percent)
Female/adult education participant/Screener respondent	1,742	94.6
Female/adult education participant/not Screener respondent	550	80.3
Female/adult education nonparticipant/Screener respondent	1,129	89.2
Female/adult education nonparticipant/not Screener respondent	408	69.4
Male/adult education participant/Screener respondent	1,038	95.2
Male/adult education participant/not Screener respondent	623	79.1
Male/adult education nonparticipant/Screener respondent	711	87.8
Male/adult education nonparticipant/not Screener respondent	496	64.3

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Thus, for each sampled adult k, the nonresponse-adjusted, person-level Adult Education Interview weight, NAW_k, can be written as

$$NAW_k = UAW_k \bullet C_{k(c)}.$$

Extreme weights may occasionally result when households or persons are sampled at very different rates. Additionally, the procedures used for nonresponse adjustment, poststratification, and raking may contribute to extreme weights. A few unexpectedly large sampling weights can seriously inflate the variance of the survey estimates. Thus, for a very small number of records, weight trimming procedures may be used to reduce the impact of such large weights on the estimates produced from the sample. Weight trimming refers to the process of artificially adjusting a few extreme weights to reduce their impact on the weighted estimates.

The nonresponse-adjusted Adult Education Interview weights, *NAW*, were examined, and the amount of variability in the weights was greater than desired due to the earlier stages of weighting. To reduce the variability in the final weights, the weights were trimmed prior to raking. The means of the nonresponse-adjusted Adult Education Interview weights for adults sampled as participants and those sampled as nonparticipants were 20,180 and 33,146, respectively. In all, 40 weights were trimmed: for 22 persons sampled as adult education participants with nonresponse adjusted Adult

Education weights in excess of 100,000; and for 18 persons sampled as adult education nonparticipants with nonresponse-adjusted Adult Education weights in excess of 150,000. The trimmed nonresponse-adjusted Adult Education interview weight is denoted *NAW′*.

4. The final stage of weighting for the Adult Education Interview involved raking the trimmed nonresponse-adjusted, person-level weights, *NAW′*, to national control totals. Raking was proposed by Deming and Stephan (1940) as a way to ensure consistency between complete counts and sample data from the 1940 U.S. Census of population. The raking procedure typically improves the reliability of survey estimates, and also corrects for the bias due to households or persons not covered by the survey, e.g. households without telephones and households with unlisted telephone numbers belonging to zero-listed telephone banks. The raking procedure is carried out in a sequence of adjustments: first, the base weights are adjusted to one marginal distribution (or dimension) and then the second marginal distribution, and so on. One sequence of adjustments to the marginal distributions is known as a cycle or iteration. The procedure is repeated until convergence of weighted totals is achieved.

   This additional raking adjustment, following the household-level poststratification adjustment, is required because the Adult Education Interview involves new eligibility criteria and a new level of sampling. That is, although the household-level poststratification adjustment aligned the weighted totals of the household weights with the household level control totals, the raking of the Adult Education Interview weights is required in order to align the person-level Adult Education Interview weights with the person-level control totals and adjust for differential coverage rates at the person level.

   The four dimensions for the raking cells were a cross of the adult's race/ethnicity (black, non-Hispanic/Hispanic/other) and household income ($10,000 or less/$10,001-$25,000/$25,001 or more), a cross of sex and age (16-29 years/30-49 years/50 years or more), a cross of Census region (Northeast/South/Midwest/West) and urbanicity (urban/rural), and a cross of home tenure (rent/own or other) and educational attainment (less than high school diploma/high school diploma or equivalent/some college). These raking dimensions were used because they include important analysis variables (e.g., educational attainment) and characteristics that have been shown to be associated with telephone coverage (e.g., race/ethnicity).

   The control totals were obtained from the March 1998 CPS. Table 7-10 shows the control totals used for raking the Adult Education interview weights The raking iterations were continued until the estimated totals were within 1 of all the control totals.

   The final Adult Education Interview weight for sampled adult *k* is

$$AW_k = NAW_j ¢• D_{k(c)},$$

   where $D_{k(c)}$ is the raking adjustment factor for raking cell *c*, where adult *k* has the attributes corresponding to the levels of the four dimensions of raking cell *c*.

Table 7-10.—Control totals for raking the NHES:1999 person-level Adult Education Interview and Adult Special Study Interview weights

Race/ethnicity	Household income	Control total
Black, non-Hispanic	$10,000 or less	3,261,602
Black, non-Hispanic	$10,000-25,000	5,575,328
Black, non-Hispanic	$25,001 or more	13,291,836
Hispanic	$10,000 or less	2,133,951
Hispanic	$10,000-25,000	5,267,484
Hispanic	$25,001 or more	12,090,037
Other	$10,000 or less	8,939,081
Other	$10,000-25,000	26,706,488
Other	$25,001 or more	117,359,401
Age	**Sex**	**Control total**
16-29 years	Male	20,621,334
16-29 years	Female	21,256,430
30-49 years	Male	40,852,187
30-49 years	Female	42,157,257
50 years or more	Male	31,663,625
50 years or more	Female	38,074,374
Census region	**Urbanicity**	**Control total**
Northeast	Urban	31,375,568
Northeast	Rural	8,384,642
South	Urban	45,901,269
South	Rural	20,963,514
Midwest	Urban	33,469,480
Midwest	Rural	13,223,559
West	Urban	35,628,833
West	Rural	5,678,341
Home tenure	**Educational attainment**	**Control total**
Rent	Less than high school diploma	12,800,580
Rent	High school diploma or equivalent	17,837,673
Rent	Some college	24,341,621
Own or other	Less than high school diploma	20,542,819
Own or other	High school diploma or equivalent	47,963,995
Own or other	Some college	71,138,520
TOTAL		194,625,207

SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), March 1998. (Independent tabulations.)

Person-Level Weights for the Adult Special Study Interview

As described in chapter 2, separate samples of telephone numbers were selected for the NHES:1999 main study and the Adult Special Study. In each household sampled for the Adult Special Study, one adult was sampled for an Adult Special Study Interview. The sampling was based on information collected in the Screener interview from the adult household member who responded to the Screener. An eligible adult was defined to be a person 16 years of age or older who is not enrolled in 12th grade or below and is not on active duty in the U.S. Armed Forces. This section describes the development of the person-level weights for the Adult Special Study Interview.

The household-level weight was used as the base weight for the Adult Special Study Interview weight. The Adult Special Study Interview weight for sampled adult k in household j, SW_k, is the product of the household weight and three weight adjustment factors:

(1) the weight associated with sampling the adult from among all eligible adults in the household (A_{jk});

(2) the weight associated with Adult Education Interview nonresponse (B_k); and

(3) the adjustment associated with raking the person-level weights for the Adult Education Interview to Census Bureau estimates of the number of adults (C_k).

The procedures for computing the person-level weight adjustments from the Adult Special Study Interview are given below.

1. The first adjustment, A_{jk}, accounted for the probability of sampling adult k from among all eligible adults in household j. The adjustment had the form

$$A_{jk} = n_j$$

where n_j is the number of adults in household j.

For each sampled adult k, the unadjusted person-level Adult Special Study Interview weight, USW_k, can be written as the product of the household-level weight and this adjustment:

$$USW_k = HHW_j \bullet A_{jk}$$

2. The next step was to adjust for adults who did not respond to the Adult Special Study Interview. Each sampled adult was classified as either a respondent (R) or a nonrespondent (NR), depending on whether or not the adult completed the Adult Special Study Interview. The unadjusted Adult Special Study Interview weights (USW) of the

nonrespondents were distributed to the unadjusted Adult Special Study Interview weights of the respondents within a nonresponse adjustment cell. Three variables were used to create the nonresponse adjustment cells. The first was the sex of the adult, the second was the adult education participation status of the adult (as reported by the Screener respondent), and the third was an indicator of whether the sampled adult was the Screener respondent. These variables were used because they are available for all sampled adults (both respondents and nonrespondents) and are associated with Adult Special Study Interview response propensity. (See table 7-11 for a list of Adult Special Study Interview nonresponse adjustment cells.) The nonresponse adjustment factor, $B_{k(c)}$, applied to each respondent k in adjustment cell c is

$$B_{k(c)} = \frac{\sum_{h \in R_c \cup NR_c} USW_h}{\sum_{h \in R_c} USW_h}$$

Table 7-11.—NHES:1999 Adult Special Study Interview nonresponse adjustment cells

Explanatory variables: Sex/adult education participation status (from Screener)/indicator of whether sampled adult was the Screener respondent	Number of respondents in cell	Completion rate (percent)
Female/adult education participant/Screener respondent	201	91.5
Female/adult education participant/not Screener respondent	57	77.9
Female/adult education nonparticipant/Screener respondent	283	90.2
Female/adult education nonparticipant/not Screener respondent	87	78.8
Male/adult education participant/Screener respondent	87	95.7
Male/adult education participant/not Screener respondent	77	82.9
Male/adult education nonparticipant/Screener respondent	158	90.2
Male/adult education nonparticipant/not Screener respondent	132	66.2

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), 1999.

Thus, for each sampled adult k, the nonresponse-adjusted, person-level Adult Special Study Interview weight, NSW_k, can be written as

$$NSW_k = USW_k \bullet B_{k(c)}.$$

Extreme weights may occasionally result when households or persons are sampled at very different rates. Additionally, the procedures used for nonresponse adjustment, poststratification, and raking may contribute to extreme weights. A few unexpectedly large sampling weights can seriously inflate the variance of the survey estimates. Thus, for a very small number of records, weight trimming procedures may be used to reduce the impact of such large weights on the estimates produced from the sample. Weight trimming refers to the process of artificially adjusting a few extreme weights to reduce their impact on the weighted estimates.

The variability in the nonresponse-adjusted Adult Special Study Interview weights, *NSW*, was examined, and it was determined that no trimming of the weights was required.

3. The final stage of weighting for the Adult Special Study Interview involved raking the trimmed nonresponse-adjusted, person-level weights, NSW, to national control totals. Raking was proposed by Deming and Stephan (1940) as a way to ensure consistency between complete counts and sample data from the 1940 U.S. Census of population. The raking procedure typically improves the reliability of survey estimates, and also corrects for the bias due to households or persons not covered by the survey, e.g. households without telephones and households with unlisted telephone numbers belonging to zero-listed telephone banks. The raking procedure is carried out in a sequence of adjustments: first, the base weights are adjusted to one marginal distribution (or dimension) and then the second marginal distribution, and so on. One sequence of adjustments to the marginal distributions is known as a cycle or iteration. The procedure is repeated until convergence of weighted totals is achieved.

   This additional raking adjustment, following the household-level poststratification adjustment, is required because the Adult Special Study Interview involves new eligibility criteria and a new level of sampling. That is, although the household-level poststratification adjustment aligned the weighted totals of the household weights with the household level control totals, the raking of the Adult Special Study Interview weights is required in order to align the person-level Adult Special Study Interview weights with the person-level control totals and adjust for differential coverage rates at the person level

   The four dimensions for the raking cells were a cross of the adult's race/ethnicity (black, non-Hispanic/Hispanic/other) and household income ($10,000 or less/$10,001-$25,000/$25,001 or more), a cross of sex and age (16-29 years/30-49 years/50 years or more), a cross of Census region (Northeast/South/Midwest/West) and urbanicity (urban/rural), and a cross of home tenure (rent/own or other) and educational attainment (less than high school diploma/high school diploma or equivalent/some college). These raking dimensions were used because they include important analysis variables (e.g., educational attainment) and characteristics that have been shown to be associated with telephone coverage (e.g., race/ethnicity).

   The control totals were obtained from the March 1998 CPS, and are the same as those used in raking the Adult Education Interview weights (see table 7-10). The raking iterations were continued until the estimated totals were within 1 of all the control totals.

   The final Adult Special Study Interview weight for sampled adult *k* is

$$SW_k = NSW_j \bullet C_{k(c)},$$

   where $C_{k(c)}$ is the raking adjustment factor for raking cell *c*, where adult *k* has the attributes corresponding to the levels of the four dimensions of raking cell *c*.

Methods for Computing Sampling Errors

In surveys with complex sample designs, such as the NHES:1999, direct estimates of the sampling errors assuming a simple random sample will typically underestimate the variability in the estimates. The NHES:1999 sample design and estimation included procedures that deviate from the

assumption of simple random sampling, such as oversampling in areas with higher concentrations of minorities, sampling persons within households with differential probabilities, and raking to control totals.

Replication Sampling Errors

One method for computing sampling errors to reflect these aspects of the sample design and estimation is the replication method. Replication involves splitting the entire sample into a set of groups or replicates, based on the actual sample design of the survey. The survey estimates can then be computed for each of the replicates by creating replicate weights that mimic the actual sample design and estimation procedures used in the full sample. The variation in the estimates computed from the replicate weights can then be used to estimate the sampling errors of the estimates from the full sample.

A total of 80 replicates were defined for the NHES:1999 based on the sampling of telephone numbers. This number was chosen to provide reliable estimates of sampling errors with reasonable data processing costs. The specific replication procedure used for the NHES:1999 was a jackknife replication method (Wolter 1985). It involved dividing the sample into 80 random subsamples (replicates) for the computation of the replicate weights. The 80 replicates were formed based on the minority stratum and sampling order of the telephone numbers. In each replicate, a replicate weight was developed using the same weighting procedures that were used to develop the full sample weight. The jackknife variance estimator has the form

$$v\left(\hat{\theta}\right) = \frac{G-1}{G}\sum_{k=1}^{G}\left(\hat{\theta}_{(k)} - \hat{\theta}\right)^2 ,$$

where θ is the population parameter of interest; $\hat{\theta}$ is the estimate of θ based on the full sample; $\hat{\theta}_{(k)}$ is the estimate of θ based on the observations included in the *k*th replicate; and G is the total number of replicates. (For the NHES:1999, $G = 80$.)

Replicate weights were created for each of the extended interview components: the Parent Interview, the Youth Interview, and the Adult Education Interview. The procedures for forming the replicate weights for each of these components are described below.

1. The 167,347 sampled telephone numbers were divided into the two minority strata used for sampling. Within each of the two strata, the telephone numbers were sorted in the same order as that used in the selection of the sample.

2. Eighty replicates were formed using all 167,347 telephone numbers. This was done by assigning the 1st ,81st, 161st, … telephone numbers in the list to replicate 1; the 2nd, 82nd, 162nd,… telephone numbers in the list to replicate 2; …; and the 80th, 160th, 240th,… telephone numbers in the list to replicate 80. Thus, there were 2,091 telephone numbers assigned to each of 13 replicates and 2,092 telephone numbers assigned to each of the remaining 67 replicates. Due to differences in residency and response rates among replicates, however, there is more variation in the number of units per replicate having positive final household weights.

3. The telephone numbers for residential households were then assigned 80 weight variables (REPL1 through REPL80) using the following procedures. The replicate base weights were assigned by multiplying the full sample base weight by either zero or 80/79. This procedure is the standard jackknife method of dropping one unit (in this case, a group of residential households with the same replicate number) and weighting up the remaining units to account for the dropped unit. For example, to construct replicate 1 base weights, a replicate base weight of 0 is assigned to residential households from REPL1, and the base weights of all residential households in REPL2 through REPL80 are multiplied by a factor of 80/79.

4. Using the exact same weighting procedures described earlier in this chapter for each of the sets of full sample weights, the other adjustments (i.e., sampling adjustments, nonresponse adjustments, and raking adjustments) were applied to every replicate base weight for completed interviews. In other words, the weighting steps were applied 80 times.

5. The difference in the methods used for the full sample and for the replicate weights was that the raking iterations were stopped when the replicate weights converged to within 10 of the control totals rather than 1, which was used in the full sample weighting.

The replicate weights are included in the Parent Interview file as FPWT1 through FPWT80. In the Youth Interview file, they are FYWT1 through FYWT80, and in the Adult Education Interview file, they are FAWT1 through FAWT80. The computation of the sampling errors using these replicate weights can be done easily using the Windows-based software package WesVar Complex Sample Software; the replication method should be specified as JK1. The current version of WesVar Complex Samples is available from SPSS. Additional information can be obtained at http://www.spss.com/software/wesvar/. A previous version of WesVarPC (version 2.12) is available free of charge at http://www.westat.com or by sending an e-mail message to wesvar@westat.com. Please note that version 2.12 of WesVarPC is no longer being updated or revised.

Taylor Series Approximation

Another approach to the valid estimation of sampling errors for complex sample designs is to use a Taylor series approximation to compute sampling errors. To produce standard errors using a

Taylor series program, such as SUDAAN (Shah et al. 1995), two variables are required to identify the stratum and the primary sampling unit (PSU). The stratum-level variable is the indicator of the variance estimation stratum from which the unit (telephone number or sampled person) was selected. The PSU is an arbitrary numeric identification number for the unit within the stratum. For the NHES:1999, the stratum variable signifies the minority stratum used for sampling; the PSU variable was assigned sequentially based on the selection order of the telephone number within the minority stratum.

The PSU and stratum variables appear on each of the extended interview files. On the Parent Interview file, the PSU and stratum variables are called PPSU and PSTRATUM; on the Youth Interview file, they are YPSU and YSTRATUM; and on the Adult Education Interview file, they are APSU and ASTRATUM. These variables can be used in SUDAAN to produce standard errors by specifying that the design is a "with replacement" sample (DESIGN = WR) and that the sampling levels are given by the appropriate stratum and PSU variables. For example, for estimates from the Youth Interview file, use YSTRATUM YPSU in the NEST statement.

STATA, another software package that uses Taylor series methods, also uses the PSU and stratum variables to define the units needed for standard error computation. To specify the stratum, PSU and weight variables in STATA use the svyset strata, svyset psu, and svyset pweight commands. For example, for estimates from the Youth Interview file, use the following commands to specify these design parameters:

- svyset strata ystratum
- svyset psu ypsu
- svyset pweight fywt

Data users should be aware that the use of different approaches or software packages in the calculation of standard errors may result in slightly different standard errors. Estimates of standard errors computed using the replication method and the Taylor series method are nearly always very similar, but not identical.

Approximate Sampling Errors

Although calculating the sampling errors using the methods described above is recommended for many applications, simple approximations of the sampling errors may be valuable for some purposes. One such approximation is discussed below.

Most statistical software packages compute standard errors of the estimates based upon simple random sampling assumptions. The standard error from this type of statistical software can be adjusted for the complexity of the sample design to approximate the standard error of the estimate under the actual sample design used in the survey. For example, the variance of an estimated proportion in a simple random sample is the estimated proportion (p) times its complement ($1-p$) divided by the sample size (n). The standard error is the square root of this quantity. This estimate can be adjusted to more closely approximate the standard error for the estimates from the NHES:1999.

A simple approximation of the impact of the sample design on the standard errors of the estimates that has proved useful in previous NHES surveys and in many other surveys is to adjust the simple random sample standard error estimate by the root design effect (DEFT). The DEFT is the ratio of the standard error of the estimate computed using the replication method discussed above to the standard error of the estimate under the assumptions of simple random sampling. An average DEFT is computed by estimating the DEFT for a number of estimates and then averaging. A standard error for an estimate can then be approximated by multiplying the simple random sample standard error estimate by the mean DEFT.

In complex sample designs, like the NHES:1999, the DEFT is typically greater than one due to the clustering of the sample and the differential weights attached to the observations. In the NHES:1999 both of these factors contributed to making the average DEFT greater than 1.

The average DEFT computed for estimates in the three interviews in the NHES:1999 ranged from 1.2 to 1.5. For the Parent file estimates, the average DEFT was 1.3 overall**.** It did not vary appreciably for estimates by path of child (grouped as infant, preschooler, younger child, older child, or home schooler) or by race/ethnicity. Therefore, a DEFT of **1.3** is recommended to approximate the standard error of the estimates in the Parent Interview file.

The average DEFT for estimates in the Youth file is also 1.3, and this does not vary for estimates by path of student (grouped in grades 6 though 8 and 9 through 12) or by race/ethnicity.

Therefore, a DEFT of **1.3** is recommended to approximate the standard error of the estimates from the Youth Interview file.

For estimates from the Adult Education file, the average DEFT is 1.3. For estimates by race/ethnicity, the average DEFT ranges from 1.2 to 1.5. For estimates of characteristics of Adult Education participants the average DEFT is 1.4. Therefore, for estimates of the characteristics of the adult population as a whole, a DEFT of **1.3** could be used to approximate the standard error; for estimates of characteristics of adult education participants, a DEFT of **1.4** is recommended; and for estimates of characteristics of black, non-Hispanic adults, a DEFT of **1.5** is recommended.

As stated above, the average DEFT can be used to approximate the standard error for an estimate. An example of how to do this on a **percent** estimate is as follows. If a weighted estimate of 46 percent is obtained for some characteristic in the Adult Education file (suppose that 46 percent of adults participated in Adult education activities, excluding full-time credential programs), then an approximate standard error can be developed in a few steps. First, obtain the simple random sampling standard error for the estimate using the weighted estimate in the numerator and the unweighted sample size in the denominator: the standard error for this 46 percent statistic would be the square root of ((46•54)/6,697), or 0.61 percent, where the weighted estimate (p) is 46 percent, 54 is 100 minus the estimated percent (1-p), and the unweighted sample size (n) is 6,697. The approximate standard error of the estimate from the NHES:1999 is this quantity (the simple random sample standard error) multiplied by the DEFT for the Adult Education file estimates of 1.3. In this example, the estimated standard error would be 0.79 percent (1.3 x 0.61 percent).

The approximate standard error for a **mean** can be developed using a related procedure. The three steps required to do so are demonstrated using an example from the Youth file. First, the mean is estimated using the full sample weight and a standard statistical software package like SAS or SPSS. Second, the simple random sample standard error is obtained through a similar, but unweighted, analysis. Third, the standard error from the unweighted analysis is multiplied by the mean DEFT for the Youth file estimates of 1.3 to approximate the standard error of the estimate under the NHES:1999 design. For example, suppose that the estimated (weighted) mean number of hours per week worked by students in grades 6 through 12 (among those who worked) was 12, and the simple random sampling standard error (unweighted) was 10 hours. Then, the approximate standard error for the estimate would be 13 hours (10 hours x 1.3).

Users who wish to adjust the standard errors for estimates of **parameters in regression models** should follow a procedure similar to that discussed for means above. Specifically, the estimates

of the parameter in the model can be estimated using a weighted analysis in a standard statistical software package such as SAS or SPSS. A similar, but unweighted, analysis will provide the simple random sample standard errors for these parameter estimates. The standard errors can then be multiplied by the DEFT to arrive at the adjusted standard error for the NHES:1999 design. For example, if a given parameter in a model involving items from the Parent Interview file has a weighted estimate of 2.33 and a standard error of 0.45, then the adjusted standard error would be 1.3 • 0.45 = 0.59.

A better method is to adjust the final weight to reflect the DEFT before the parameter estimates are calculated in a standard statistical software package such as SAS or SPSS. To do this, first sum the values of the final weights for the sample of interest. For instance, for an analysis of adult education participants, sum the final weights for all 6,697 cases on the Adult Education file. Next, divide this sum by the number of cases to generate an average final weight. (In the above example, the number of cases is 6,697). Multiply the average final weight by the square of the DEFT for the population of interest to obtain the adjusted average final weight. (In the above example, the average final weight would be multiplied by the square of 1.3, or 1.69.) Divide the final weight by the adjusted average weight and save the quotient as a new final weight. (In the above example, the new final weight is equal to the final weight divided by the product of 1.69 and the average final weight.) Weight the analysis by this new final weight. The standard errors generated in the analysis will approximate the standard errors correctly adjusted for design effects.

Direct computation of the standard errors is always recommended. It is particularly important when the statistical significance of statements would be affected by small differences in the estimated standard errors.

Standardization of Weights for the Split Half Samples and Other Subsamples

In the NHES:1999, two versions of a five-item knowledge of government test were developed and administered to split half samples of youth. The first set (Set A), comprising the items YE8a-e (CYVP, CYLAW, CYHOUSE, CYVETO, and CYCONSRV) on the Youth file, was administered to a random subsample of about half the respondents, and the second set (Set B), comprising the items YE9a-e (CYVP, CYJUDGE, CYSENATE, CYCONST, and CYDFENS) on the Youth file, was administered to the remaining respondents. The half samples were randomly determined by the telephone number of the household. One set of questions was administered in households with telephone numbers ending in an even digit, and the other set was administered in households with telephone numbers ending in an odd digit.

In the NHES:1999 Youth Interview, a set of detailed followup questions were asked of a subsample of youth who participate in service activities. The followup questions are the following items, which appear as items YG2 through YG8 in the Youth Interview questionnaire: SAPYMT1-3, SAARNG1-3, SAHELP1-3, SAHCHIL1-3, SAHADLT1-3, SAHELDR1-3, SARELA1-3, SAPOOR1-3, and SADISB1-3. Additionally, the service activity descriptions were coded for this subsample of youth (BCODE1-3, SPCODEA1-3, SPCODEB1-3, and SPCODEC1-3).

As discussed earlier in this chapter, the Parent Interview, Youth Interview, Adult Education Interview, and Adult Special Study Interview weights have been adjusted to national totals. However, weights for the random subsamples described above were not adjusted separately to national totals. As a result, totals for demographic characteristics for each of these subsamples do not agree with each other and do not match the national totals. If it is desirable for the subsamples to each be nationally representative, then a simple weighting adjustment may be performed using WesVar Complex Samples Software. (For more detail, see WesVar Complex Samples 3.0 User's Guide, 1998.) Hereafter, such an adjustment will be referred to as "standardization."

For users of WesVarPC, the following instructions list the steps required to standardize the weights of the split half sample or subsample to the full sample weighted totals, which may be computed from the weights on the NHES:1999 files. Using the terminology of standardization, the demographic variables to which the subsamples are standardized are called the dimensions, and the categories of these dimensions are called the levels. An example of standardizing using the two sets of civic knowledge questions in the Youth Interview is given below**.**

1. For each dimension to be used in the standardization, compute the control totals (i.e., the weighted estimates of totals for the levels of the dimension based on the full sample). For example, suppose the weights are to be standardized to two dimensions: sex (SEX) and grade (ALLGRADE, recoded so that children with no grade equivalent are included in the modal grade for their age). To do so, submit Table requests in WesVarPC using the full-sample data file. Submit one Table request for each dimension (SEX and the recode of ALLGRADE) and generate weighted frequencies by specifying the full sample weight.

2. For each dimension, create an ASCII file containing a field for the level of the dimension variable and a field for the control total, with the two fields separated by a space. Continuing the example, then two ASCII files should be created. The first, say SEXTOTL.DAT, would look like this (generating the control totals from the full sample weight in WesVarPC):

```
1 13745208
2 13589422
```

The second, say GRADTOTL.DAT, would look like this (generating the control totals from the full sample weight in WesVar):

```
6  4016524
7  4017320
8  3812394
9  4048494
10  4012671
11  3667866
12  3759361
```

Note that the sum of the two levels of SEX equals the sum of the seven levels of the control totals of the recoded ALLGRADE. This is a requirement of standardization. The sum of the control totals for the dimensions must be equal.

3. Subset the file to the particular subsample of interest. For example, on the Youth Interview file, to standardize the weights for the subsample that was administered the civic knowledge questions in Set A, subset the file by extracting only those cases with CYLAW ≠ -1.

4. Using WesVarPC, choose Import Data File from the Prep menu. Provide the required parameters (see Brick et al. 1995 for details on the specifications for each WesVar screen), and press the Create button. This will create a WesVarPC file containing only the cases administered the Set A questions. (This file will have a .VAR extension.)

5. Next, from the Prep menu, select Poststratification. Specify the WesVarPC file that was created in the previous step. Specify the first dimension variable as the Cell Identifier, and specify the corresponding file of control totals as the File with Control Totals. Keeping with the last example, one might specify SEX as the Cell Identifier and C:\SEXTOTL.DAT as the File with Control Totals. A new WesVarPC file will be created. For the sake of illustration, suppose this new file is called YUTH_A.VAR.

6. Repeat the poststratification process, using the second variable as the Cell Identifier and its corresponding control totals file as the File with Control Totals. The input file for this step should be the output file from the previous poststratification step (YUTH_A.VAR). In the example, the recode of ALLGRADE would be the Cell Identifier, and C:\GRADTOTL.DAT would then be the File with Control Totals and the output file might be called YUTH_B.VAR. At this point, the sum of the weights of the file by the recode of ALLGRADE equal the control totals in GRADTOTL.DAT.

7. Continue this poststratification process until all dimensions have been exhausted. When this occurs, you have completed one iteration of this process. In the example, one iteration will have been completed after one poststratification step has been completed using the recode of ALLGRADE.

8. Proceed with further iterations of this poststratification process until the new weighted totals converge to the control totals. To check on convergence, submit a set of Table requests after each iteration, with each table producing weighted frequencies for a cell identifier variable (i.e., dimension). In the example, there will be two Table requests:

SEX and the recode of ALLGRADE. If the new weighted totals *for each dimension* match the control totals (to within some tolerable amount of error), then terminate the poststratification process. If the new weighted total *for any dimension* do not match the control totals, then continue with further iterations. In the example, after each iteration, the new weighted totals for the recode of ALLGRADE will match the control totals, since the recode of ALLGRADE was the last dimension to which the weights were poststratified. However, if the totals for SEX do not match the control totals, then you must proceed with another iteration of poststratification; i.e., poststratify to SEX and then poststratify to the recode of ALLGRADE.

This process will bring the new weighted totals for the particular subsample up to national levels. However, caution should be taken in combining samples. For example, one might use this standardization process on the weights for youth in the subsample receiving the Set A questions, and then also use this process on the weights for youth in the subsample receiving the Set B questions. In that case, each of the two subsamples is standardized to national totals. However, the standardized weights should be **divided by two** for any analyses where the two subsamples are combined and standardization to national totals is desirable.

8. COMPARISON OF NHES:1999 ESTIMATES WITH OTHER DATA SOURCES

Introduction

This chapter compares selected estimates from the 1999 National Household Education Survey (NHES:1999) with estimates from previous NHES collections, the Current Population Survey (CPS), and other relevant extant data sources. The comparisons provide an indication of the reasonableness of selected NHES:1999 estimates. Where differences are found between NHES:1999 estimates and those from other sources, possible reasons are presented. All differences noted are significant at the 0.05 level; a Bonferroni adjustment was made for multiple comparisons.

The purpose of the NHES:1999 was to provide end-of-decade measures of key education indicators through replication of items fielded in previous NHES administrations. With this focus in mind, the NHES:1999 was designed to cover a wide range of educational topics in three interviews, the Parent Interview, the Youth Interview, and the Adult Education Interview. The Screener collected information about household composition and determined which members of the household were eligible for which extended interview(s), if any. Because the NHES:1999 covered a wide variety of topics relating to education, no single data source can be used for comparative purposes. The various data sources used for this comparative analysis were selected because they included topical information and samples similar to those used in one or more of the NHES:1999 interviews.

Populations of Interest and Data Sources

The estimates presented in this chapter reflect answers given by respondents representing three populations of interest. First, the NHES:1999 collected information about children age 0 through grade 12. Information on this population is reflected in parent responses to Parent Interview items. Second, youth in grades 6 through 12 whose parents had completed a Parent Interview reported on items including school and family characteristics, community service involvement, and plans for postsecondary education. The third population of interest was adults, defined as persons 16 years or older, not enrolled in grade 12 or below, and not on active duty in the military. These respondents reported on a number of adult education items. Estimates in this chapter include those from Parent Interviews and from Adult Education Interviews; respondents to the Adult Education Interview may also be parents and may have responded to a Parent Interview as well.

Appendix J contains descriptions of each survey with which the NHES estimates are compared. The descriptions include information about the topics and populations covered, sample sizes, methods of survey design and administration, dates and periodicity of the surveys, sponsorship of the studies, and availability of the data. In the sections that follow, the data sources used to compare to each survey component are described briefly. Estimates from the NHES:1991, NHES:1993, NHES:1995, NHES:1996, and the CPS supplements contained in this chapter were generated from their respective data files; estimates from the other surveys were obtained from published sources or personal communication with researchers. All data reported are weighted estimates.

Methodological Considerations in Data Comparisons

Sample sizes, methods of survey administration, the timing of surveys, and response rates all have methodological impact on the data collected and any comparisons made (Bradburn 1983; Groves 1989). In addition, question wording variation, question order, question context, and respondent recall can have a major impact on survey responses (Bradburn 1983; Groves 1989). As a result, it is important to note some general methodological issues.

One issue is population coverage, particularly for telephone surveys like the NHES:1999. Population coverage is an issue that arises in the examination of results of any telephone survey because households without telephones are excluded from the sample. Approximately 6 percent of adults age 16 years or older and not enrolled in elementary or secondary school and about 7 percent of children age 20 or younger and enrolled in grade 12 or below live in households without telephones (based on independent tabulations of the 1997 Current Population Survey). Low-income persons, minority group members, and persons who do not own their own homes are more likely than others to live in nontelephone households (Groves and Kahn 1979; Thornberry and Massey 1988; Anderson, Nelson, and Wilson 1998).

The NHES:1999 data were statistically adjusted to reduce the effects of population undercoverage due to lack of telephone ownership. As a result, the estimates from the NHES:1999 sum to the total number of persons in all households, not just those in households with telephones.[18] Although these statistical adjustments may be useful in reducing biases in aggregates for the whole population,

[18]Similar statistical adjustments were made for the NHES:1996, the NHES:1995, the NHES:1993 and the NHES:1991 data, which are also included in some comparisons in this chapter.

more serious biases may exist for estimates of segments of the population with relatively low telephone coverage rates (Brick, Burke, and West 1992).

Apart from population coverage, responses to survey items can vary depending upon the method of survey administration. Data collection modes differed for several of the survey sources used in this chapter. The NHES:1999, NHES:1996, NHES:1995, NHES:1993, and NHES:1991 were conducted by telephone in centralized facilities. The CPS surveys were primarily conducted by telephone from interviewers' homes, but about one-fourth to one-third of CPS interviews were conducted in person. All of the student interviews for the National Survey of High School Seniors (NSHSS) took place in person in high schools. These differences in mode may underlie some of the differences across survey estimates that are presented in this chapter.

Timing of survey administration in terms of the years in which surveys were conducted or the time of year they were administered also may affect responses. Where possible, estimates from surveys that were administered close in time to the NHES:1999 have been provided. However, in some cases, wide time gaps exist between administrations of the NHES:1999 and the extant sources most comparable for certain items. In such cases, the historical context of the surveys may vary substantially. For example, several civic involvement items from the NHES:1999 were derived from the 1965 NSHSS. Given the time difference of more than 30 years, it is possible that discrepant estimates may reflect the different cultural climates of 1965 and 1999.

Another important consideration is the time of the year when the data are collected, which can affect responses to questions related to specific topics, such as school attendance. For example, the relationship between age and grade in school can be affected by the time of year data are collected. A child at a given age in October (the time of the CPS Education Supplement) is most likely enrolled in the grade appropriate for his or her age during the fall. About one-sixth of those children, however, will have turned a year older by the new year, and would appear in the NHES:1999 as being a year older.

In this chapter, the NHES:1999 estimates have been adjusted to account for differences in the timing of the surveys, if appropriate. For example, to facilitate meaningful comparisons between the CPS Education Supplement conducted in October and the NHES:1999 conducted in January to April, ages of children whose birthdays fell in October, November, or December in the NHES:1999 were recoded (for this comparative analysis only) to more closely match the CPS convention. Despite these adjustments, it is important to keep in mind that the data collection period can be an important factor to consider when comparing estimates.

Variation in response rates across surveys can also result in differences in the estimates. To the extent that nonrespondents are different from respondents, low response rates may introduce biases into the survey estimates. The NHES:1999 Screener response rate was 74.1 percent. The completion rate for the Parent Interview was 90.0 percent; thus, the response rate for the Parent Interview was 66.7 percent (74.1 percent times 90.0 percent). For the Youth Interview, the completion rate was 78.1 percent, and the overall response rate was 57.9 percent (74.1 percent times 78.1 percent). For the Adult Education Interview, the completion rate was 84.1 percent and the response rate was 62.3 percent (74.1 percent times 84.1 percent). The issue of response rates for the NHES:1999 is addressed more thoroughly in chapter 5.

Variations in question wording and operational definitions between surveys are other potential sources of differences between estimates. These issues are discussed for each component in conjunction with the comparisons presented later in this chapter.

General Comments on the NHES:1999 Estimates

The estimates to be presented here are just some of the multitude of comparisons that could be made by comparing NHES:1999 estimates to those of other sources using different variables and categorizations of those variables. When many comparisons are made, some will undoubtedly show statistically significant differences. The multiple comparison adjustments are made assuming that the only comparisons being made are those in the particular table. This approach is still useful because the main purpose is to explore the data to determine whether there are some glaring differences in estimates that need to be investigated further.

In order to lessen the potential effects of coverage bias, the NHES traditionally has adjusted for differences by using population controls in the weighting process. The sample weights are raked to totals from the CPS to adjust for differential coverage rates. The control totals are selected by choosing variables expected to be associated with the telephone coverage for each of the components of the survey. Raking is an iterative weighting procedure similar to poststratification. These weighting adjustments are described in more detail in chapter 7.

Methodology for Significance Testing

Wherever possible, comparisons in this chapter were examined to ensure that the differences discussed were statistically significant at the 95 percent level of confidence. For comparisons in which NHES:1999 data and data from previous NHES studies are involved, the standard errors of estimates could be obtained and are provided in the tables. However, standard errors were not always available for the estimates from published data. Approximate determination of possible significant differences was made under the assumption that the comparison data set has standard errors about the same as the NHES.

For example, statistical significance testing was conducted with the assumption that the standard error of the CPS estimates was the same as the standard error for the NHES:1999 estimates. Because the CPS used roughly the same number of sampled households as the NHES:1999, one would expect the CPS standard errors to be roughly equivalent to NHES:1999 standard errors. Therefore, it is reasonable to use the same standard errors for both surveys.

Due to large sample sizes, some relatively small differences (3 to 5 percent) may be significant when all cases are included in an analysis. Parent Interviews, for example, yielded responses from 24,600 respondents. In other cases, such as for estimates from the Adult Education Interview file, differences of 3 to 5 percent may not be significant because of somewhat smaller sample sizes (6,697) or larger numbers of comparisons.

Other Data Considerations

Imputation. As is true for most surveys, responses were not obtained for all the NHES:1999 data items for all interviews. Despite the high item response rate, all NHES:1999 missing data items were imputed.[19] The CPS estimates provided as comparison data also contain imputed data.

NHES:1999 Parent Interview parents/guardians. In the NHES:1999 Parent Interview, the parent or guardian who was identified as the most knowledgeable about the sampled child was designated as the respondent for the interview about the sampled child's education. These respondents provided data about the sampled child and about the child's parents/guardians living in the household. Seventy-seven percent of Parent Interview respondents were reported as the child's mother (birth,

[19]The median item response rate for imputed items in the Parent Interview and the Adult Education Interview was 99 percent. For imputed items in the Youth Interview, the median item response rate was 98 percent.

adopted, step, or foster), and 81 percent were female respondents, which includes mothers and female guardians. In contrast, data from the NSHSS were collected from approximately equivalent numbers of mothers and fathers, who were selected randomly. One-third of parent respondents consisted of both the mother and father of the sampled high school student. However, in the event that a sampled parent was unavailable at the time of the interview, the other parent in the household (if present) was interviewed instead. This type of distinction in sampling methodology between the NHES and other surveys may contribute to differences in estimates because it may lead to different response patterns from the most knowledgeable parent (usually the mother) than from a randomly selected parent.

NHES:1999 Parent Interview age and grade eligibility. For the Parent Interview component, data were collected about children ages 0 through 20 who were in 12th grade or below. For comparative purposes, either grouped age categories were used, or the NHES:1999 data were adjusted to match the comparative data sample as closely as possible, as noted previously.

Students in the 6th through 12th grades were administered the items in the Youth Interview. Several of the comparison sources used more restricted student grade ranges than did the NHES:1999. For example, the National Education Longitudinal Study (NELS) base year survey obtained data only from students in the 8th grade and their parents; the first NELS follow-up occurred when most of the original sample was in the 10th grade, and the second follow-up occurred when most of the original sample was in the 12th grade. Likewise, the NSHSS included only high school seniors enrolled in a social studies course. Accordingly, some of the NHES:1999 estimates reflect responses of subsamples recoded to match the samples of extant sources. Implications for the findings are noted where appropriate.

Studies using adult respondents also differed from the NHES:1999 Adult Education Interview in their age criteria for inclusion in the survey. The CPS includes respondents age 15 and older, whereas NHES:1999 adults were at least 16 years old. Again, whenever possible, NHES comparisons with these sources include estimates from subsamples that most closely match the extant source. However, when such analyses are not possible using the available data, sample age differences may confound comparisons with different data sources.

Comparability of the NHES:1999 and 1998 CPS Distributions for Age of Persons

Table 8-1 shows NHES:1999 and 1998 CPS estimates of the age distribution of the population as indicated by the age of persons who are subjects of interviews (i.e., children from birth to age 20 and

enrolled in grade 12 or below and noninstitutionalized adults age 16 or older and not enrolled in grade 12 or below). On the whole, the estimates of the two surveys are comparable, differing by an average of less than 1 percent. The exception is for the oldest age categories. For instance, the NHES:1999 had 12 percent in the 50- to 59-year-old range versus 10 percent in the 1998 CPS, and 14 percent in the age 60 or older category versus 16 percent in the 1998 CPS. Also, the NHES:1999 had 10 percent in the 65 and older range compared with 12 percent in the 1998 CPS. The NHES:1999 adult weights were raked to specific age groups (16-29, 30-49, and 50 and over), but not the categories presented in table 8-1. Had raking for the adult sample been done to the categories shown in the table, differences between the NHES:1999 and 1998 CPS on the 50- to 59-year-old and 60 and over age categories would not have occurred.

Table 8-1.—Percent distribution for age of subjects of interviews: NHES:1999 Parent and Adult Education Interviews and CPS:1998

Age category	NHES:1999*		CPS:1998
	Percent	s.e.	Percent
0 through 2 years	4	0.0	4
3 through 5 years	4	0.0	4
6 through 9 years	6	0.0	6
10 through 19 years	16	0.3	15
20 through 29 years	13	0.3	14
30 through 39 years	15	0.5	16
40 through 49 years	16	0.5	15
50 through 59 years	12	0.3	10
60 or more years	14	0.3	16
3 through 10 years	12	0.0	12
11 through 18 years	13	0.2	12
65 or more years	10	0.3	12

*Estimates of children (age 0 through 12th grade) were obtained from the Parent Interview and estimates of adults (ages 16 and older, not enrolled in 12th grade or below) were obtained from the Adult Education Interview. Parent respondents to the NHES:1999 Parent Interview about children's education are not included in calculations for adult estimates.

NOTE: s.e. is standard error.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview and Adult Education Interview, 1999. U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), March 1998.

The NHES:1999 Parent Interview Comparisons

Data comparisons in this section cover some of the major topical areas of the Parent Interview component for the NHES:1999. Because of the breadth of topics included in the Parent Interview component, several data sources were used for comparison. What follows is a brief description of each.

The 1991, 1993, 1995, and 1996 National Household Education Surveys

Information on early childhood education was collected in the NHES:1991, NHES:1993, NHES:1995, and NHES:1996. Data from these previous NHES administrations were used in comparisons of NHES:1999 Parent Interview estimates concerning participation in child care arrangements and programs among preschoolers, participation in literacy-related activities with family members, disabling conditions, and parent and household characteristics. The NHES:1991 Early Childhood Care (ECE) component and the NHES:1993 School Readiness (SR) component included children ages 3 to 7 years or in 2nd grade or below. The NHES:1991 component contained 12,472 children; the NHES:1993 component contained 10,888 children. The NHES:1995 Early Childhood Program Participation (ECPP) component contained 14,064 children age 10 and younger who were enrolled in 3rd grade or below. The NHES:1996 Parent Involvement in Education and Civic Involvement (PFI/CI) component contained 20,792 children ages 3 through 20 years enrolled in 12th grade or below.

The Current Population Survey

The Current Population Survey is a monthly household survey conducted by the Bureau of the Census to provide information about employment, unemployment, and other characteristics of the civilian noninstitutionalized population. The CPS is conducted each month in a sample of approximately 50,000 households, with interviews for approximately 120,000 individuals. The U.S. Department of Education is a joint sponsor of the annual October supplement to the CPS, which provides specific information on educational topics. The response rate for the October 1997 survey, including the school enrollment supplement, was 89.3 percent.

CPS data from October 1997 were used for comparison with estimates from the NHES:1999 Parent Interview component. The October 1997 supplement contains the most recent available CPS data regarding child care arrangements and data relating enrollment status and grade to age. These data were

used to compare estimates regarding preschool children's participation in child care arrangements and programs.

The National Education Longitudinal Study

The National Education Longitudinal Study (NELS:88, NELS:92 follow up) is a longitudinal study of a cohort of students and their parents that provides trend data about the transition of students into high school, college, and careers. The base year file contains records on a random sample of 24,599 students when they were in the 8th grade. The first follow up occurred approximately 2 years after the first collection and approximately 93 percent of the base-year sample participated. NELS data included in this chapter are from the parent and youth files. These data were used to compare family involvement in schools.

Parent Interview Findings

The data comparisons below for the Parent Interview component of the NHES:1999 cover most of the major topics included in the questionnaire. The estimates compared cover the topics of school enrollment and grade level, participation in child care arrangements and programs, school type and grade level, enrollment in public and private schools, school size, family structure and household urbanicity, household income, parents' highest education, race/ethnicity, family contact with and involvement in school, plans for postsecondary education, literacy-related activities, and disability.

School enrollment and grade level by age. Tables 8-2 and 8-2A provide the NHES:1999 and 1997 CPS estimates and standard deviations for those estimates of enrollment and current grade level among 0- to 20-year-olds. Since the CPS estimates were gathered in October, the ages of children in the NHES:1999 were recalculated to reflect their ages as of September 30, 1998, rather than the NHES standard of December 31, 1998. The NHES:1999 estimates are quite similar to those from the 1997 CPS, with the exception of estimates of center-based and nursery school enrollment. Specifically, the NHES:1999 estimated that 5 percent of 2-year-olds and 42 percent of 3-year-olds are attending center-based arrangements compared to no 2-year-olds and 38 percent of 3-year-olds attending nursery school in the 1997 CPS. The difference may be due to the fact that the NHES:1999 specifically asked about Head Start enrollment, while the CPS questionnaire did not mention Head Start.

Table 8-2.—Percent distribution of 0- through 20-year-olds enrolled and not enrolled in school: NHES:1999 Parent Interview and CPS:1997

Child's age	Number of children (thousands)	Not enrolled	Child's current grade													
			Center-based care	K	1	2	3	4	5	6	7	8	9	10	11	12
NHES:1999																
0	4,504	100														
1	3,935	100														
2	3,841	95	5	—												
3	3,898	57	42	1												
4	3,767	34	60	6	—											
5	3,814	3	12	79	6	—										
6	4,209	—	—	16	80	4	—									
7	4,008			1	22	73	5									
8	4,006				—	22	74	3	—							
9	4,039					1	22	72	5	—						
10	4,027				—		1	22	73	4	—					
11	3,938					—	—	3	22	72	3	—				
12	3,912					—			1	23	72	3	—			
13	3,861								—	2	25	69	4	—		
14	3,788									—	3	24	68	4	—	
15	4,018										—	3	28	66	3	—
16	3,902											—	4	28	63	5
17	3,654										—		—	3	26	70
18	986													—	9	91
19	136				2									3	11	84
20	6														75	25

Table 8-2.—Percent distribution of 0- through 20-year-olds enrolled and not enrolled in school: NHES:1999 Parent Interview and CPS:1997—Continued

Child's age	Number of children (thousands)	Not enrolled	Child's current grade													
			Center-based care	K	1	2	3	4	5	6	7	8	9	10	11	12
CPS:1997																
0	3,825	100														
1	3,912	100														
2	3,918	100														
3	3,947	61	38	1												
4	4,033	34	59	7												
5	4,112	5	14	75	6	1										
6	4,092	1	1	12	80	4	1									
7	4,248	1	—	—	20	72	5	1	—	—	—	—	—		—	
8	3,888				2	19	73	5	—	—	—	—	—		—	—
9	3,996				2	2	21	71	5	—	—	—	—			
10	3,931					—	3	20	72	5	—	—	—	—		—
11	3,859						1	2	23	69	4	—	—	—	—	—
12	3,903							1	2	26	68	4	—	—		—
13	3,829							—	1	3	26	66	4	—	—	—
14	3,824							—	—	—	3	24	67	5	—	—
15	3,917									—	—	3	26	64	6	1
16	3,773										—	1	5	29	59	6
17	3,597										—	—	1	5	27	66
18	1,052												—	3	15	81
19	204												3	2	13	82
20	63										9			4	16	70

— Indicates less than 1 percent.

NOTE: Because of rounding, percents may not add to 100. The symbol — indicates <0.5 percent. For the NHES, the current grade of kindergarten (K) includes grades classified as kindergarten, transitional kindergarten, and prefirst grade. For the CPS, kindergarten includes full-day and part-day kindergarten. In the NHES, center-based care includes care in nursery school, preschool, Head Start, and prekindergarten. In the CPS, center based care includes only nursery school, preschool, and prekindergarten. Age in the NHES:1999 was recalculated to match the CPS definition of the child's age as of September 30, 1998. Home schoolers are excluded from the NHES estimates, but not the CPS estimates.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999. U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), October 1997.

Table 8-2A.—Standard errors of the percent distribution of 0- through 20-year-olds enrolled and not enrolled in school: NHES:1999 Parent Interview

Child's age	Number of children (thousands)	Not enrolled	Child's current grade													
			Center-based care	K	1	2	3	4	5	6	7	8	9	10	11	12
NHES:1999																
0	4,504	0.0														
1	3,935	0.0														
2	3,841	0.67	0.67	*												
3	3,898	1.07	1.05	0.33												
4	3,767	1.08	1.08	0.65	*											
5	3,814	0.62	0.88	1.31	1.00	*										
6	4,209	*	*	1.04	1.15	0.60	*									
7	4,008				1.50	1.36	0.86									
8	4,006				*	1.32	1.37	0.54	*							
9	4,039						1.22	1.20	0.71	*						
10	4,027				*	*	0.41	1.13	1.27	0.72	*					
11	3,938					*	*	1.34	1.32	1.68	0.46	*				
12	3,912								0.47	1.32	1.41	0.49	*			
13	3,861								*	0.42	1.33	1.45	0.78	*		
14	3,788									*	0.85	1.13	1.34	0.82	*	
15	4,018										*	0.56	1.24	1.22	0.51	*
16	3,902											*	0.70	1.38	1.46	0.68
17	3,654										*		*	0.63	1.29	1.44
18	986													*	2.12	2.12
19	136				2.23									3.09	7.42	8.05
20	6														78.74	78.74

*Standard errors are not provided for estimates of less than 1 percent.

NOTE: Standard errors increase for children who are 19 and 20 years old. This is because there are small numbers of those children in the grade categories shown above.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999. U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), October 1997.

Estimates of differences in center-based participation rates according to income for children ages 3 through 5 years and not yet in kindergarten are presented in table 8-3 for all NHES administrations. The percentage of these children from high-income families who participate in some form of center-based arrangement has remained relatively stable since 1991, averaging about 74 percent. A change has occurred among 3- through 5-year-olds from low-income families, however. While estimates from the NHES:1991, NHES:1993, NHES:1995, and NHES:1996 placed participation among children from low-income families around 45 percent, some 30 percentage points below children from high-income families, the NHES:1999 estimated that 57 percent of children from low-income families are participating in center-based arrangements. This would indicate that in 1999 children from low-income families participated only 13 percent less than those from high-income families. This difference may be explained through an increasing availability of such programs as Head Start (see ACF 1999), which target children from low-income families.

Table 8-3.—Percent of 3- through 5-year-olds not yet in kindergarten participating in center-based care, by high and low income: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, NHES:1995 ECPP, NHES:1993 SR, and NHES:1991 ECE

Income level	NHES:1999		NHES:1996		NHES:1995		NHES:1993		NHES:1991	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
High income.....	70	1.5	72	1.6	76	1.8	75	1.4	73	1.6
Low income	57	3.2	43	2.9	49	3.2	47	2.0	45	2.5

NOTE: s.e. is standard error. Center-based arrangements include nursery schools, preschools, Head Start programs, and prekindergartens. High income was defined as household income of over $50,000. Low income was defined as household income of $10,000 or less.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education/Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Early Childhood Program Participation component, 1995; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Readiness component, 1993; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Early Childhood Education component, 1991.

Participation in care arrangements. Table 8-4 presents NHES:1999 and NHES:1995 estimates of participation in various types of care arrangements according to race/ethnicity. Notable differences are the increased percentages of Hispanic and black children participating in center-based programs. In the NHES:1999, 23 percent of Hispanics were in center-based arrangements versus 17 percent in the NHES:1995, and for black children, the respective percentages are 42 and 33. There is a corresponding decrease in the percent of Hispanic and black children whose parents reported they do not participate in nonparental care.

Table 8-4.—Percent of 0- through 5-year-olds not yet in kindergarten participating in different care arrangements, by race/ethnicity: NHES:1999 Parent Interview and NHES:1995 ECCP

Child's race/ethnicity	Number of children (thousands)	Participation in care arrangements							
		Relative care		Nonrelative care		Center-based care		Other*	
		Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
NHES:1999									
Hispanic	3,620	26	1.6	12	1.0	23	1.1	48	1.7
White, non-Hispanic	12,255	20	0.8	19	0.8	35	0.7	39	0.9
Black, non-Hispanic	2,953	37	2.3	14	1.3	42	2.0	25	1.8
Other	1,377	30	3.4	13	1.8	35	2.8	35	3.3
NHES:1995									
Hispanic	2,838	23	1.3	12	1.0	17	1.1	54	1.6
White, non-Hispanic	13,996	28	0.7	21	0.7	33	0.8	38	0.9
Black, non-Hispanic	3,344	31	1.8	12	1.2	33	1.8	34	2.0
Other	1,243	25	2.7	12	1.8	28	2.6	42	3.1

*This includes children not participating in any type of nonparental care.

NOTE: s.e. is standard error. Row percentages do not sum to 100 because children may participate in more than one child care arrangement or program. Center-based care includes nursery schools, preschools, Head Start programs, and prekindergartens.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Early Childhood Program Participation component, 1995.

Table 8-5 presents NHES:1999, NHES:1996, and NHES:1995 estimates of participation in center-based care according to income. Insignificant or slight increases were seen in participation across all income categories except that of $10,000 or less, $30,001 to $40,000, and $50,000 or over. The largest change was seen for the lowest income group, $10,000 or less. The NHES:1996 estimated that 44 percent of children from families in this income group participated in center-based care, while the NHES:1999 estimates that 57 percent participated. This change may be due to efforts to expand programs for low-income families (ACF 1999) and to emphasize to parents the importance of education at even the earliest ages. Differences in the other two income categories are between the NHES:1999 and the NHES:1995. For children in households with over $50,000 in income, the NHES:1999 showed 70 percent in center-based care, while the NHES:1995 estimated 76 percent. In contrast, the NHES:1999 estimated a higher percentage of children from households with incomes from $30,001 to $40,000 are in center-based care than did the NHES:1995 (55 percent versus 46 percent, respectively).

Table 8-5.—Percent of 3- through 5-year-olds not yet in kindergarten who are participating in center-based care, by household income: NHES:1999 Parent Interview, NHES:1996 PFI/CI, and NHES:1995 ECPP

Household income	NHES:1999		NHES:1996		NHES:1995	
	Percent	s.e.	Percent	s.e.	Percent	s.e.
$10,000 or less	57	3.2	44	2.9	49	3.2
$10,001 - $20,000	51	2.7	51	3.0	45	2.8
$20,001 - $30,000	51	2.4	47	2.7	45	2.1
$30,001 - $40,000	55	2.3	53	3.0	46	2.8
$40,001 - $50,000	60	2.8	59	3.0	56	3.0
Over $50,000	70	1.5	72	1.6	76	1.8

NOTE: s.e. is standard error. Center-based care includes nursery schools, preschools, Head Start programs, and prekindergartens.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education/Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Early Childhood Program Participation component, 1995.

School type and grade level. Comparisons of NHES:1999 and CPS:1997 estimates of school type and grade level are provided in tables 8-6 and 8-7. In general, the NHES:1999 estimated that there were slightly more students in private school than the CPS:1997 estimated, and subsequently, that there were slightly fewer students in public school. The NHES:1999 estimated that there were 45,646,782 children enrolled in public schools and 5,521,190 enrolled in private schools. The CPS:1997 estimated that there were 46,845,588 children enrolled in public schools and 4,857,801 enrolled in private schools. Estimates of the number of children at each grade level from kindergarten through grade 12 were comparable (this was expected to some degree because parent weights were raked to estimates of grade by home tenure from the CPS), with the only notable difference again being for children enrolled in center-based nursery school. Table 8-7 shows that estimates of the number of children at each grade level in public versus private schools were also comparable, even though the NHES:1999 estimated that there were slightly more children in private schools than did the CPS:1997.

Table 8-6.—Number of children age 3 through 12th grade, by school type and by student grade level: NHES:1999 Parent Interview and CPS:1997

School type and grade	NHES:1999		CPS:1997
	Number (thousands)	s.e. (thousands)	Number (thousands)
Total number of children age 3 through 12th grade	59,968	45	60,274
School type[1]			
Public	45,647	167	46,846
Private	5,521	146	4,858
Student grade level			
Not enrolled	3,637	38	4,071
Center-based/nursery school[2]	4,324	27	4,500
K	3,972	2	3,933
1	4,515	0	4,523
2	4,007	0	4,068
3	4,104	0	4,061
4	4,003	0	3,933
5	4,072	0	3,984
6	4,017	0	4,015
7	4,017	0	3,978
8	3,812	0	3,755
9	4,048	0	4,040
10	4,013	0	4,011
11	3,668	0	3,676
12	3,759	0	3,723

[1]Preschoolers and children who are home schooled are not included.

[2]In the NHES, center-based care includes care in nursery school, preschool, Head Start programs, and prekindergarten. In the CPS, center based care includes only nursery school, preschool, and prekindergarten.

NOTE: s.e. is standard error. Age in the NHES:1999 estimates was recalculated to match the CPS definition of the child's age as of September 30, 1998.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999. U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), October 1997.

Table 8-7.—Number and percent of children in grades K through 12 in public and private schools: NHES:1999 Parent Interview and CPS:1997

Child's current grade	School type					
	Public			Private		
	Number (thousands)	Percent	s.e.	Number (thousands)	Percent	s.e.
NHES:1999						
K	3,188	82	1.20	682	18	1.20
1	4,001	89	1.19	483	11	1.19
2	3,451	88	1.02	469	12	1.02
3	3,524	87	0.89	504	13	0.89
4	3,507	89	1.09	426	11	1.09
5	3,574	89	1.12	431	11	1.12
6	3,549	90	1.07	412	10	1.07
7	3,577	90	0.98	392	10	0.98
8	3,369	90	1.07	377	10	1.07
9	3,580	90	0.96	391	10	0.96
10	3,631	92	0.83	314	8	0.83
11	3,308	92	0.87	298	8	0.87
12	3,388	91	1.06	343	9	1.06
CPS:1997						
K	3,271	83	†	663	17	†
1	4,010	89	†	514	11	†
2	3,666	90	†	402	10	†
3	3,674	90	†	387	10	†
4	3,572	91	†	361	9	†
5	3,612	91	†	373	9	†
6	3,656	91	†	359	9	†
7	3,632	91	†	346	9	†
8	3,443	92	†	312	8	†
9	3,743	93	†	297	7	†
10	3,695	92	†	316	8	†
11	3,410	93	†	267	7	†
12	3,463	93	†	260	7	†

†Indicates data not available.

NOTE: s.e. is standard error. For the NHES:1999, kindergarten (K) includes grades reported as kindergarten, transitional kindergarten, and prefirst grade. For the CPS, kindergarten includes full-day or part-day kindergarten. Grades reported as nursery school, preschool, or prekindergarten are not included. Preschoolers and children who are home schooled are not included.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999. U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), October 1997.

Enrollment in public and private schools. NHES:1999 and CPS:1997 estimates of enrollment in public and private schools by race/ethnicity are presented in table 8-8. The estimates for public versus private enrollment among Hispanics were nearly identical for the two surveys. There was a small difference in estimates for whites and for blacks. The NHES:1999 found that 87 percent of white children enrolled in kindergarten through 12th grade were enrolled in public schools and 13 percent in private, versus 89 percent in public and 11 percent in private as estimated by the CPS:1997. The NHES:1999 found that 93 percent of black children enrolled in kindergarten through 12th grade were enrolled in public schools and 7 percent in private, versus 95 percent in public and 5 percent in private as estimated by the CPS:1997.

Table 8-8.—Number and percent of children enrolled in kindergarten through 12th grade in public and private schools, by race/ethnicity: NHES:1999 Parent Interview and CPS:1997

Race/ethnicity	NHES:1999					CPS:1997		
	Number of children (thousands)	Public		Private		Number of children (thousands)	Public	Private
		Percent	s.e.	Percent	s.e.		Percent	Percent
White, non-Hispanic	33,224	87	0.40	13	0.40	33,383	89	11
Black, non-Hispanic	8,207	93	0.51	7	0.51	8,337	95	5
Hispanic	7,149	94	0.47	6	0.47	7,309	95	5
Other	2,645	88	1.26	12	1.26	2,673	90	10

NOTE: s.e. is standard error. Percentages include only those students for whom public/private enrollment was reported, that is, children whose parents indicated they were enrolled in school.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999. U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), October 1997.

Comparisons between the public and private school enrollment estimates for students in grades 3 through 12 from NHES:1999, and those from NHES:1996 and NHES:1993 are also presented. Table 8-9 shows public and private school enrollment by parents' highest level of education. The comparisons revealed no notable differences across public and private school enrollment by parents' highest level of education over the 3 time points.

Table 8-9.—Number and percent of children in 3rd through 12th grade in public and private school, by parents' highest level of education: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SS&D

Parents' highest level of education	NHES:1999					NHES:1996					NHES:1993				
	Number of children (thousands)	Public		Private		Number of children (thousands)	Public		Private		Number of children (thousands)	Public		Private	
		Percent	s.e.	Percent	s.e.		Percent	s.e.	Percent	s.e.		Percent	s.e.	Percent	s.e.
Less than high school	3,307	97	0.56	3	0.56	3,610	96	0.92	4	0.92	3,272	98	0.55	2	0.55
High school graduate.....	10,216	94	0.55	6	0.55	11,249	95	0.43	5	0.43	11,437	95	0.43	5	0.43
Some college	11,513	93	0.49	7	0.49	11,159	92	0.57	8	0.57	11,071	91	0.49	9	0.49
College graduate	6,567	84	0.88	16	0.88	5,653	85	1.01	15	1.01	4,157	86	1.25	14	1.25
Graduate school	7,292	81	1.00	19	1.00	5,576	80	1.34	20	1.34	5,007	83	0.95	17	0.95

NOTE: s.e. is standard error. Children who were home schooled are not included in the estimates for any survey year. Parents' highest level of education is the highest level of education of all parents/guardians in the household.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education/Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Safety and Discipline component, 1993.

Table 8-10 presents NHES:1999 and CPS:1997 estimates for school enrollment in kindergarten through 12th grade according to household income. The estimates from the two sources are extremely similar across all income categories, with differences in the estimates ranging from 0 to 2 percent. None of the differences reach statistical significance. The similarity in estimates is not surprising, given that the question wording from both surveys is very similar and that the determination of a school being public or private is generally a straightforward concept for respondents.

Table 8-10.—Number and percent of children enrolled in kindergarten through 12th grade in public and private schools, by household income: NHES:1999 Parent Interview and CPS:1997

Household income	NHES:1999					CPS:1997		
	Number of children (thousands)	Public		Private		Number of children (thousands)	Public	Private
		Percent	s.e.	Percent	s.e.		Percent	Percent
Less than $15,000	9,413	95	0.54	5	0.54	9,117	97	3
$15,001 to $30,000	10,649	95	0.41	5	0.41	9,397	95	5
$30,001 to $50,000	11,302	90	0.55	10	0.55	11,677	90	10
More than $50,000	19,861	83	0.60	17	0.60	16,628	85	15

NOTE: s.e. is standard error. Preschoolers and children who are home schooled are not included. CPS estimates exclude cases with missing income data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999. U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), October 1997.

In table 8-11, NHES:1999, NHES:1996, and NHES:1993 estimates of public and private school enrollment for children in grades 3 through 12 by urbanicity are presented. As was the case with public and private enrollment by parents' highest level of education, there were no differences across the three time points in public and private enrollment according to urbanicity. The NHES:1999 estimated that 87 percent of children in urban areas inside urbanized areas were in public schools, while the NHES:1996 and NHES:1993 estimates were 88 and 89 percent, respectively. Such similarity across the three times points also existed for those children living in rural areas and in urban areas outside an urbanized area.

School size. Comparisons of NHES:1999, NHES:1996, and NHES:1993 estimates concerning school size are presented in table 8-12. There was a slight decrease in the percentage of children attending schools with fewer than 300 students from 1996 to 1999. It was also found that a higher percentage of children were attending the largest schools in 1999 (28 percent) compared to 1996 and 1993 (22 percent and 24 percent, respectively).

Table 8-11.—Number and percent of children in 3rd through 12th grade in public and private schools, by urbanicity of ZIP code area: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SS&D

Urbanicity	NHES:1999					NHES:1996					NHES:1993				
	Number of children (thousands)	Public		Private		Number of children (thousands)	Public		Private		Number of children (thousands)	Public		Private	
		Percent	s.e.	Percent	s.e.		Percent	s.e.	Percent	s.e.		Percent	s.e.	Percent	s.e.
Urban, inside urbanized area	24,350	87	0.46	13	0.46	22,466	88	0.50	12	0.50	20,952	89	1.23	11	1.23
Urban, outside urbanized area	4,652	93	0.78	7	0.78	5,042	93	0.78	7	0.78	5,111	95	0.90	5	0.90
Rural	9,892	95	0.56	5	0.56	9,739	94	0.54	6	0.54	8,882	95	0.75	5	0.75

NOTE: s.e. is standard error. Children who were home schooled are not included in the estimates for any survey year.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education/Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Safety and Discipline component, 1993.

Table 8-12.—Percent of children in 3rd through 12th grade, by school size: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SS&D

School size	NHES:1999		NHES:1996		NHES:1993	
	Percent	s.e.	Percent	s.e.	Percent	s.e.
Under 300	14	0.47	18	0.34	15	0.63
300-599	35	0.50	39	0.48	38	0.60
600-999	23	0.42	22	0.38	23	0.49
1,000 or more	28	0.48	22	0.41	24	0.84

NOTE: s.e. is standard error. Because of rounding, percents may not add to 100. The NHES:1999 Parent Interview and NHES:1996 Parent PFI/CI data reported here include only children in grades 3 through 12 in order to match the NHES:1993 SS&D data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education/Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Safety and Discipline component, 1993.

and a lower percentage were attending schools with enrollments of 300 to 599 in 1999 (35 percent) compared to 1996 and 1993 (39 percent and 38 percent, respectively). This may reflect a trend toward larger schools that may offer economies of scale.

Family structure and household urbanicity. Estimates of the percentage of children in grades 3 through 12 by certain family structures and by household urbanicity for NHES:1999, NHES:1996, and NHES:1993 are presented in table 8-13. Little change occurred, with most differences being between 1 and 3 percentage points. The only change that was greater occurred between 1993 and 1999, with the NHES:1999 estimating that 66 percent of households had both a mother and father versus an estimated 70 percent in the NHES:1993. This modest difference may reflect the continuing increase in the number of unmarried mothers (U.S. Department of Commerce 1999).

Household income. Tables 8-14 through 8-16A show estimates of household income. Tables 8-14 and 8-15 present estimate comparisons for the NHES and CPS; tables 8-16 and 8-16A present comparisons of the NHES:1999 with previous NHES estimates.

NHES and CPS estimates of the percentage of children age 0 through 12th grade who reside in households within particular income ranges are shown in table 8-14. Across income categories, estimates from both surveys were similar. The only differences of more than 1 percentage point were found within the two highest income categories. The NHES:1999 estimated that 16 percent of children resided in households in the $50,000 to $75,000 range and 21 percent resided in the over $75,000 range. In contrast,

Table 8-13.—Percent of children in 3rd through 12th grade, by family structure and urbanicity of ZIP code area: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SS&D

Family structure/urbanicity	NHES:1999		NHES:1996		NHES:1993	
	Percent	s.e.	Percent	s.e.	Percent	s.e.
Family structure						
Mother and father	66	0.45	69	0.53	70	0.59
Mother	26	0.45	24	0.50	24	0.50
Father	4	0.21	3	0.19	3	0.20
Nonparent guardian(s)	4	0.25	4	0.24	3	0.31
Household urbanicity						
Urban, inside urbanized area	62	0.46	60	0.51	60	0.99
Urban, outside urbanized area	12	0.41	14	0.42	15	0.54
Rural	26	0.35	26	0.29	25	0.94

NOTE: s.e. is standard error. The NHES:1999 Parent Interview and NHES:1996 Parent PFI/CI data reported here include only children in grades 3 through 12 in order to match the NHES:1993 SS&D. Mother and father refer to birth, adoptive, step, or foster parents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education/Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Safety and Discipline component, 1993.

the CPS:1997 estimated that a slightly higher percentage of children, 19 percent, resided in the $50,000 to $75,000 range while a slightly lower percentage, 16 percent, resided in the over $75,000 range. The NHES:1999 estimates were raked to income figures from the 1997:CPS using three income categories: $10,000 or less; $10,001-$25,000; and over $25,000. Had these finer income categories been used for comparison, the differences between NHES:1999 and CPS:1997 would have been within 1 percentage point.

Few differences are revealed in table 8-15, which compares NHES:1999 and CPS:1997 estimates of household income by race/ethnicity for children age 3 through 12th grade. The only significant differences for whites were that the NHES:1999 showed a higher percentage of whites in the highest income category (48 versus 45 percent in the CPS:1997) and a lower percentage in the second highest income category (25 versus 28 percent in the CPS:1997). Similarly, the NHES:1999 found that there were a higher percentage of Hispanics in the highest income category (15 percent versus 11 percent in the CPS:1997) and a lower percentage of Hispanics in the second highest income category (16 percent versus 19 percent in the CPS:1997). These differences are related to the finding that the NHES:1999 estimated that more people are at a higher income level than did the CPS:1997.

Table 8-14.—Percent of children age 0 through 12th grade, by household income: NHES:1999 Parent Interview and CPS:1997

Household income	NHES:1999		CPS:1997
	Percent	s.e.	Percent
$5,000 or less	5	0.23	5
$5,001 to $10,000	8	0.23	7
$10,001 to $15,000	7	0.22	8
$15,001 to $20,000	7	0.23	6
$20,001 to $25,000	8	0.24	7
$25,001 to $30,000	6	0.22	7
$30,001 to $35,000	6	0.22	7
$35,001 to $40,000	6	0.17	7
$40,001 to $50,000	10	0.25	11
$50,001 to $75,000	16	0.36	19
Over $75,000	21	0.36	16

NOTE: s.e. is standard error. CPS estimates exclude cases with missing income data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999. U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), October 1997.

Table 8-15.—Number and percent of children age 3 through 12th grade, by household income level and race/ethnicity: NHES:1999 Parent Interview and CPS:1997

Race/ethnicity	Number of children (thousands)	Household income							
		Less than $15,000		$15,001 to $ 30,000		$30,001 to $50,000		More than $50,000	
		Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
NHES:1999									
White, non-Hispanic	46,121	10	0.28	17	0.37	25	0.46	48	0.56
Black, non-Hispanic	11,228	41	0.71	28	0.82	17	0.64	14	0.65
Hispanic	10,840	36	0.71	33	0.87	16	0.59	15	0.57
Other	4,060	18	1.78	24	1.91	22	1.54	36	1.80
CPS:1997									
White, non-Hispanic	38,695	11	†	16	†	28	†	45	†
Black, non-Hispanic	9,689	42	†	25	†	19	†	14	†
Hispanic	8,824	38	†	32	†	19	†	11	†
Other	3,065	18	†	19	†	24	†	40	†

†Indicates data not available.

NOTE: s.e. is standard error. Because of rounding, percents may not add to 100. CPS estimates exclude cases with missing income data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999. U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), October 1997.

Table 8-16 presents NHES:1999, NHES:1996, and NHES:1993 estimates of household income by urbanicity for children age 3 through 2nd grade. Between 1993 and 1999, there were significant increases in the percentage of children living in households with income more than $50,000. For example, in 1993, 14 percent of children living in rural areas were in households with an income of more than $50,000 versus 31 percent in 1999. Increases in the percentage of children living in households in the highest income level group were seen in all three urbanicity categories between 1993 and 1999 and between 1996 and 1999 with the exception of those in urban locations outside of urbanized areas where there was an increase between 1993 and 1999, but not between 1996 and 1999.

Table 8-16.—Number and percent of children age 3 through 2nd grade, by household income and urbanicity of ZIP code area: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SR

Urbanicity	Household income								
	Number of children (thousands)	Less than $15,000		$15,001 to $30,000		$30,001 to $50,000		More than $50,000	
		Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
NHES:1999									
Urban, inside urbanized area	13,425	23	0.74	21	0.64	20	0.71	35	0.76
Urban, outside urbanized area	2,432	21	1.75	24	1.73	26	1.95	29	2.13
Rural	5,223	21	1.41	23	1.43	25	1.29	31	1.23
NHES:1996									
Urban, inside urbanized area	13,698	26	0.75	22	0.72	23	0.82	29	0.73
Urban, outside urbanized area	2,727	24	1.81	29	1.82	26	1.54	22	1.54
Rural	4,765	23	1.62	27	1.34	30	1.26	20	1.17
NHES:1993									
Urban, inside urbanized area	12,820	28	0.64	25	0.73	24	0.59	24	0.68
Urban, outside urbanized area	2,860	30	1.91	28	1.68	27	1.50	14	1.36
Rural	4,433	24	1.30	32	1.11	30	1.16	14	0.95

NOTE: s.e. is standard error. Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education/Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Readiness component, 1993.

Table 8-16A looks at the same household income level by urbanicity information for children in 3rd through 12th grade. The pattern of differences among estimates for this older group of children is similar to that found for the younger group presented in table 8-16. In 1999, a higher percentage of children was estimated to be living in the highest income group and lower percentages were found to be living in the second highest and lowest income groups. For example, the NHES:1993 estimates that 19 percent of children in 3rd through 12th grade living in rural areas were in households with an income of more than $50,000, versus 26 percent in the NHES:1996 and 35 percent in the NHES:1999. This difference may be attributed to the past decade of economic growth, which has increased both jobs and wages, particularly for the upper income households.

Table 8-16A.—Number and percent of children in 3rd through 12th grade, by household income level and urbanicity of ZIP code area: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SS&D

Urbanicity	Household income								
	Number of children (thousands)	Less than $15,000		$15,001 to $30,000		$30,001 to $50,000		More than $50,000	
		Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
NHES:1999									
Urban, inside urbanized area	24,674	17	0.50	20	0.57	20	0.58	43	0.58
Urban, outside urbanized area	4,751	18	1.52	20	1.33	26	1.39	36	1.74
Rural	10,089	16	1.10	23	1.13	26	1.03	35	1.16
NHES:1996									
Urban, inside urbanized area	22,739	21	0.53	21	0.59	24	0.55	34	0.66
Urban, outside urbanized area	5,148	21	1.67	24	1.32	27	1.34	28	1.42
Rural	9,920	19	1.10	26	1.00	29	0.93	26	1.01
NHES:1993									
Urban, inside urbanized area	20,952	23	0.57	23	0.57	25	0.50	29	0.70
Urban, outside urbanized area	5,111	24	1.71	27	1.21	29	1.32	20	1.19
Rural	8,882	19	0.81	31	1.08	31	1.64	19	1.04

NOTE: s.e. is standard error.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education/Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Safety and Discipline component, 1993.

Parents' highest level of education. Tables 8-17 through 8-19A present NHES:1999, NHES:1996, and NHES:1993 estimates related to parents' highest level of education. Distributions of parents' highest level of education are broken out according to race/ethnicity, income, and household urbanicity.

Table 8-17 looks at NHES estimates of parents' highest level of education by race/ethnicity. Overall, there were small but steady decreases in the percentages of white and Hispanic children age 3 through 2nd grade with parents whose highest education was high school graduate. Specifically, 24 percent of white children had high school educated parents in 1999 as compared with 29 percent in 1996 and 32 percent in 1993. Similarly, 29 percent of Hispanic children had high school educated parents in 1999 as compared with 34 percent in 1996 and 37 percent in 1993. In a complementary trend, a higher percentage of white, black, and Hispanic children were estimated to come from homes with parents whose highest level of education was a college degree in 1999 than was the case in 1993. For example, 22 percent of white children were estimated to have parents whose highest level of education was a college degree in 1999 as compared with 16 percent in 1993. For Hispanic children, this statistic increased from 5 percent in 1993 to 9 percent in 1999, and it was estimated that 10 percent of black children in 1999 had parents whose highest level of education was a college degree as compared to 6 percent in 1993. Table 8-17A presents estimates for parents of children in 3rd through 12th grade. The analogous change for these older children is found among whites; 20 percent of white children had parents whose highest level of education was a college degree in 1999 versus 14 percent in 1993. Black children showed an increase in the percentage having parents whose highest level of education was a graduate education, from 5 percent in 1996 to 9 percent in 1999.

The next pair of tables, tables 8-18 and 8-18A, examines estimates of parents' highest education level by household income for children age 3 through 2nd grade and 3rd through 12th grade, respectively. Few changes in education level by income were seen between 1993, 1996, and 1999. For children age 3 through 2nd grade, a slightly higher percentage in 1999 had parents in the highest income group whose highest level of education was high school graduate compared to 1993 (13 percent in 1999 versus 9 percent in 1993). On the other hand, a slightly lower percentage of children from 1999 households in the $15,001 to $30,000 income group were found to have parents whose highest level of education was high school graduate compared to 1993 (37 percent in 1999 versus 44 percent in 1993). At the same time, a higher percentage of children age 3 through 2nd grade from the lower two household income groups had parents whose highest level of education was at the graduate school level. For example, 8 percent of children in the $15,001 to $30,000 household income group were reported as

Race/ethnicity	Number of children (thousands)	Less than high school		High school		Some college		College graduate		Graduate school	
		Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
NHES:1999											
White, non-Hispanic	12,969	3	0.41	24	0.83	31	0.97	22	0.82	19	0.90
Black, non-Hispanic	3,481	12	1.45	40	1.92	31	1.59	10	0.96	8	0.88
Hispanic	3,471	27	1.50	29	1.39	28	1.39	9	0.84	7	0.95
Other	1,159	5	1.20	24	2.82	28	2.85	19	2.44	24	2.63
NHES:1996											
White, non-Hispanic	13,612	5	0.46	29	0.87	32	0.88	19	0.65	15	0.62
Black, non-Hispanic	3,543	16	1.75	41	2.04	30	1.66	8	0.80	5	0.70
Hispanic	3,180	26	1.46	34	1.43	26	1.66	9	0.87	5	0.65
Other	879	6	1.35	27	2.93	29	2.60	21	2.75	17	1.94
NHES:1993											
White, non-Hispanic	13,691	4	0.29	32	0.87	34	0.83	16	0.57	15	0.60
Black, non-Hispanic	3,150	15	1.47	41	1.71	33	1.64	6	0.57	4	0.52
Hispanic	2,409	28	1.60	37	1.70	25	1.52	5	0.59	5	0.64
Other	863	7	1.73	25	2.88	28	3.16	16	2.37	24	3.13

NOTE: s.e. is standard error. Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education/Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Readiness component, 1993.

Table 8-17A.—Number and percent of children in 3rd through 12th grade, by parents' highest level of education and race/ethnicity: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SS&D

Race/ethnicity	Parents' highest level of education									
	Number of children (thousands)	Less than high school		High school		Some college		College graduate		Graduate school	
		Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
NHES:1999											
White, non-Hispanic	26,193	3	0.26	23	0.62	31	0.76	20	0.63	23	0.60
Black, non-Hispanic	6,053	13	1.18	39	1.63	29	1.36	10	0.83	9	0.74
Hispanic	5,170	31	1.62	28	1.24	24	1.04	9	0.83	7	0.66
Other	2,098	8	1.67	23	2.05	26	2.70	20	2.03	23	2.43
NHES:1996											
White, non-Hispanic	25,722	4	0.35	28	0.63	32	0.59	18	0.54	18	0.49
Black, non-Hispanic	5,783	15	1.00	40	1.60	30	1.48	9	0.79	5	0.52
Hispanic	4,694	33	1.34	31	1.38	21	1.12	7	0.85	8	0.87
Other	1,608	6	1.12	24	2.21	32	2.43	19	1.76	19	1.86
NHES:1993											
White, non-Hispanic	24,204	4	0.91	31	1.36	33	0.66	14	0.87	17	1.15
Black, non-Hispanic	5,506	17	4.32	42	4.80	30	3.15	6	3.35	6	2.61
Hispanic	3,921	30	3.99	34	1.52	26	1.89	5	1.61	6	1.54
Other	1,313	9	1.38	26	5.56	27	3.53	17	3.07	22	4.98

NOTE: s.e. is standard error. Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education/Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Safety and Discipline component, 1993.

Table 8-18.—Number and percent of children age 3 through 2nd grade, by parents' highest level of education and household income: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SR

Household income	Parents' highest level of education										
	Number of children (thousands)	Less than high school		High school		Some college		College graduate		Graduate school	
		Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
NHES:1999											
Less than $15,000	4,737	22	1.33	42	1.75	28	1.42	3	0.52	4	0.71
$15,001 to $30,000	4,659	12	1.03	37	1.67	35	1.51	8	0.87	8	0.97
$30,001 to $50,000	4,605	3	0.60	27	1.34	39	1.54	19	1.19	12	1.00
More than $50,000	7,079	1	0.16	13	1.00	23	1.01	33	1.29	30	1.41
NHES:1996											
Less than $15,000	5,321	25	1.51	43	1.98	28	1.59	3	0.44	2	0.41
$15,001 to $30,000	5,075	12	1.05	43	1.31	34	1.49	8	0.74	3	0.58
$30,001 to $50,000	5,292	2	0.48	30	1.19	38	1.12	19	1.12	11	0.82
More than $50,000	5,527	1	0.22	12	0.81	24	1.04	32	1.18	31	1.01
NHES:1993											
Less than $15,000	5,467	22	1.07	48	1.52	26	1.31	2	0.34	3	0.56
$15,001 to $30,000	5,397	8	0.62	44	1.50	37	1.37	7	0.72	4	0.50
$30,001 to $50,000	5,161	2	0.33	29	0.99	38	1.03	19	0.97	12	0.82
More than $50,000	4,088	1	0.12	9	0.70	27	1.24	28	1.18	36	1.52

NOTE: s.e. is standard error. Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education/Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Readiness component, 1993.

Table 8-18A.—Number and percent of children 3rd through 12th grade, by parents' highest level of education and household income: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SS&D

Household income	Parents' highest level of education									
	Number of children (thousands)	Less than high school		High school		Some college		College graduate		Graduate school	
		Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
NHES:1999											
Less than $15,000.....	6,682	24	1.37	40	1.71	24	1.39	6	0.76	7	0.83
$15,001 to $30,000.....	8,152	15	0.96	39	1.31	33	1.10	7	0.65	6	0.63
$30,001 to $50,000.....	8,725	4	0.45	28	1.06	38	1.08	17	0.86	13	0.84
More than $50,000	15,954	1	0.21	13	0.60	26	0.82	27	0.83	33	0.80
NHES:1996											
Less than $15,000.....	7,694	30	1.20	40	1.36	23	1.38	4	0.74	3	0.49
$15,001 to $30,000.....	8,652	12	0.84	43	1.19	32	1.28	8	0.72	5	0.51
$30,001 to $50,000.....	9,657	3	0.31	31	0.87	38	1.11	17	0.83	11	0.67
More than $50,000	11,803	1	0.17	13	0.71	26	0.77	26	0.86	34	0.92
NHES:1993											
Less than $15,000.....	7,683	25	1.04	45	1.36	24	1.32	3	0.46	2	0.42
$15,001 to $30,000.....	9,052	11	0.81	43	1.41	34	1.10	6	0.66	5	0.59
$30,001 to $50,000.....	9,339	3	1.30	33	0.77	38	1.32	14	0.64	13	0.64
More than $50,000	8,821	1	0.15	12	0.57	29	0.92	23	0.79	35	0.95

NOTE: s.e. is standard error. Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education/Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Safety and Discipline component, 1993.

Table 8-19.—Number and percent of children age 3 through 2nd grade, by parents' highest level of education and urbanicity of ZIP code area: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SR

Urbanicity	Parents' highest level of education									
	Number of children (thousands)	Less than high school		High school		Some college		College graduate		Graduate school	
		Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
NHES:1999											
Urban, inside urbanized area	13,425	10	0.52	25	0.97	30	0.94	19	0.71	17	0.85
Urban, outside urbanized area	2,432	7	1.04	29	2.34	32	2.18	17	1.59	15	1.49
Rural	5,223	7	0.98	33	1.59	32	1.59	15	1.21	13	1.13
NHES:1996											
Urban, inside urbanized area	13,698	11	0.66	28	0.87	30	0.84	17	0.61	14	0.58
Urban, outside urbanized area	2,727	9	1.22	35	1.76	32	1.67	14	1.17	10	1.03
Rural	4,765	8	1.04	39	1.75	33	1.49	12	0.94	8	0.78
NHES:1993											
Urban, inside urbanized area	12,820	9	0.47	30	0.85	32	0.82	14	0.58	14	0.66
Urban, outside urbanized area	2,860	8	0.88	37	1.75	33	1.61	12	1.14	10	1.00
Rural	4,433	8	1.05	43	1.48	31	1.13	10	0.78	8	0.71

NOTE: s.e. is standard error. Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education/Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Readiness component, 1993.

Table 8-19A.—Number and percent of children in 3rd through 12th grade, by parents' highest level of education and urbanicity of ZIP code area: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SS&D

Urbanicity	Parents' highest level of education										
	Number of children (thousands)	Less than high school		High school		Some college		College graduate		Graduate school	
		Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
NHES:1999											
Urban, inside urbanized area	24,674	9	0.42	24	0.59	28	0.57	19	0.50	21	0.56
Urban, outside urbanized area	4,751	8	0.90	28	1.64	33	1.67	13	1.11	18	1.30
Rural	10,089	7	0.60	32	1.22	32	1.31	15	0.98	14	0.93
NHES:1996											
Urban, inside urbanized area	22,739	10	0.44	27	0.66	29	0.78	17	0.51	17	0.59
Urban, outside urbanized area	5,148	9	1.08	33	1.51	31	1.47	14	1.00	13	1.24
Rural	9,920	8	0.86	36	1.10	32	1.01	13	0.78	12	0.69
NHES:1993											
Urban, inside urbanized area	20,952	9	1.05	30	2.52	31	1.18	13	1.22	17	1.37
Urban, outside urbanized area	5,111	10	1.29	35	2.17	33	1.33	11	1.36	11	1.61
Rural	8,882	9	1.89	38	1.95	32	1.51	10	0.93	11	0.75

NOTE: s.e. is standard error. Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education/Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Safety and Discipline component, 1993.

having parents whose highest level of education was graduate school in 1999, compared to only 4 percent in 1993 and 3 percent in 1996. This could be due to an increased number of parents currently enrolled in graduate school compared to 1993. This is based on the assumption that those in graduate school generally earn less than those who have finished their graduate education. With the exception of the observation reported for the highest income group, the differences observed for parents of children age 3 through 2nd grade were also found for parents of children in 3rd through 12th grade, as seen in table 8-18A.

Finally, tables 8-19 and 8-19A present estimate comparisons for parents' highest education level according to household urbanicity. Little significant change is seen between 1996 and 1999. The differences from 1993 to 1999 that reach significance show a similar trend to that discussed for parent education level except that, unlike, with income level, differences here were consistent across urbanicity categories. Notably, in 1999, a higher percentage of children age 3 through 2nd grade and children in 3rd through 12th grade had parents with a college or graduate education than did so in 1993. For example, in 1993, 11 percent of children in 3rd through 12th grade living outside an urbanized area had parents with a graduate school education, as compared to 18 percent in 1999. In contrast, there was a decrease in the percentage of children with parents who had finished their education with a high school diploma. For example, the NHES:1999 estimated that 24 percent of 3rd through 12th graders inside urban areas had parents with only a high school diploma, down from 27 percent in 1996. The NHES:1999 also found (not shown here) an increase in the percentage of adults involved in education activities.

Race/ethnicity. Comparisons of estimates for race/ethnicity are shown in tables 8-20 through 8-21A. Table 8-20 presents estimates of race/ethnicity for children in grades K through 12 from the NHES:1999 and CPS:1997. Both surveys produced identical estimates across racial/ethnic groups due to the raking of the NHES:1999 weights to the black, non-Hispanic, and Hispanic race/ethnicity categories.

Tables 8-21 and 8-21A provide NHES:1999, NHES:1996, and NHES:1993 estimates of race/ethnicity by urbanicity for children age 3 through 2nd grade and 3rd through 12th grade, respectively. The estimates obtained in 1993 and 1996 were similar to those found in 1999. No significant changes were observed for children in 3rd through 12th grade. For the younger group, a somewhat lower percentage of whites and higher percentage of Hispanics were estimated to live inside urbanized areas. In 1999, an estimated 52 percent of children in urbanized areas were white as compared to 56 percent in 1996 and 61 percent in 1993. An estimated 21 percent of children in urbanized areas were Hispanic in 1999, as compared to 18 percent in 1996 and 15 percent in 1993. These observations fit with the fact that the Hispanic population is growing rapidly (see U.S. Census Bureau 2000).

Table 8-20.—Percent of children in grades K through 12, by race/ethnicity: NHES:1999 Parent Interview and CPS:1997

Student race/ethnicity	NHES:1999		CPS:1997
	Percent	s.e	Percent
White, non-Hispanic	65	0.32	65
Black, non-Hispanic	16	0.19	16
Hispanic	14	0.16	14
Other	5	0.24	5

NOTE: s.e. is standard error. Student is a child in grades K-12.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999. U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), October 1997.

Table 8-21.—Number and percent of children age 3 through 2nd grade, by race/ethnicity and urbanicity of ZIP code area: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SR

Urbanicity	Race/ethnicity								
	Number of children (thousands)	White, non-Hispanic		Black, non-Hispanic		Hispanic		Other	
		Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
NHES:1999									
Urban, inside urbanized area	13,425	52	0.88	21	0.69	21	0.53	6	0.44
Urban, outside urbanized area	2,432	72	2.06	9	1.32	14	1.21	6	1.08
Rural	5,223	81	1.19	9	0.98	7	0.80	3	0.57
NHES:1996									
Urban, inside urbanized area	13,698	56	0.86	21	0.71	18	0.64	4	0.30
Urban, outside urbanized area	2,727	73	1.80	10	1.25	14	1.40	3	0.59
Rural	4,765	82	1.26	8	0.89	5	0.71	4	0.57
NHES:1993									
Urban, inside urbanized area	12,820	61	0.59	19	0.45	15	0.31	5	0.36
Urban, outside urbanized area	2,860	75	2.08	12	1.49	9	1.21	4	0.61
Rural	4,433	85	1.15	8	1.02	5	0.74	1	0.25

NOTE: s.e. is standard error. Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education/Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Readiness component, 1993.

Table 8-21A.—Number and percent of children in 3rd through 12th grade, by race/ethnicity and urbanicity of ZIP code area: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SS&D

Urbanicity	Race/ethnicity								
	Number of children (thousands)	White, non-Hispanic		Black, non-Hispanic		Hispanic		Other	
		Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
NHES:1999									
Urban, inside urbanized area	24,674	58	0.63	19	0.50	16	0.38	6	0.42
Urban, outside urbanized area	4,751	73	1.58	9	1.12	13	0.99	5	0.70
Rural	10,089	83	0.89	9	0.61	5	0.54	3	0.48
NHES:1996									
Urban, inside urbanized area	22,739	59	0.62	20	0.43	16	0.39	5	0.25
Urban, outside urbanized area	5,148	77	1.37	9	1.10	11	0.90	3	0.45
Rural	9,920	84	0.82	9	0.71	5	0.53	3	0.36
NHES:1993									
Urban, inside urbanized area	20,952	60	1.35	20	1.47	15	2.96	5	0.47
Urban, outside urbanized area	5,111	77	2.23	10	2.53	10	3.99	3	0.79
Rural	8,882	86	1.14	9	0.79	4	1.27	2	0.52

NOTE: s.e. is standard error. Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education/Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Safety and Discipline component, 1993.

Family involvement. Tables 8-22 through 8-24 provide comparative estimates related to family involvement in children's schools. Table 8-22 compares NHES:1999 and NHES:1996 estimates of children whose parents reported that they were contacted by schools with estimates of contacts from the NELS:88. Only 8th-grade students were included in the analyses of the NHES data in order to provide comparable estimates for comparisons with the NELS:88 baseline data, which were only collected for students in the 8th grade. The estimates vary between the NHES and NELS:88, with the NELS:88 estimates indicating more contact between schools and students' families. This is probably due in large part to differences in question wording. The NHES specifically asked if parents or other adult household members have been contacted by the school or teachers about academic or behavior problems their child is having, while the NELS:88 question asked only if the school has contacted the respondents about academic

performance. Thus the broader wording of NELS:88 would include contacts about good academic performance and possibly by individuals outside of the definition of "teacher" or "school." There were no significant differences between NHES:1996 and NHES:1999 estimates of school contact related to behavior problems. The difference between NHES estimates of school contact related to academic problems did reach significance, with the NHES:1996 estimating that 66 percent of children had parents who had never been contacted about academic problems and the NHES:1999 estimating that 73 percent had never been contacted about academic problems.

Table 8-22.—Percent of 8th-grade students whose parents reported selected school contacts with family: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and the National Education Longitudinal Study of 1988 (NELS:88)

School efforts to contact family	NHES:1999		NHES:1996		NELS:88
	Percent	s.e.	Percent	s.e.	Percent
School never contacted parents about student's academic performance	73	1.64	66	1.71	45
School never contacted parents about student's behavior	76	1.65	73	1.33	69

NOTE: s.e. is standard error. The NHES:1999 and NHES:1996 included two questions about school contact, "Have any of (CHILD)'s teachers or (his/her) school consulted you (or other family or adult household members) about any problems (he/she) is having with school work this year?" and "Have any of (CHILD)'s teachers or (his/her) school consulted you (or other family or adult household members) about any behavior problems (he/she) is having in school this year?" The NELS:88 question asked, "Since your eighth-grader's school opened last fall, how many times have you been contacted by the school about the following ...your eighth-grader's academic performance? ...your eighth-grader's behavior

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education and Civic Involvement component, 1996. NELS:88 data published in Epstein, J.L., and Lee, S. 1992. National Patterns of School and Family Connections in the Middle Grades. In *The Family-School Connection: Theory, Research, and Practice*, edited by B. Ryan, G. Adams, T. Gullotta, R. Weissberg, and R. Hamptom. Thousand Oaks, CA: Sage Publications, 1995.

Between 1993 and 1999, there was no change in the percentage of children in grades 3 through 12 whose parents reported participating in two or three activities at their child's school; table 8-23 shows nearly identical estimates from the NHES:1993, NHES:1996, and NHES:1999. Table 8-24 also provides nearly identical estimates of parents' participation at their child's school when broken down into grade categories.

Table 8-23.—Percent of students in grades 3 through 12 whose parents reported that they participated in two or three activities in their child's school during the current school year: NHES:1999 Parent Interview, NHES:1996 PFI/CI, and NHES:1993 SS&D

Survey	Percent	s.e.
NHES:1999	62	0.50
NHES:1996	62	0.75
NHES:1993	63	0.85

NOTE: s.e. is standard error. Activities include attending a general school meeting, attending a school or class event, and acting as a volunteer at the school or serving on a school committee. In the NHES:1996, data for one of the three variables were collected for half of the sample. The other half of the sample was administered items that were worded slightly differently.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education/Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Safety and Discipline component, 1993.

Table 8-24.—Percent of students in grades 3 through 12 whose parents reported that they participated in two or three activities in their child's school during the current school year, by grade-level categories: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, and NHES:1993 SS&D

Grade category	NHES:1999		NHES:1996		NHES:1993	
	Percent	s.e.	Percent	s.e.	Percent	s.e.
Grades 3-5	73	0.85	73	1.3	74	1.1
Grades 6-8	64	0.88	63	1.2	62	1.5
Grades 9-12	52	0.91	53	1.2	53	1.0

NOTE: s.e. is standard error. Activities include attending a general school meeting, attending a school or class event, and acting as a volunteer serving on a school committee. In the NHES:1996, data for one of the three variables were collected for half of the sample. The other half of the sample was administered items that were worded slightly differently.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education/Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Safety and Discipline component, 1993.

Plans for postsecondary education. Table 8-25 provides a comparison of NHES:1999 and NELS:92 estimates of plans for postsecondary education. There is a small but significant difference in estimates of the percentage of 12th-grade students whose parents expected them to pursue postsecondary education. The NELS:92 estimated that 95 percent of 12th-grade students were expected to attend postsecondary schools, while the NHES:1999 estimated that 92 percent were expected to attend.

Table 8-25.—Percent of 12th-graders whose parents reported their children are planning postsecondary education: NHES:1999 Parent Interview and the National Education Longitudinal Study of 1988 (NELS:88, 1992 follow up)

Survey	Percent	s.e.
NHES:1999	92	0.97
NELS:92	95	†

†Indicates data not available.

NOTE: s.e. is standard error. The NELS (1988 and 1992 follow up) item asked parents how far they expected their teens to go in school (i.e., "less than high school," "high school," "vocational training," "college less than BA," "bachelor's degree," etc.). The percentage given represents positive responses to all but the first two categories. The NHES:1999 item asked parents whether their children would "attend school after high

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study (NELS) of 1988 (1992 follow-up).

Literacy-related activities with family members. Table 8-26 presents estimates of the percentage of 3- through 5-year-old children not yet in kindergarten whose family members read or told stories to them regularly in the past week. While the NHES:1995 and NHES:1996 produced estimates that were slightly higher than the estimate from the NHES:1999, only the difference between 1999 and 1995 is significant. The difference between the NHES:1999 and the NHES:1993 is also 3 percentage points, and it is significant. The small differences in percentage points may suggest that the percentage of children being read to by their parents on a daily basis or telling them stories three or more times a week has peaked at around 70 percent, in spite of continued efforts to increase awareness of the importance of reading early in a child's development.

Table 8-26.—Percent of children ages 3 through 5 whose parents reported reading or telling stories to them regularly: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, NHES:1995 ECPP, and NHES:1993 SR

Survey	Percent	s.e.
NHES:1999	69	0.99
NHES:1996	72	1.20
NHES:1995	72	0.70
NHES:1993	66	0.80

NOTE: s.e. is standard error. Children enrolled in kindergarten or above are not included. "Regularly" is defined as reading every day or telling a story three times a week or more.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education/Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Early Childhood Program Participation component, 1995; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Readiness component, 1993.

Disability. The final table presenting comparative estimates for the NHES:1999 Parent Interview relates to the percentage of children with specific disabilities (table 8-27). The estimates for each disability are similar across survey years. There were, however, small but significant increases in the percentage of children in several disability categories between 1993 and 1999. These categories include learning disability (5 percent in 1999, 3 percent in 1993), speech impairment (7 percent in 1999, 5 percent in 1993), another health impairment lasting 6 months or more (6 percent in 1999, 3 percent in 1993), and the total percentage of children with any type of disability (17 percent in 1999, 12 percent in 1993). While this last difference seems quite noticeable, the substantial difference in question wording between the two survey years is a very likely source of the differences in estimates. The 1999 data were gathered with the question "Does (CHILD) have any of the following disabilities?" and a separate question was used to determine if any current disability affected children's ability to learn. In contrast, the 1993 question asked if the child "ever had any of the following disabling conditions that adversely affected (his/her) ability to learn." Follow-up questions determined if children currently had any of the disabilities indicated. The specific criteria, "adversely affected (his/her) ability to learn," may have caused a lower incidence of reporting. However, it may also be the case that the increased publicity of disabilities (for example, attention deficit disorder) has led to increased testing and diagnosis of learning disabilities. This heightened awareness, coupled with an increased social acceptance of disabilities, may have led parents to be more likely to report children as being disabled.

The NHES:1999 Youth Interview Comparisons

The data comparisons for the Youth Interview include topics such as school and family characteristics, community service involvement, and plans for postsecondary education. Several data sources were used for comparisons, and a brief description of each follows.

The 1993 and 1996 National Household Education Surveys

Estimates from the 1993 and 1996 National Household Education Surveys (NHES:1993 and NHES:1996) can provide especially meaningful comparisons with the NHES:1999 Youth Interview data. For several NHES:1999 Youth Interview estimates, there exist corresponding estimates from the NHES:1993 School Safety and Discipline (SS&D) component and the NHES:1996 Youth Civic Involvement (CI) component that are based on identical or nearly identical item wording and sampling

Table 8-27.—Percent of children ages 3 through 8 with specific disabilities: NHES:1999 Parent Interview, NHES:1996 Parent PFI/CI, NHES:1995 ECPP, and NHES:1993 SR

Disability[1]	NHES:1999		NHES:1996		NHES:1995		NHES:1993	
	Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
Learning disability	5	0.3	5	0.3	4	0.2	3	0.2
Mental retardation	—	*	—	*	—	*	—	*
Speech impairment	7	0.4	7	0.4	6	0.2	5	0.2
Serious emotional disturbance	2	0.3	2	0.3	1	0.2	1	0.1
Deafness[2]	1	0.2	2	0.2	—	*	—	*
Another hearing impairment	NA	NA	—	*	1	0.1	1	0.1
Blindness[2]	3	0.3	3	0.2	—	*	—	*
Another visual impairment	NA	NA	—	*	2	0.2	3	0.2
An orthopedic impairment	1	0.1	2	0.2	1	0.1	1	0.1
Another health impairment lasting 6 months or more	6	0.3	6	0.3	5	0.3	3	0.2
Percent with a disability	17	0.5	18	0.6	15	0.4	12	0.3

— Indicates less than 1 percent.

* Standard errors are not provided for estimates of less than 1 percent.

[1] In the NHES:1995, NHES:1996, and NHES:1999, parents were asked whether the child currently had any of a list of disabilities. In the NHES:1993, the list of disabilities was preceded by the statement "that affects (his/her) ability to learn."

[2] The NHES:1996 and NHES:1999 combined questions about deafness or another hearing impairment. Questions about blindness or another visual impairment were also combined.

NOTE: s.e. is standard error.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Parent and Family Involvement in Education/Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Early Childhood Program Participation component, 1995; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Readiness component, 1993.

criteria. For the NHES:1993 SS&D component, interviews were conducted with 6,504 students in grades 6 through 12, whereas the Youth CI component of the NHES:1996 interviewed 8,043 youth in grades 6 through 12. Data collected in the NHES:1993 Youth SS&D and NHES:1996 Youth CI provide information on school and family characteristics, community service activities, and plans for postsecondary education with which to compare the estimates from the NHES:1999 Youth Interview.

National Survey of Volunteering and Giving Among Teenagers

The National Survey of Volunteering and Giving Among Teenagers provides trend data on volunteer activities and giving behavior of young people. It also assesses the influence of institutions such as schools in encouraging such behavior, measures youth attitudes about volunteering and giving, and examines factors that are associated with volunteering and giving. The 1996 Volunteering and Giving Survey, which had a sample of 1,007 teenagers from 12 to 17 years of age, is used to compare estimates with the NHES:1999 on items related to community service activities.

The National Education Longitudinal Study

The National Education Longitudinal Study (NELS:1988) is a longitudinal study of a cohort of students and their parents that provides trend data about the transition of students into high school, college, and careers. The base year file, containing data collected in 1988, contains records on a random sample of 24,599 students when they were in the 8th grade. The second follow up occurred approximately 4 years after the initial collection (1992) when many of the 8th-graders were in 12th grade; 91 percent of the original sample participated. NELS data included in this chapter are from the parent and student files. Comparisons are made with the NHES:1999 regarding the postsecondary education plans of 12th graders.

The 1965 National Survey of High School Seniors

In the 1965 National Survey of High School Seniors (NSHSS), high school seniors and their parents were administered an extensive series of questions about political socialization. A follow-up survey was administered to the sample in 1973. The NHES:1999 items are similar to those of the 1965 NSHSS, which had a sample size of 1,669 high school seniors, and only comparisons from that NSHSS administration are reported in this paper. Specifically, comparisons between the NHES:1999 and the NSHSS address the use of mass media for the national news and whether or not a speech against churches and religion should be allowed.

Youth Interview Findings

The NHES:1999 Youth Interview surveyed 7,913 students in grades 6 through 12 on a host of topics that provide meaningful comparisons with the above-mentioned studies. The following comparisons reveal parallel estimates for a variety of indicators, as well as differences that may reflect changing conditions and values for American youth.

Student attitudes toward school. Table 8-28 shows the percentage of 6th- through 12th-grade respondents in the NHES:1999 who say their friends think it is "very important" to work hard for good grades in school as compared with those in the NHES:1993 Youth SS&D component. The NHES:1999 reported 45 percent compared to the NHES:1993, which reported 38 percent. The difference of 7 percentage points may be due in part to an increased societal emphasis on the importance of education. In addition, demand for access to higher education has increased, possibly increasing the relevance of good grades for students.

Table 8-28—Percent of 6th- through 12th-graders who say their friends think it is "very important" to work hard for good grades in school: NHES:1999 Youth Interview and NHES:1993 Youth SS&D

Survey	Percent	s.e.
NHES:1999	45	0.68
NHES:1993	38	1.10

NOTE: s.e. is standard error.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Youth Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Safety and Discipline component, youth interview, 1993.

As table 8-29 shows, the percentage of 6th- through 12th-graders who "strongly agree" that they are challenged at school in the NHES:1999 (14 percent) is different from the NHES:1996 (17 percent) but not different from the NHES:1993 (15 percent). The same table shows that the percent of students who "strongly agree" that their teachers maintain discipline in the classroom in the NHES:1999 (24 percent) is not different from the NHES:1996 (22 percent) but is different from the NHES:1993 (21 percent), perhaps due to an increase in school safety and "no tolerance" rules at many schools.

Table 8-29.—Percent of 6th- through 12th-graders who "strongly agree" that they are challenged at school and that their teachers maintain discipline in the classroom: NHES:1999 Youth Interview, NHES:1996 Youth CI, and NHES:1993 Youth SS&D

Survey	Challenged at school		Teachers maintain discipline	
	Percent	s.e.	Percent	s.e.
NHES:1999	14	0.56	24	0.64
NHES:1996	17	0.50	22	0.60
NHES:1993	15	0.50	21	0.60

NOTE: s.e. is standard error.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Youth Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Youth Civic Involvement Interview, 1996; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, School Safety and Discipline component, youth interview, 1993.

Family practices. Table 8-30 shows the percentage of 6th- through 12th-graders in 1999 who reported that their families set rules for homework and amount of TV viewing as compared with those in 1996. Youth in 1999 were more likely (84 percent) than youth in 1996 (78 percent) to report that their families set rules for homework. Also, the reported percentage of parents who set rules for the amount of TV watching was higher for the NHES:1999 (38 percent) than for the NHES:1996 (34 percent). These increases may be attributed to an increase in educational standards, which require a greater amount of homework. In addition, the detrimental effects of excessive television watching on children has been a topic that has received increased media attention, so the difference may reflect an increase in concern regarding this issue. Another notable difference is the percentage of 6th- through 12th-graders whose families often talk over important family decisions with them (table 8-31). In the NHES:1996, 47 percent of youth reported their families did so, compared to 52 percent of youth in the NHES:1999, perhaps reflecting changing norms for intrafamily communication.

Table 8-30.—Percent of 6th- through 12th-graders who report their families set rules for homework and amount of TV viewing: NHES:1999 Youth Interview and NHES:1996 Youth CI

Survey	Rules for homework		Rules for amount of TV viewing	
	Percent	s.e.	Percent	s.e.
NHES:1999	84	0.55	38	0.67
NHES:1996	78	0.50	34	0.70

NOTE: s.e. is standard error.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Youth Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Youth Civic Involvement component, 1996.

Table 8-31.—Percent of 6th- through 12th-graders who report their families often talk over important family decisions with them: NHES:1999 Youth Interview and NHES:1996 Youth CI

Survey	Families often talk over important family decisions	
	Percent	s.e.
NHES:1999	52	0.68
NHES:1996	47	0.70

NOTE: s.e. is standard error.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Youth Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Youth Civic Involvement component, 1996.

Student employment and participation in student government. The percentage of 6th- through 12th-graders employed during the school year has remained the same (49 percent) according to the NHES:1996 and the NHES:1999 (table 8-32). However, there is a small difference between the NHES:1999 (23 percent) and the NHES:1996 (20 percent) regarding the percentage of 6th- through 12th-graders participating in student government during the school year (table 8-33). This might indicate a subtle shift in the direction of youth civic responsibility or changing school policies.

Table 8-32.—Percent of 6th- through 12th-graders employed during the school year: NHES:1999 Youth Interview and NHES:1996 Youth CI

Survey	Percent	s.e.
NHES:1999	49	0.62
NHES:1996	49	0.70

NOTE: s.e. is standard error.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Youth Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Youth Civic Involvement component, 1996.

Table 8-33.—Percent of 6th- through 12th-graders participating in student government during the school year: NHES:1999 Youth Interview and NHES:1996 Youth CI

Survey	Percent	s.e.
NHES:1999	23	0.69
NHES:1996	20	0.70

NOTE: s.e. is standard error.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Youth Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Youth Civic Involvement component, 1996.

Community service. The NHES:1999 Youth Interview estimates of the participation of 6th- through 12th-grade students in community service activities during the current school year were compared with estimates from the NHES:1996 and the 1996 Survey of Volunteering and Giving in the United States (table 8-34). In 1999, the NHES estimates that 52 percent of the students participated in some type of volunteer work, compared with 49 percent in the NHES:1996. This difference may be due to an increased emphasis on participation in community service activities. However, when the NHES:1999 is compared with Volunteering and Giving 1996, a difference in the opposite direction of 7 percentage points is found (52 percent in the NHES:1999 versus 59 percent in Volunteering and Giving). This difference may come from variations in methodology. For example, Volunteering and Giving 1996 obtained data through in-home, personal interviews. Perhaps more important is the fact that NHES asked about service during the current school year, whereas the Volunteering and Giving survey asked about the past year. This means the NHES did not cover the summer months when youth may have more time to volunteer.

Table 8-34.—Percent of youth who reported participation in community service activities: NHES:1999 Youth Interview, NHES:1996 Youth CI, and 1996 Volunteering and Giving Among Teenagers

Survey	Percent	s.e.
NHES:1999	52	0.79
NHES:1996	49	0.70
Volunteering and Giving: 1996.....	59	†

† Indicates data not available.

NOTE: s.e. is standard error. For the NHES studies, youth respondents ranged from 6th through 12th grades and answered about community service within the current school year. For the Volunteering and Giving survey, youth respondents ranged from 12 to 17 years of age and answered about community service within the last 12 months.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Youth Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Youth Civic Involvement component, 1996; Independent Sector, Volunteering and Giving Among Teenagers 12 to 17 Years of Age, 1996.

The percentage of youth who reported that their school requires a certain number of hours in community service was 21 percent in the NHES:1999, 18 percent in the NHES:1996, and 16 percent in Volunteering and Giving, 1996 (table 8-35). The difference between the NHES:1999 on the one hand and both of the 1996 studies on the other may be attributed to continuing changes in school policies with respect to requirements of community service.

Table 8-35.—Percent of youth who report that their school requires a certain number of hours in community service: NHES:1999 Youth Interview, NHES:1996 Youth CI, and 1996 Volunteering and Giving Among Teenagers

Survey	Percent	s.e.
NHES:1999	21	0.56
NHES:1996	18	0.60
Volunteering and Giving:1996.....	16	†

† Indicates data not available.

NOTE: s.e. is standard error. For the NHES studies, youth respondents ranged from 6th through 12th grades, whereas for the Volunteering and Giving survey, youth respondents ranged from 12 to 17 years of age.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Youth Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Youth Civic Involvement component, 1996; Independent Sector, Volunteering and Giving Among Teenagers 12 to 17 Years of Age, 1996.

Postsecondary education. Table 8-36 presents the estimates of 12th-graders who were planning to obtain postsecondary education. The NHES:1999 was compared to NELS:1988 (1992 follow up) and the difference in estimates was 3 percentage points (97 percent and 94 percent, respectively). This slight increase is consistent with the continual increase seen in the number of high school students attending postsecondary education (U.S. Bureau of the Census 1998).

Table 8-36.—Percent of 12th-graders who report plans for postsecondary education: NHES:1999 Youth Interview and the National Education Longitudinal Study of 1988 (NELS:88, 1992 follow up)

Survey	Percent	s.e.
NHES:1999	97	0.61
NELS:1988 (1992 follow-up)	94	†

† Indicates data not available.

NOTE: s.e. is standard error. The NELS:88 item asked teens how far they would get in school (i.e., "less than high school," "high school only," "less than 2 years of school," "more than 2 years of school," "trade school degree," "less than 2 years of college," "more than 2 years of college," etc.). The percentage presented represents positive responses to all but the first two categories. The NHES:1999 item asked youth whether they would "attend school after high school."

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Youth Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Youth Civic Involvement component, 1996; U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study (NELS) of 1998 (1992 follow-up).

Civic knowledge. In 1999, 34 percent of 9th- through 12th-grade students knew which job was held by Al Gore, compared to 16 percent in 1996 (table 8-37). This difference can be explained by the three additional years in which youth may have been exposed to information about Al Gore through the media. In addition, by 1999 Al Gore had declared his intent to run for president. As for knowing which national party is more conservative, there was no difference between 1999 and 1996 for 9th-

through 12th-graders. Unlike the question of who deems a law constitutional, this question appeals less to factual learning and more to political ideology and subjective assessment, and so it is not expected that any difference would occur.

The NHES:1999 percentage of 9th- through 12th-graders who know whose responsibility it is to determine whether a law is constitutional was compared to the percentage from the NHES:1996 survey. In 1999, 48 percent of 9th- through 12th-graders answered correctly, an increase from 41 percent in 1996. This difference may be explained by increased focus on factual learning in response to the demands for competency testing.

Table 8-37.—Percent of 9th- through 12th-graders who know which job is held by Al Gore, which party is more conservative, and whose responsibility it is to determine whether a law is constitutional: NHES:1999 Youth Interview and NHES:1996 Youth CI

Survey	Al Gore's job		More conservative party		Law is constitutional	
	Percent	s.e.	Percent	s.e.	Percent	s.e.
NHES:1999	34	0.50	9	0.38	48	1.53
NHES:1996	16	0.42	10	0.40	41	1.30

NOTE: s.e. is standard error.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Youth Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Youth Civic Involvement component, 1996.

The frequency of reading about national news in newspapers reported by 12th-grade students in the NHES:1999 differs substantially from the NSHSS 1965 study, but does not differ from the NHES:1996 (table 8-38). Seventeen percent of respondents in 1999 said they read the paper for national news almost everyday, 15 percent in 1996, and 46 percent in the NSHSS 1965. The more than 30 years between the NHES:1999 and the NSHSS 1965 surveys reveals a decrease in the percentage of 12th graders who read the national news: a considerably lower percentage of high school seniors read about the national news in 1999 than in 1965. With respect to the percentage of 12th-grade students who watch or listen to national news on a daily basis, the NHES:1999 estimate of 43 percent is similar to that of the NHES:1996 (40 percent) and the NSHSS (38 percent).

Table 8-38.—Percent of 12th-grade students reporting use of mass media for national news: NHES:1999 Youth Interview, NHES:1996 Youth CI, and 1965 National Survey of High School Seniors (NSHSS)

Frequency of media use	Read national news in newspapers		Watch or listen to national news	
	Percent	s.e.	Percent	s.e.
NHES:1999				
Almost every day	17	1.33	43	2.01
At least once a week	41	1.73	32	1.75
At least once a month	14	1.24	12	1.30
Hardly ever	28	1.79	13	1.28
NHES:1996				
Almost every day	15	1.50	40	2.00
At least once a week	31	1.90	33	2.00
At least once a month	18	1.90	11	1.50
Hardly ever	36	2.30	16	1.50
NSHSS, 1965				
Almost daily	46	†	38	†
2-3 times a week	32	†	31	†
3-4 times a month	6	†	16	†
Not at all	16	†	15	†

† indicates data not available.

NOTE: s.e. is standard error.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Youth Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Youth Civic Involvement component, 1996; Jennings, M.K., and Niemi, R.G. 1974. *The Political Character of Adolescence: The Influence of Families and Schools.* Princeton, NJ: Princeton University Press.

Table 8-39 shows the percentage of 12th-grade students who believe that a speech against a church or religion should be allowed. Estimates of 89 percent in the NHES:1999, 90 percent in the NHES:1996, and 86 percent of 12th grade students in the NSHSS responded that a speech against a church or religion should be allowed. While small, differences between the NHES:1999 and the NSHSS may be due to an increased recognition of freedom of speech, as well as methodological differences between the studies.

Table 8-39.—Opinion of students in 12th grade about whether a speech against churches and religion should be allowed: NHES:1999 Youth Interview, NHES:1996 Youth CI, and 1965 National Study of High School Seniors (NSHSS)

Survey	Percent	s.e.
NHES:1999		
Yes	89	1.00
No	11	1.00
NHES:1996		
Yes	90	1.20
No	10	1.20
NSHSS 1965		
In favor of	86	†
Opposed to	14	†
Depends	—	†

—Indicates less than 1 percent.

†Indicates data not available.

NOTE: s.e. is standard error.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Youth Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Youth Civic Involvement component, 1996; Jennings, M.K., and Niemi, R.G. 1974. *The Political Character of Adolescence: The Influence of Families and Schools.* Princeton, NJ: Princeton University Press.

The NHES:1999 Adult Education Interview Comparisons

The data comparisons for the Adult Education (AE) Interview of the NHES:1999 include adult education participation rates, demographic characteristics of adults, and labor force status. Brief descriptions of the data sources used for the AE comparisons follow.

The 1991 and 1995 National Household Education Surveys

Data collected in the NHES:1991 and NHES:1995 AE components provide information on participation rates of adults in educational activities by a number of demographic characteristics, such as age, gender, race/ethnicity, household income, marital status, highest education credential attained, and years of school completed. The NHES:1991 AE component contains records on 12,568 adults 16 and older, not enrolled in elementary or secondary school at the time of the interview. The NHES:1995 AE component includes 19,722 adults 16 and older, not enrolled in elementary or secondary school.

The Current Population Survey (CPS)

The Current Population Survey (CPS) is a survey of approximately 50,000 households containing approximately 120,000 individuals, conducted monthly to provide estimates of employment, unemployment, and other characteristics of the labor force. The U.S. Department of Education is a sponsor of the annual October supplement to the CPS, which provides specific information on educational topics. Also, each March, the CPS collects additional information concerning work experience, income, noncash benefits, and migration.

The October 1992 CPS data are the most recent data available from CPS for comparison with estimates of participation in adult education activities from the NHES:1999 Adult Education Interview. The 1992 CPS used the participation items that were used in the NHES:1991 AE component. The March 1998 CPS data are used to compare estimates of age, race/ethnicity by educational attainment, industry, and occupation because the 1998 CPS is closer in time to the NHES:1999 data collection.

Integrated Postsecondary Education Data System (IPEDS)

The Integrated Postsecondary Education Data System (IPEDS) surveys are conducted annually to collect various data from all postsecondary education institutions. The Fall Enrollment survey of the 1994-95 IPEDS collected data on student access to postsecondary education institutions. The 1994-95 IPEDS data were the most recent information available when analyses were conducted for this chapter. Estimates of adults participating in credential programs were compared to those from the NHES:1999 Adult Education Interview.

Adult Education Program Facts

Each year the Office of Vocational and Adult Education (OVAE) of the U.S. Department of Education publishes an annual fact sheet reporting estimates of adults who took part in adult basic education (ABE), adult secondary education (ASE), or English as a second language (ESL) programs. OVAE collects adult education participation information exclusively from adult education programs that receive federal funding. The OVAE's 1998 estimates of adults participating in ABE and ESL programs were compared to those from the Adult Education Interview of NHES:1999.

Adult Education Interview Findings

The data comparisons for Adult Education components cover most of the major topics included in the questionnaire. The estimates compared below include adult education participation rates, demographic characteristics of adults, and labor force status.

Participation rates, by demographic characteristics. This section provides estimates concerning participation rates in adult education activities. However, there are few data sources for comparing participation rates in adult education activities, particularly from individual respondents. Table 8-40 shows estimates of participation rates in adult education from the NHES:1999 Adult Education Interview, the NHES:1995 Adult Education component, the October 1992 CPS supplement, and the NHES:1991 Adult Education component. The estimates of participation rates in the NHES:1999 are higher than those of the previous years, and the observed difference may be largely related to changes in adults' participation in training, retraining, and other educational activities over the 8 years since 1991.

Table 8-40.—Percent of adults participating in adult education: NHES:1999 Adult Education Interview, NHES:1995 Adult Education component, CPS:1992, and NHES:1991 Adult Education component

Types of adult education participation[1]	NHES:1999	NHES:1995	CPS:1992	NHES:1991
	Estimate	Estimate	Estimate	Estimate
Total number of adults[2] (thousands)	194,625 (0)	189,576 (153)	184,553	181,800 (500)
Participation in any adult education, including full-time credential programs only	50 (0.8)	44 (0.5)	24	38 (0.7)
Participation in any adult education, excluding full-time credential programs only	46 (0.8)	40 (0.5)	19	33 (0.7)

[1]Includes adult basic education, ESL classes, credential programs, apprenticeship programs, work-related education or training, and personal interest/development courses.

[2]Includes civilian, noninstitutionalized adults, age 16 or older, not enrolled in elementary or secondary school at the time of the interview.

NOTE: Standard errors are presented in parentheses. Standard errors are not available for CPS data.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Adult Education Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Adult Education component, 1995; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Adult Education component, 1991. U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), October 1992.

The participation rates estimated in the 1992 CPS are substantially lower than those of any NHES collection. These differences are so large that they do not appear to be the result of nonresponse or coverage bias (no other estimates have differences of this size). It is likely that the design, data collection procedures, and questionnaire wording are responsible for a large amount of the differences. An indepth

analysis of issues associated with measuring participation is the subject of a separate technical report (Collins, Brick, and Kim 1997).

Table 8-41 shows overall participation rates in adult education activities excluding participation in full-time credential programs only from the NHES:1999 and the NHES:1995 by a number of demographic characteristics. The overall estimate of participation in the NHES:1999 is higher than for those in the NHES:1995 (46 percent compared to 40 percent). This table also shows that the relationship patterns between adult education participation and several specific characteristics are consistent between the NHES:1999 and the NHES:1995. Specifically, it is observed that participation rates decline as age increases, with people age 55 and older being less likely to participate than younger adults. Adult education participation is found to be positively associated with income and higher educational attainment. In addition, persons who are separated, divorced, or widowed (marital status of "other") have lower participation rates than other adults in both survey years.

Participation is slightly higher for females (48 percent in NHES:1999 and 42 percent in NHES:1995) than males (43 percent in NHES:1999 and 38 percent in NHES:1995). There were no significant differences in participation by race/ethnicity in the NHES:1999. However, in the NHES:1995, white adults were more likely to participate than Hispanic adults.

Table 8-42 shows participation rates for persons 16 years and older who are currently employed. These rates are higher than the total rates for all adults. This is reasonable, because work-related adult education is one of the two most common types of adult education. The results show that the relative rates of participation within occupations are similar in the NHES:1995 and the NHES:1999; that is, there are no observed large shifts in participation rates for any occupations.

Demographic characteristics and labor force status. The comparisons in this section include demographic characteristics, employment, and labor force status. For demographic and occupational comparisons, the March 1998 CPS was used. As shown in tables 8-43 through 8-47 most of the NHES:1999 estimates are very similar to comparable estimates from the 1998 CPS.

Table 8-41.—Number and percent of adults participating in adult education, by characteristics of adults: NHES:1999 Adult Education Interview and NHES:1995 Adult Education component

Characteristics	Number (thousands)	Adult education participants in the 12 months			
		Number (thousands)	s.e. (thousands)	Rate	s.e.
NHES:1999					
Total adults[1]	194,625	89,000	1,625	46	0.84
Age					
16-24 years	25,466	13,220	824	52	2.55
25-34 years	34,880	19,431	1,014	56	2.15
35-44 years	45,258	23,047	848	51	1.87
45-54 years	37,153	18,972	859	51	2.00
55 years and over	51,868	14,331	739	28	1.31
Sex					
Male	93,137	40,395	1,103	43	1.18
Female	101,488	48,605	1,083	48	1.07
Race/ethnicity					
White, non-Hispanic	143,870	65,738	1,354	46	0.89
Black, non-Hispanic	22,129	10,803	525	49	2.37
Hispanic	19,491	7,981	425	41	2.18
Other race, non-Hispanic	9,135	4,478	401	49	3.47
Household income					
$10,000 or less	14,335	3,193	348	22	2.43
$10,001 to 30,000	54,343	18,121	896	33	1.54
$30,001 to 50,000	44,972	20,719	829	46	1.56
$50,001 to 75,000	34,643	19,657	838	57	1.90
More than $75,000	46,332	27,310	946	59	1.76
Marital status					
Never married	41,720	20,964	946	50	1.83
Currently married	118,568	55,966	1,375	47	0.98
Other[2]	34,337	12,070	584	35	1.41
Educational attainment					
Less than high school	32,644	7,296	581	22	1.75
High school	53,488	19,693	1,007	37	1.65
Associate's degree or some college	52,843	27,585	991	52	1.40
Bachelor's degree or higher	55,651	34,426	1,191	62	1.54

Table 8-41.—Number and percent of adults participating in adult education, by characteristics of adults: NHES:1999 Adult Education Interview and NHES:1995 Adult Education component—Continued

Characteristics	Number (thousands)	Adult education participants in the 12 months			
		Number (thousands)	s.e. (thousands)	Rate	s.e.
NHES:1995					
Total adults[1]	189,576	76,272	921	40	0.48
Age					
16-24 years	22,439	10,550	289	47	1.12
25-34 years	40,326	19,508	449	48	0.95
35-44 years	42,304	20,814	450	49	0.87
45-54 years	31,807	14,592	428	46	1.15
55 years and over	52,700	10,808	466	21	0.84
Sex					
Male	90,275	34,453	584	38	0.65
Female	99,301	41,818	594	42	0.59
Race/ethnicity					
White, non-Hispanic	144,602	59,988	774	41	0.54
Black, non-Hispanic	20,808	7,705	302	37	1.45
Hispanic	15,705	5,284	187	34	1.18
Other race, non-Hispanic	8,461	3,294	210	39	2.06
Household income					
$10,000 or less	30,212	6,888	305	23	0.98
$10,001 to 30,000	56,851	18,336	487	32	0.87
$30,001 to 50,000	49,076	21,787	508	44	0.82
$50,001 to 75,000	29,161	15,169	460	52	0.94
More than $75,000	24,277	14,091	369	58	1.27
Marital status					
Never married	38,658	17,105	398	44	0.80
Currently married	114,680	48,200	731	42	0.62
Other[2]	36,238	10,967	400	30	1.08
Educational attainment					
Less than high school	29,347	4,621	303	16	1.07
High school	62,957	19,343	522	31	0.76
Associate's degree or some college	50,736	25,230	428	50	0.75
Bachelor's degree or higher	46,535	27,078	560	58	0.98

[1]Includes civilian, noninstitutionalized adults, age 16 or older, not enrolled in elementary or secondary school at the time of the interview.

[2]Other includes separated, divorced, and widowed.

NOTE: s.e. is standard error. Adult education includes ESL classes, adult basic education, credential programs, apprenticeship programs, work-related education or training, and personal interest/development courses but excludes full-time credential programs only. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Adult Education Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Adult Education component, 1995.

Table 8-42.—Percent of employed adults who took adult education, by occupation: NHES:1999 Adult Education Interview and NHES:1995 Adult Education component

Occupation	NHES:1999		NHES:1995	
	Estimate	s.e.	Estimate	s.e.
Number of adults* (thousands)	194,625	0	189,576	153
All employed adults (thousands)	132,418	1,238	131,899	760
Percentage of employed adults	54	1.05	49	0.53
Executive, administrative, and managerial occupations	56	2.43	56	3.45
Engineers, surveyors, and architects	82	5.23	66	6.37
Natural scientists and mathematicians	70	6.48	72	4.86
Social scientists, social workers, religious workers, and lawyers	81	4.26	77	3.41
Teachers: college, university, and other postsecondary institution; counselors, librarians, archivists	69	5.91	55	8.46
Teachers, except postsecondary institution	79	3.53	77	2.58
Health diagnosing and treating practitioners	74	14.78	71	8.13
Registered nurses, pharmacists, dieticians, therapists, and physician's assistants	85	4.51	87	2.85
Writers, artists, entertainers, and athletes	52	5.96	50	8.76
Health technologists and technicians	70	6.02	75	4.87
Technologists and technicians, except health	61	4.58	64	4.42
Marketing and sales occupations	49	3.11	44	3.02
Administrative support occupations, including clerical	50	2.73	52	2.43
Service occupations	51	2.37	47	2.95
Agricultural, forestry, and fishing occupations	38	6.94	26	13.47
Mechanics and repairers	44	5.26	48	5.68
Construction and extractive occupations	34	5.21	38	6.44
Precision production occupations	43	6.86	43	10.05
Production working occupations	38	3.89	31	4.19
Transportation and material moving occupations	36	4.07	28	8.17
Handlers, equipment cleaners, helpers, and laborers	27	7.12	25	10.76
Miscellaneous occupation	45	9.87	57	6.38

*Includes civilian, noninstitutionalized adults, age 16 or older, not enrolled in elementary or secondary school at the time of the interview.

NOTE: s.e. is standard error. Adult education includes ESL classes, adult basic education, credential programs, apprenticeship programs, work-related education or training, and personal interest/development courses.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Adult Education Interview, 1999; U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, Adult Education component, 1995.

Table 8-43 shows estimates of the adult population by sex and age. As discussed in chapter 7, the adult education weights were raked to control totals of age by sex from the CPS. Therefore, estimates from the two surveys are expected to be similar. The age estimates for males from the NHES:1999 and the 1998 CPS are within one-half of 1 percent. There is some variation between the two data sets for females. The respective age estimates are slightly higher for females aged 16 to 24 years and slightly lower in the NHES compared to the CPS for females aged 25 to 34 years and 55 years and older.

Race/ethnicity and educational attainment are also characteristics that were used in raking the adult education weights (see chapter 7 for further discussion). Therefore, estimates of educational attainment and race/ethnicity are expected to be similar between the NHES:1999 and the 1998 CPS, which is the source of the control totals used in raking. Education attainment estimates shown here are not identical, however, because the NHES:1999 data were raked to a three-category education attainment variable (less than high school, high school diploma or equivalent, and some college), whereas a four-category education attainment variable is used in the comparison (table 8-44). As depicted in table 8-44, the NHES:1999 and the 1998 CPS estimates of educational attainment by race/ethnicity are close in most cases; however, there are some differences observed for white, non-Hispanics and Hispanics. The NHES:1999 shows a lower estimate of high school graduates (by 7 percentage points for white, non-Hispanics and 5 percentage points for Hispanics) and a higher estimate for bachelor's degree or higher education (by 7 percentage points for white, non-Hispanics, and 6 percentage points for Hispanics). For all other races, the NHES:1999 shows a higher estimate for those without a high school diploma (by 2 percentage points) and those with an associate's degree or some college (by 2 percentage points) and a lower estimate for bachelor's degree or higher education (by 6 percentage points).

In table 8-45, the estimates of labor force status from the NHES:1999 and the 1998 CPS are presented for adults aged 16 or older. The two data sets are somewhat different, with a higher estimate for those in the labor force in the NHES:1999, both employed (by 3 percentage points) and unemployed (by less than 0.5 percentage points) and a lower estimate not in the labor force (by 4 percentage points). This may be partly attributed to the decrease in the unemployment rate from 1998 to 1999 and, therefore, more people joining the labor force.

Estimates of the percentage of the employed adult population by industry and occupation from the NHES:1999 and the 1998 CPS appear in tables 8-46 and 8-47. Overall, both sets of estimates are similar. By industry, public administration and nonclassifiable establishment estimates were somewhat higher in the NHES:1999, and mining and wholesale trade were higher in the CPS:1998. By occupation, executive, administrative, and managerial occupations were higher in the NHES:1999, and engineers, surveyors, and architects and precision production occupations were slightly higher in the CPS:1998.

Table 8-43.—Number and percent distribution of the adult population, by sex and age: NHES:1999 Adult Education Interview and CPS:1998

Age	NHES:1999				CPS:1998	
	Female		Male		Female	Male
	Estimate	s.e	Estimate	s.e	Estimate	Estimate
Total number of adults (thousands)*.....	101,488	0	93,137	0	101,488	93,137
16 to 24 years.....	7	0.29	6	0.26	6	6
25 to 34 years.....	9	0.45	9	0.45	10	10
35 to 44 years.....	12	0.39	11	0.41	12	11
45 to 54 years.....	10	0.46	9	0.49	9	9
55 years and older.....	14	0.31	12	0.28	16	12

*For NHES, includes civilian, noninstitutionalized adults, age 16 or older, not enrolled in elementary or secondary school at the time of the interview.

NOTE: s.e. is standard error. The percentages provided in this table are cell percentages and sum to 100 over females and males for each data set (because of the rounding, they may not add exactly to 100 percent).

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Adult Education Interview, 1999; U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), March 1998.

Table 8-44.—Number and percent distribution of the adult population, by highest educational attainment and race/ethnicity: NHES:1999 Adult Education Interview and CPS:1998

Race/ethnicity	Number of Adults (thousands)	Highest educational attainment							
		Less than high school		High school		Associate's or some college		Bachelor's or higher	
		Percent	s.e.	Percent	s.e.	Percent	s.e.	Percent	s.e.
NHES:1999									
Total adults*	194,625	17	0.11	28	0.65	27	0.72	29	0.73
White, non-Hispanic.....	143,870	13	0.41	28	0.79	28	0.84	32	0.87
Black, non-Hispanic	22,129	23	2.10	33	2.38	27	2.10	17	1.55
Hispanic	19,491	41	2.20	22	1.76	20	1.98	16	1.91
All other races.....	9,135	17	0.11	28	0.65	27	0.72	29	0.73
CPS:1998									
Total adults	194,625	17	†	34	†	27	†	22	†
White, non-Hispanic.....	144,476	13	†	35	†	28	†	25	†
Black, non-Hispanic	22,129	23	†	37	†	27	†	13	†
Hispanic	19,491	44	†	27	†	20	†	10	†
All other races.....	8,529	15	†	25	†	25	†	35	†

† Indicates data not available.

*Includes civilian, noninstitutionalized adults, age 16 or older, not enrolled in elementary or secondary school at the time of the interview.

NOTE: s.e. is standard error. Because of rounding, details may not add to totals and percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Adult Education Interview, 1999; U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), March 1998.

Table 8-45.—Percent distribution of the adult population, by labor force status: NHES:1999 Adult Education Interview and CPS:1998

Labor force status	NHES:1999		CPS:1998
	Estimate	s.e.	Estimate
Total number of adults (thousands)*.....	194,625	0	194,625
Employed, in labor force.....	68	0.64	65
Unemployed, in labor force.....	4	0.33	3
Not in labor force	28	0.65	32

*For NHES, includes civilian, noninstitutionalized adults, age 16 or older, not enrolled in elementary or secondary school at the time of the interview.
NOTE: s.e. is standard error.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Adult Education Interview, 1999; U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), March 1998.

Adult basic education/GED preparation and English as a second language programs. Table 8-48 presents estimates of participants in both adult basic education or GED preparation programs (ABE/GED), including adult secondary education, and English as a second language (ESL) courses from the Office of Vocational and Adult Education (OVAE) of the U.S. Department of Education and from the NHES:1999. The 1998 OVAE data estimated that 2 million adults participated in basic skills education and about 2 million adults participated in ESL programs, as compared to 4 million and 2 million, respectively, estimated in the NHES:1999.

The OVAE estimate of basic skills education participants included only those participants who were in federal grant-receiving adult basic education programs whereas the NHES:1999 estimate counted participants irrespective of how the adult basic education program was funded. This may explain why the NHES:1999 estimate was larger than that indicated by OVAE. The same difference in approaches to counting participants existed between OVAE and NHES:1999 counts of ESL participants. However, table 8-48 shows that the two estimates are similar. Part of the reason for this similarity may be due to the fact that while OVAE only counted those participants who were in federal grant-receiving ESL programs and NHES:1999 counted participants irrespective of how the ELS program was funded, OVAE counted participants regardless of what language they spoke. In contrast, because the NHES:1999 was conducted only in English or Spanish, it only counted ESL participants who could speak English and/or Spanish. Thus, though NHES:1999 was less restrictive in terms of funding sources for ESL programs, it was more restrictive than OVAE in terms of language spoken.

Table 8-46.—Percent distribution of the employed adult population, by industry: NHES:1999 Adult Education Interview and CPS:1998

Industry	NHES:1999		CPS:1998
	Estimate	s.e.	Estimate
Total number of adults (thousands)[1]	194,625	0	194,625
Number of adults who were employed in the past 12 months (thousands)	149,559	1,174	134,104
Agriculture, forestry, and fishing	3	0.33	2
Mining	*	0.11	1
Construction	6	0.54	7
Manufacturing	16	0.56	16
Transportation, communication, utility, and sanitary services	7	0.42	7
Wholesale trade	2	0.37	4
Retail trade	15	0.68	16
Finance, insurance, and real estate	6	0.34	7
Services	19	0.69	19
Health services	8	0.41	9
Educational services	10	0.52	8
Public administration	7	0.48	4
Nonclassifiable establishment	2	0.29	#

[1]For NHES, includes civilian, noninstitutionalized adults, age 16 or older, not enrolled in elementary or secondary school at the time of the interview.

NOTE: s.e. is standard error. Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Adult Education Interview, 1999; U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), March 1998.

Table 8-47.—Percent distribution of the employed adult population, by occupation: NHES:1999 Adult Education Interview and CPS:1998

Occupation	NHES:1999		CPS:1998
	Estimate	s.e.	Estimate
Total number of adults (thousands)*	194,625	0	194,625
Number of adults who were employed in the past 12 months (thousands)	149,559	1,174	134,104
Executive, administrative, and managerial occupations	19	0.72	14
Engineers, surveyors, and architects	1	0.16	2
Natural scientists and mathematicians	2	0.19	2
Social scientists, social workers, religious workers, and lawyers	2	0.23	2
Teachers: college, university, and other postsecondary institution; counselors, librarians, archivists	2	0.26	1
Teachers, except postsecondary institutions	5	0.29	4
Health diagnosing and treating practitioners	1	0.15	1
Registered nurses, pharmacists, dieticians, therapists, and physician's assistants	2	0.21	2
Writers, artists, entertainers, and athletes	2	0.22	2
Health technologists and technicians	1	0.17	1
Technologists and technicians, except health	4	0.45	2
Marketing and sales occupations	10	0.53	12
Administrative support occupations, including clerical	15	0.62	14
Service occupations	12	0.60	14
Agricultural, forestry, and fishing occupations	2	0.26	2
Mechanics and repairers	3	0.30	4
Construction and extractive occupations	4	0.37	5
Precision production occupations	1	0.18	3
Production working occupations	7	0.42	6
Transportation and material moving occupations	4	0.31	4
Handlers, equipment cleaners, helpers, and laborers	3	0.32	4
Miscellaneous occupation	1	0.24	#

*For NHES, includes civilian, noninstitutionalized adults, age 16 or older, not enrolled in elementary or secondary school at the time of the interview.

NOTE: s.e. is standard error. Because of rounding, percents may not add to 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Adult Education Interview, 1999; U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), March 1998.

If an adult selected for the NHES:1999 was not able to complete an interview because of language problems (the NHES:1999 was conducted in English and Spanish only), he/she was not included in the NHES:1999 data. OVAE data, which comprise a program-based data set, on the other hand, included all participants irrespective of their language background. This difference in how the data were collected may explain why OVAE had higher enrollment estimates for ESL than the NHES:1999.

Table 8-48.—Number of adults participating in basic skills education and ESL classes: NHES:1999 Adult Education Interview and 1998 Office of Vocational and Adult Education (OVAE)

Adult basic education	NHES:1999		OVAE (1998)	
	Number of participants	s.e.	Number of participants	s.e.
Basic skills education	3,642,499	459,934	2,024,077	N/A (program counts)
ESL	1,703,919	270,784	1,920,448	N/A (program counts)

NOTE: s.e. is standard error.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Adult Education Interview, 1999; U.S. Department of Education, Office of Vocational and Adult Education (OVAE), 1998 Enrollment of Participants by Instructional Programs.

Credential programs. Table 8-49 shows estimates from the NHES:1999 and the 1994-95 IPEDS data for enrollment in credential programs. Given that the NHES encompasses more than one academic year, it might be expected that the NHES figures would be substantially larger than the IPEDS estimates, which include estimates of fall enrollment during the academic year of 1994-95. However, the NHES estimates shown here include only credential seekers, and not all persons taking courses at higher education institutions whereas the IPEDS data include all individuals enrolled in postsecondary institutions including individuals not seeking credentials.

Table 8-49.—Number of adults participating in credential programs: NHES:1999 Adult Education Interview and 1994-95 Integrated Postsecondary Data System (IPEDS)

Type of degree program	Number of participants	
	Number	s.e.
NHES:1999		
College/graduate	17,795,768	706,405
Vocational/technical	11,490,038	649,118
Other	3,751,444	323,006
1994-95 IPEDS		
4- and 2-year colleges*	14,763,816	†
Less-than-2-year institutions	343,816	†

† Indicates data not available.

*Includes associate's, bachelor's, or advanced degree programs.

NOTE: s.e. is standard error.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Adult Education Interview, 1999; U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Data System (IPEDS), 1994-95.

Although the numbers of participants in vocational/technical programs are not reported separately in the IPEDS data, it can be assumed that they are included in estimates of participants in less-than-2-year institutions. IPEDS reported about 344,000 individuals enrolled in less-than-2-year institutions. The NHES:1999 estimate of the number of adults enrolled in vocational/technical programs was 11.5 million. In the NHES:1999, a large number of respondents also reported participating in "other" credential programs (about 3.8 million adults); IPEDS did not collect information on "other" credential programs.

These differences might result from differences in the timeframes involved and types of programs reported in different collections. As noted above, the NHES:1999 Adult Education Interview uses a timeframe that is different from that for the IPEDS collection. The fact that the NHES:1999 has a recall period of 12 months, crossing over the two academic years, may partially account for the higher estimates in the NHES.

While the IPEDS estimates include programs offered by accredited postsecondary institutions, the NHES has no such restriction. Some respondents reported that they took credential programs from businesses, churches, and other nonacademic institutions. Of the 11.5 million participants in vocational/technical programs in the NHES:1999, about 3.9 million adults reported participating in vocational/technical programs provided by institutions other than vocational/technical schools. Some of

the vocational schools providing programs that were reported in the NHES:1999 may be unaccredited. Some of the programs reported are not traditional postsecondary vocational/technical diploma programs but were reported by the respondents as programs leading toward a certificate of some kind.

Since relatively large numbers of respondents reported participating in "other" types of credential programs in the NHES:1999, these "other" programs were reviewed in the course of data preparation. Some of them were recoded to specific categories, such as associate's or bachelor's degrees or vocational/technical programs. Finally, an approximated 3.8 million adults—about 2 percent of the estimated 195 million adults in the study population—reported that they participated in credential programs other than college degrees or vocational/technical programs.

In some cases, these other programs are certificate programs that do not specifically fit into the above categories, for example, a series of courses leading to a certificate as a Novell network administrator. Others are programs leading to a specific certificate in a field such as real estate, health, and so on, but they cannot be unambiguously reclassified into other categories. In most cases, this results from the respondents reporting the field of the program rather than the type of credential.

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