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Working Paper Series

Unit and Item Response Rates, Weighting, and Imputation Procedures in the 1996 National Household Education Survey

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U. S. Department of Education
Office of Educational Research and Improvement

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Unit and Item Response Rates, Weighting, and Imputation Procedures in the 1996 National Household Education Survey

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Overview of the National Household Education Survey

The National Household Education Survey (NHES) is a data collection system of the National Center for Education Statistics (NCES), which has as its legislative mission the collection and publication of data on the condition of education in the Nation. The NHES is specifically designed to support this mission by providing information on those educational issues that are best addressed by contacting households rather than schools or other educational institutions. The NHES provides descriptive data on the educational activities of the U.S. population and offers policymakers, researchers, and educators a variety of statistics on the condition of education in the United States.

The NHES is a telephone survey of the noninstitutionalized civilian population of the U.S. Households are selected for the survey using random digit dialing (RDD) methods, and data are collected using computer-assisted telephone interviewing (CATI) procedures. From 45,000 to 64,000 households are screened for each administration, and individuals within households who meet predetermined criteria are sampled for more detailed or extended interviews. The data are weighted to permit estimates of the entire population. The NHES survey for a given year typically consists of a set of screening questions, which collects household composition and demographic data, and extended interviews on two substantive components addressing education-related topics. In order to assess data item reliability and inform future NHES surveys, each administration also includes a subsample of respondents for a reinterview.

The primary purpose of the NHES is to conduct repeated measurements of the same phenomena at different points in time, although one-time surveys on topics of interest to the Department of Education are also conducted. Throughout its history, the NHES has collected data in ways that permit estimates to be tracked across time. This includes repeating topical components on a rotating basis in order to provide comparative data across survey years. In addition, each administration of the NHES has benefited from experiences with previous cycles, resulting in improvements to the survey procedures and content. Thus, while the survey affords the opportunity for tracking phenomena across time, it is also dynamic in addressing new issues and including conceptual and methodological refinements.

A new design feature of the NHES program implemented in the NHES:96 is the collection of demographic and educational information on members of all screened households, rather than just those households potentially eligible for a topical component. In addition, the expanded screener was designed to include a brief set of questions on an issue of interest to education program administrators and policymakers. In 1996, this topic was household use of public libraries. The total Screener sample size was sufficient to produce state estimates of household characteristics for the NHES:96.

Full-scale implementations of the NHES have been conducted in 1991, 1993, 1995, and 1996. Topics addressed by the NHES:91 were early childhood education and adult education. The NHES:93 collected information about school readiness and school safety and discipline. The 1991 components were repeated for the NHES:95, addressing early childhood program participation and adult education. Both components underwent substantial redesign to incorporate new issues, reflect methodological advancements since 1991, and develop new measurement approaches. In the NHES:96, the topical components were parent/family involvement in education and civic involvement. As noted above, the expanded screening feature included questions on household use of public libraries.

In addition to its topical components, the NHES system has also included a number of methodological investigations. These have resulted in technical reports and working papers covering

diverse topics such as telephone undercoverage bias, proxy reporting, and sampling methods. This series of technical reports and working papers provides valuable information on ways of improving the NHES and other surveys.

This working paper presents information on the unit response rates, item response rates, weighting procedures, and imputation procedures in the 1996 National Household Education Survey (NHES:96). Readers may also wish to review the other NHES:96 working papers: *Design, Data Collection, Survey Administration Time, and Data Editing in the 1996 National Household Education Survey* (Vaden-Kiernan et al. 1996), *Reinterviews and Coverage Bias Analysis in the 1996 National Household Education Survey* (Montaquila et al. 1996), and *Comparison of Estimates in the 1996 National Household Education Survey* (Nolin et al. 1996).

1996 National Household Education Survey Unit Response Rates

Introduction

This report describes the response and completion rates for the NHES:96. It includes data on the rates for the Screener interview,[1] the Parent PFI/CI interview, the Youth CI interview, and the Adult CI interview. The following presentation assumes that the reader is familiar with the survey design and, to a lesser extent, the weighting procedures used in the NHES:96. The weighting procedures are discussed in a later section of this working paper, and the sample design is described *in Design, Data Collection, Survey Administration Time, and Data Editing in the 1996 National Household Education Survey,* (Vaden-Kiernan et al. 1996), *Reinterviews and Coverage Bias Analysis in the 1996 National Household Education Survey,* (Montaquila et al. 1996), and *Comparison of Estimates in the 1996 National Household Education Survey* (Nolin et al. 1996).

Because there are a number of ways to describe the outcomes of the data collection activities of a random-digit-dial (RDD) telephone survey, the next section provides an introduction to the terms "response rate" and "completion rate" as used in this document and for the NHES in general. The results for the NHES:96 follow these introductory remarks.

Definition of Response and Completion Rates

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:96, 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 are identified in a two stage process for the Adult CI and Parent PFI/CI. Screener interviews are conducted to enumerate and sample household members, and then questionnaires are administered in a second-stage interview. If the responding household member fails to complete the first-stage Screener, no members can be sampled for other interviews. Under the design, the completion rate for the second stage (Parent PFI/CI or Adult CI) in the percentage of sampled persons who completed thos interviews. The response rate is the product of the first- and second-stage completion rates.[2]

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 the

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[1] The Screener interview formed the basis of the Household & Library data file. The term "Screener" is used when refering to the interview, and "Household & Library data file" is used when refering to the data set.

[2] The calculation of the Youth CI response rate is described later.

probabilities of selection and the response rates in the categories with different selection probabilities vary considerably. All of the response rates discussed in the report are weighted unless noted specifically in the text.

Response rates and completion rates are identical for the first stage of sampling and interviewing (*i.e.*, the Screener). The next section discusses the response rate for the Screener and provides a profile of the characteristics of the respondents. The discussion of response and completion rates for the Parent PFI/CI, Youth CI, and Adult CI interviews and response profiles for these interviews follow.

Screener Response Rates

The first panel of table 1 shows the disposition of the 161,446 telephone numbers that were sampled for the NHES:96. 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.

About 47 percent of the telephone numbers were identified as residential. This percentage is similar to that reported for NHES:95, but lower than in previous NHES studies, which averaged about 60 percent. The difference may be partly attributable to a difference in the sampling methodology used. Both the NHES:95 and the NHES:96 used list-assisted sampling methods while earlier studies relied on the Mitofsky-Waksberg two-stage sampling methodology. One of the features of the list-assisted method is that the expected percentage of all telephone numbers that are residential is lower than in the Mitofsky-Waksberg two-stage samples that were used in NHES studies prior to 1995. Assuming that 40 percent of the telephone numbers with unknown residential status are residential (discussed below), the percentage of numbers that are residential is about 50 percent, close to the 49 percent that was expected at the start of the survey.

Prior to data collection, it was expected that Alaska and the District of Columbia would have residency rates that were lower than the country as a whole, and the samples in these states were supplemented to account for this. The observed residency rate for the District of Columbia was 32 percent (547 known residential telephone numbers out of 1,702) and the observed residency rate for Alaska was 33 percent (646 known residential numbers out of 1,947) (see table 4).

The percentage of telephone numbers with unknown residential status was about 6 percent, which is comparable to the percentage found in NHES:95 and slightly higher than the 3 to 5 percent found in previous NHES studies. Apparently, the sample of telephone numbers created using the list-assisted method contains more telephone numbers that cannot be identified as either residential or nonresidential despite numerous telephone calls. Since virtually all of the unknown residential status numbers were called 14 times or more as in previous NHES studies (see *Design, Data Collection, and Data Editing in the 1996 National Household Education Survey* 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.

The second panel of table 1 shows four estimated response rates for the Screener based upon different assumptions about the telephone numbers. Each of these rates is described below, along with the rationale for its use. The difference among the rates is in the allocation of the numbers in the unknown residential status category.

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 were selected in the NHES:95 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 is 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:91. Therefore, the denominator of 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 numerator is the number of telephone numbers in households that participated in the survey.

The estimated Screener response rate using the business office method is 70 percent. If the raw count of telephone numbers was not weighted, the Screener response rate using the business office method would also have been 70 percent. The estimated Screener response rate of 70 percent is recommended for general use, and it is used in all the subsequent presentations of the data from the NHES:96.

The NHES:96 Screener response rate is lower than the 73 percent Screener response rate attained in the NHES:95. Both the NHES:95 and the NHES:96 have lower response rates than the earlier NHES collections; this may be due partly to the fact that a full household enumeration was requested early in the NHES:95 and NHES:96 Screeners. However, this does not explain the difference of about 3 percent between the NHES:95 and NHES:96 rates. One hypothesis is that the political climate of the winter of 1995-96 may have had an effect on NHES:96 response rates. Although we are unable to measure the impact of the political climate on the response rates, there are three factors to consider in this regard. First, the budget crises that evolved between the Congress and the administration reached a stalemate that led to two government shutdowns, neither of which was popular. The second of these two shutdowns encompassed the first two weeks of NHES:96 data collection. Second, the early stages of campaigning for the 1996 presidential election, as well as much-publicized activity on Capitol Hill, included attacks on the existence of the U.S. Department of Education and the Goals 2000 program. Finally, both at the state and national levels there has been increasing discussion of limiting legal immigration and stemming illegal immigration, as well as continued discussion of declaring English the "official" language of the United States; these factors may have depressed the response rates of Spanish-speaking persons, particularly if these issues are covered extensively in Spanish-language newspapers and television.

The other three response rates shown in table 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. Since evidence from checks done for the NHES:91 and the NHES:95 suggests that the residency rate for this set of telephone numbers is lower than implied by the CASRO rate calculation, we do not recommend using this assumption in the response rate calculation. The CASRO rate is 69 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 65 percent. The liberal rate is computed assuming that all the numbers with unknown residential status are actually nonresidential. The liberal rate is 73 percent.

For most purposes, it is reasonable to say that the Screener response rate is estimated to be between 65 and 73 percent, and that the best estimate is 70 percent. The variability in the estimates arises because it is not possible to identify precisely the residential status for each telephone number.

Table 2 provides a further breakdown of the participating and nonparticipating residential telephone numbers. The participating numbers are classified by whether or not any other interviews were scheduled for the household, and the nonparticipating numbers are classified by the reason for nonresponse. About 83 percent of all the nonresponse in the screening interview was due to an adult household member refusing to answer the screening items. This rate of refusal is about the same as the NHES:95 and the NHES:91, and higher than the NHES:93 rate of 68 percent. The next largest category is the 10 percent classified as maximum calls, which includes those households that never completed the Screener after numerous calls. While these households never explicitly refused to participate, potential respondents were not available to complete the screening items despite many attempts to reach them. Language problems account for 6 percent of nonresponse. The language problem cases are discussed in more detail below.

Table 3 shows the number of households in which extended interviews were scheduled. About 95 percent of sampled telephone numbers were allocated to parent and youth interviewing, and 5 percent were allocated to adult interviewing. This distribution is reflected in the percentages of households with completed screening interviews. Virtually all of the households in the adult sample had one adult selected for the Adult CI interview. In the parent/youth sample, 16 percent had only a Parent PFI/CI interview scheduled, 21 percent had both Parent PFI/CI and Youth CI interviews scheduled, and 64 percent had no extended interview scheduled.

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, we discuss the Screener response rates by state, noting those with higher and lower response rates. Following this, we address response rates 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 of Population.

Table 4 gives the distribution of the telephone calls and the estimated response rate by State. The response rates range from 61 percent to 83 percent. States with their populations concentrated in urbanized areas (such as California, the District of Columbia, New York, and New Jersey) tended to have lower response rates, while the less urbanized bread basket states (such as South Dakota, Montana, North Dakota, Wyoming, Iowa, and Nebraska) tended to have higher response rates. This pattern is common in telephone surveys.

Table 5 gives the distribution of the telephone calls and the estimated response rate by the characteristics of the areas. For example, areas with less than 11 percent of the adult population having a college degree as of the 1990 Census had a response rate of 73 percent, while areas with 26 percent or more college graduates had a response rate of 67 percent. Response rates for the Pacific and Mid-Atlantic divisions, areas with high concentrations of population in urbanized areas, are lowest, while response rates for the West North Central and East South Central divisions, areas with lower proportions of the population in urbanized areas, are highest. This pattern is also seen in the response rates by metropolitan status, where the response rate for non-metropolitan areas is highest. This is the same general pattern that was observed in the State response rates. Households living in low-minority areas completed the Screener

at higher rates than those living in high-minority areas. The response rates were also higher in areas with higher proportions of children.

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 any groups of households had extremely low 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. The characteristics 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 geographic areas described above that were available and thought to be correlated with the response rate.

The analysis was done using a categorical search algorithm called 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:96. The procedure divides 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.

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. Looking at table 6, which contains the summary of this analysis, the first column indicates that Census division was the variable chosen as most associated with differential response rates and all 10 response categories for this variable were retained. Note, for example, that within Census divisions the data were tested and metropolitan status was then used to split the data. The process continued until the final 27 cells shown in the table were formed. The table is formatted so that the order of the column variables closely corresponds to the order in which they entered the model. Although the variables percent low income, median years education, and percent owner occupied were considered in the CHAID analysis, they were not found to be discriminators of response in this multivariate analysis.

Since many of the variables in the CHAID model, such as Census division, 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, metropolitan status categories are split differently within different Census divisions. 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.

The results of the analysis are given in table 6. As noted above, each cell was constrained so that it contained at least 500 observations. The completion rates in the last column of the table, that is, the

weighted counts of the number of participating households divided by the number of households (participating and not participating), vary from about 56 percent to 83 percent in the 27 cells.

The first question that needs to be addressed is whether or not the variability in response rates by cells is large. One way of looking at this problem is to consider what could be expected if 27 cells were defined randomly rather than by trying to maximize the difference in response rates. Forming random cells with as few as 500 cases and given the overall response rate of 70 percent, it would not be unusual to find a range in the response rates across the cells from 66 to 74 percent (which are close to the conservative and liberal response rates shown in table 1). Comparing this with the observed range of 56 to 83 percent suggests that the CHAID model that attempts to maximize variation in response rates has discriminated well.

The range of response rates among the 27 cells suggests that the key characteristics identified by CHAID should be used in creating weighting adjustments. Otherwise, there is evidence that the response bias may be large for these characteristics. As described in the weighting section of this report, the variables urbanicity (highly correlated with metropolitan status), race of first adult in the household, home tenure, and an indicator of whether children are present in the household were used in forming cells for raking adjustments. Separate raking adjustments were computed for each state. While the use of these variables is important and positive, it does not imply the estimates are free of nonresponse bias. Clearly, some nonresponse bias exists, but these results suggest that the weighting adjusts for some of the important characteristics associated with the response bias.

Another observation that sometimes indicates problems in telephone surveys is the comparison of the percentage of households or persons eligible for the survey to the percentage eligible from other data sources, such as the Current Population Survey (CPS). As shown in table 7, estimates from the October 1994 CPS showed that about 38 percent of households had children eligible for the Parent interview (i.e., children between 3 years of age and 12th grade). However, the sample design for NHES:96 assumed that about 30 percent of households had children eligible for the Parent interview, based on the October 1992 CPS (for more details, refer to *Design, Data Collection, Survey Administration Time, and Data Editing in the 1996 National Household Education Survey,* Vaden-Kiernan et al. 1996). Estimates from the October 1993 CPS indicate that about 33 percent of households had children eligible for the Parent interview. We are unable to explain the variation in the CPS estimates. The percentage of households in the NHES:96 that had children eligible for the Parent interview was 33 percent (23 percent with at least one child between age 3 and 5th grade, and 18 percent with at least one child between 6th and 12th grade). This percentage falls within the range of the estimates obtained from the October 1992, October 1993, and October 1994 CPS surveys (that is, 30 percent to 38 percent). As a result, we see no strong indications of screener nonresponse bias due to differential response between households with children and households without children.

This type of analysis can be extended to better understand the nature of the potential nonresponse bias from the screening of households by comparing the general characteristics of the households from the completed NHES:96 to the same characteristics from the CPS. Table 8 gives household and person distributions from all 55,838 households with completed Screeners from the NHES:96 and from the March 1995 CPS. The NHES:96 counts were based on the number and characteristics of all persons enumerated in the household. Percentages reflect households (e.g., percent of households with one person, etc.). The household and person characteristics examined were those thought to be correlated with nonresponse based on prior NHES studies.

In terms of household composition, households with only one member and households with older adults are often the most difficult to survey. The table shows that the percentage of 1-person households enumerated in the NHES:96 was 1.7 percentage points less than the CPS estimate. Breaking these households out by sex[3], the difference between the NHES:96 estimate and the CPS estimate is about the same for both sexes. The percentage of households with at least one adult aged 65 years or more is also slightly lower in the enumerated NHES:96 than the CPS estimate. These results are consistent with the hypothesis that these households are less likely to participate in surveys than other types of households. It also suggests that the NHES:96 estimates may be somewhat biased due to these differences, although the sampling weights for the components were adjusted for some of these characteristics.

The second part of the table shows the percentage distribution of households containing persons in given age ranges from the two surveys. The largest differences are for estimates of the percentage of households with persons 0 to 2 years old and for the percentage of households with persons 60 years or more. The difference for the older persons is related to the household distribution mentioned above. It may also reflect reporting errors in the NHES:96. Some respondents may fail to include grandparents if they believe that the interviewer is only concerned with the nuclear family. The under-representation of households with persons 0 to 2 years old may be related to the fact that the NHES:96 is a survey about education. Households with no members currently in school may think the survey does not apply to them and respond at a lower rate than those in households with school-age children.

None of the comparisons reveal any differences of large magnitude between the respondents to the NHES:96 and the general population. However, the results do show some smaller, but important, differences that may result in biases in some of the estimates from the survey, such as those focusing on the elderly. The differences discovered here are very similar to the results from the NHES:95 survey.

Language Problem Resolution

The NHES:96 was conducted in English and in Spanish. The questionnaires were translated into Spanish, a Spanish version of the CATI instrument was programmed, and bilingual interviewers were trained to complete the interview in either English or Spanish.

When a telephone number is dialed in an RDD survey, the telephone may be answered by someone who does not speak English. These contacts are typically coded by interviewers as "language problem" cases and classified as contact with a person with a hearing or speech problem or one who speaks a language other than English. If the respondent speaks a language other than English and the interviewer recognizes the language, the language is also recorded by the interviewer.

In the NHES:96, all cases classified as a language problem, including those with hearing and speech problems, were placed in a separate work category so that only trained, bilingual interviewers could access them for follow-up calls. If a bilingual interviewer encountered a Spanish-speaking respondent in the initial contact, the interviewer immediately began to conduct the interview in Spanish. These cases were coded as having been worked in Spanish but were not classified as having been language problem cases. Such cases are quite rare; only 3 Screeners were completed in this way in the NHES:96.

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[3] An examination of the percentage of single-female households was prompted by a concern that such households may be less likely to participate in surveys in which information on household composition is collected.

Language problem cases include a wide range of situations that result when a non-English-speaking person (or a speech or hearing impaired person) answers the telephone. For example, some households have members who speak English and other members who do not. In this case, the classification of the household as a language problem may depend on who answers the telephone for a specific call. Another possibility is that all household members speak English, but the telephone might be answered on some occasions by a person who does not live there and does not speak English. A second call to the household might be answered by an English-speaking household member. The procedures followed in the NHES:96 to attempt to obtain completed Screeners for cases classified as language problems are described in *Design, Data Collection, Survey Administration Time, and Data Editing in the 1996 National Household Education Survey* (Vaden-Kiernan, et al. 1996).

The results for Screener interviews that were ever classified as having a language problem are presented in table 9. The first section gives the results for those cases ever classified as hearing or speech problems. The second and third sections of the table concern language problem cases other than hearing or speech problems. The second section includes cases in which the interviewer reported that the respondent in the initial household contact was speaking Spanish. The third section includes cases in which the initial interviewer reported that the respondent was speaking a language other than Spanish or English. It should be noted that the interviewers were not trained to recognize the language of the respondent; they were merely asked to record what they thought the language spoken might have been.

There were 545 Screeners that were classified by at least one interviewer as a hearing or speech problem. About one-fourth of these cases were eventually completed, either because another household member answered the phone or because the interviewer initially misclassified the case. Of the 128 completed Screeners in this group, 12 were completed in Spanish.

The response rate for the 2,395 cases classified by the initial interviewer as Spanish-speaking was slightly lower than the overall rate for the Screener. This finding is contrary to the NHES:95, in which households initially believed to be Spanish speaking responded at higher rates than the national sample as a whole. About 66 percent of all these cases were finalized as completes in the NHES:96. About 92 percent of these cases were completed in Spanish, indicating the initial interviewers did an excellent job initially identifying the language spoken by the respondents as Spanish.

The reason for the difference in response among Spanish-speaking respondents between the NHES:95 and the NHES:96 is not evident. The distribution of nonresponse cases does not suggest that higher rates of refusal occurred among these households. In previous NHES administrations, most (but not all) Spanish-language interviewing was done from an Oceanside, California, facility, and this was not true in the NHES:96. However, we do not believe that a difference in using east-coast rather than west-coast interviewers could account for the difference in response. Both new and experienced interviewers have been used at both east coast and west coast telephone interviewing centers, and all interviewers receive the same type of training. Possible differences exist in dialects or accents of the interviewers, but the use of standard Spanish CATI screens eliminates much of the interviewer effect. As noted earlier, growing public debate about immigration and "official language" may be a factor, but we would not expect to see such a large difference over a period of one year.

The last section of table 9 shows that the completion rate for the 960 cases identified as speaking some language other than English or Spanish was only about 17 percent. A low completion rate for these types of cases was expected since the interview was conducted only in English and Spanish. Of the completed Screeners in this class, the number completed in English was more than twice as large as the number completed in Spanish.

Parent PFI/CI, Youth CI, and Adult CI Interview Response Rates

During the screening interview, all household members were enumerated. After the enumeration, samples of children or adults within the household were selected for the Parent PFI/CI and/or Youth CI, or Adult CI components. 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 PFI/CI interview. For older children sampled for the Youth CI interview and for adults sampled for the Adult CI interview, the interview was conducted only with the sampled person.

Table 10 presents the number of children enumerated, the number sampled, and the final status distribution for the Parent PFI/CI interview, along with the estimated completion and response rates. Since the study design precluded conducting more than two Parent PFI/CI interviews in the same household, some eligible children were not sampled. Of the enumerated 47,829 children eligible for sampling in the Parent PFI/CI component, a sample of 23,835 children was selected. About 2 percent of the sampled children were not actually in the age and grade range for the survey as determined by the Parent PFI/CI interview respondent. These children were classified as ineligible. Complete interviews were obtained for 20,792 of the sampled children for an estimated 89 percent completion rate. This completion rate is similar to those attained in the School Safety and Discipline (SS&D) and School Readiness (SR) components of the NHES:93, the NHES survey with parent interviews for children of the most comparable age range. When multiplied by the Screener response rate, the overall response rate for the Parent PFI/CI interview is 63 percent.

The number of older children enumerated, sampled, and the final status distribution for the Youth CI interview are also given in table 10. About 70 percent of the 15,560 enumerated older children were sampled for the Youth CI interview. Less than 2 percent of the sampled older children were classified as ineligible because their parent reported that they were not actually enrolled in grades 6 through 12. In all, 8,043 interviews were completed with the sampled youth. The estimated completion rate for the Youth CI interview is 76 percent. The estimated response rate is 53 percent which is the product of the Screener response rate and the Youth CI completion rate.[4]

The Youth CI interview condition completion rate for the NHES:96 (the percentage of interviews completed once the preceding parent interview was completed) was 86 percent compared to 92 percent for the Youth interview of the NHES:93 SS&D component. One possible explanation for the decrease is that explicit parental consent was required for the Youth CI interview in the NHES:96 but was not required for the NHES:93 Youth interview. In the NHES:96, about three-fourths of all refusals to the Youth CI interview came from parents (702 out of 955 refusals), and not from youth themselves.

The bottom section of table 10 gives the numbers of adults enumerated and sampled and the final status distribution for the Adult CI interview. In the adult sample, one adult per household was sampled randomly. A total of 2,250 adults completed the Adult CI interview. 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. The estimated Adult CI interview completion rate is 84 percent and the overall response rate is 59 percent. This completion rate is nearly the same as the completion rates attained in the Adult Education (AE) component of the NHES:95 and the NHES:91.

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[4] Note that the Youth CI response rate reflect parental nonresponse and parental refusal to permit the Youth CI interview. Both types of cases were included in the denominator of the Youth CI completion rate.

The reasons for nonresponse for the various components are presented in table 11. Respondent refusal to complete the interview accounted for about 62 percent of parent nonresponse and about 64 percent of adult nonresponse. The second most common cause of nonresponse for parents and adults was the inability to reach the respondent. This includes maximum call cases that may, in some cases, have been "hidden" refusals in which the respondent was avoiding the interview.

A different distribution of reasons for nonresponse is seen for the Youth CI interview. The leading cause of nonresponse for the Youth CI interview was inability to complete the Parent PFI/CI interview; completion of the Parent PFI/CI interview was a necessary condition for conducting the Youth CI interview. The second most common source of nonresponse was refusal to do the Youth CI interview. As noted above, about three-quarters of refusals to the Youth CI interview came from parents who declined to give permission for the youth to respond.

Language and other miscellaneous problems (e.g., respondent was ill or otherwise unavailable during the data collection period) accounted for less than 9 percent of the total nonresponse to the Parent PFI/CI, Youth CI, and Adult CI interviews.

Profile of Parent PFI/CI, Youth CI, and Adult CI Interview Completion Rates

The completion rates for the Parent PFI/CI, Youth CI, and Adult CI interviews can be examined by variables available for both respondents and nonrespondents. The four variables available for the Parent PFI/CI interview are census region (based on the telephone number), sex of the sampled child, age of the sampled child, and grade (if enrolled in school) of the sampled child. All of these items except census region were collected during the Screener. Table 12 shows the number of sampled children by response status and completion rate for each of these variables. The range of completion rates is from 77 to 93 percent. The completion rates are quite consistent across all the levels of census region and sex. In general, completion rates decrease as age and grade increase. This suggests the potential for nonresponse bias; however, the use of grade in creating weighting class adjustments for nonresponse (See the weighting section of this report) should reduce nonresponse bias. Since age is highly correlated with grade, the use of both variables for weighting was not necessary.

For the Youth CI interviews, five variables about each sampled youth are available for examining the response profile: census region, sex of the sampled child, age of the sampled child, highest educational attainment of a parent, grade of the child, and type of school (i.e., public *vs.* private). Census region was obtained based on the phone number; sex, age, and grade were obtained from the screener; and parental educational attainment and type of school were obtained from the Parent PFI/CI interview. The number of cases for these variables and the completion rates are shown in table 13.

There is little variation in the completion rates for region. The completion rates for age and grade increase through age 14 and 8th grade, and decrease slightly thereafter. Parents of younger youth were less likely to give consent than parents of older youth. This had the effect of increasing completion rates as age/grade increased. An opposite effect was due to the fact that older youth were harder to reach at home, which resulted in a decline in completion rates with increasing age/grade. These highly variable rates could be indicative of potential bias. To reduce the bias in the estimates, nonresponse adjustment groups based on the classification of the sampled youth by grade were used in producing the weights for estimation. This procedure is especially important for the Youth CI interview because the overall response rate is lower for the Youth CI interview than for the other interviews. Completion rates for the Youth CI interview

increased as parental educational attainment increased, suggesting that parents with higher educational attainment were more likely to cooperate in the survey about their children's education. The completion rate for youth enrolled in public school was higher than that for youth enrolled in private school, and both rates were considerably higher than that for youth who are schooled at home. However, the completion rate for home schoolers is based on a relatively small number of sampled youth.

For the Adult CI interview, four variables from the screener were considered in examining the response profile: sex, age, marital status, and highest educational attainment (table 14). The completion rate for females was slightly higher than that for males. Completion rates decreased as age increased. This is consistent with the hypothesis that the elderly, who are less likely to have children enrolled in school, are less likely to participate in a survey sponsored by an education agency. Separated and divorced adults cooperated at a higher rate than others. As was the case with the Parent PFI/CI interview, completion rates for the Adult CI interview increased as the educational attainment of the adult increased. To reduce bias due to extended interview nonresponse, the variables sex, marital status, and educational attainment were used to form weighting class adjustment cells for nonresponse adjustment. Age was not used in the Adult CI nonresponse adjustment; because of the relatively small sample size for this interview, the numbers of cases in the adjustment cells were too small when age was included.

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Unit Response Rate

Tables 1 - 14

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Table 1.—Number of telephone numbers dialed by residential status and Screener response rates

Screener response category	Number	Percentage of all numbers	Percentage of residential numbers
Total...	161,446	100.0	
Identified as residential................................	76,258	47.2	100.0
Participating..	55,838	34.6	73.2
Not participating......................................	20,420	12.6	26.8
Identified as nonresidential............................	75,736	46.9	
Unknown residential status.............................	9,452	5.9	

Screener response rates*	Rate (Percent)
Estimated response rate (using business office method)......................	69.9
CASRO response rate....................................	69.1
Conservative response rate.............................	65.4
Liberal response rate.....................................	73.4

*All the response rates use the weighted number of participating households as the numerator. The denominators vary but are all estimated totals: for the estimated response rate using 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 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.

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), spring 1996.

Table 2.—Number and percentage of telephone households, by Screener response status

Screener response category	Number	Percent
Participating residential phone numbers....................................	55,838	100.0
Households with no extended interviews scheduled..	33,901	60.7
Households with at least one extended interview scheduled...	21,937	39.3
Nonparticipating residential phone numbers...........................	20,420	100.0
Refusals...	16,864	82.6
Language problems..	1,163	5.7
Maximum calls...	2,037	10.0
Other problems...	356	1.7

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1996.

Table 3.—Number and percent of participating households, by type of interviews scheduled

Type of interview scheduled	Number of households	Percent	Percent of parent/youth sample households
Total..	55,838		
Parent/Youth Sample.........................	53,211	95.3	100.0
Parent Only................................	8,406		15.8
Both Parent and Youth...............	10,931		20.5
No Extended Interview...............	33,874		63.7
Adult Sample*..................................	2,627	4.7	

* Includes 27 households where no one was eligible for an extended interview (all-military households and households where no household member is 18 years of age or older).

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1996.

Table 4.—Number of telephone numbers dialed in the Screener, by response status, response rate, and state

State	Total	Residential, participating	Residential, not participating	Non-residential	Unknown residential status	Estimated[*] response rate (%)
Total	161,446	55,838	20,420	75,736	9,452	69.9
Alaska	1,947	508	138	1,197	104	73.8
Alabama	2,298	912	283	1,018	85	74.3
Arkansas	1,219	503	138	536	42	76.3
Arizona	2,115	775	291	945	104	68.7
California	20,435	6,122	3,118	9,645	1,550	62.2
Colorado	2,009	685	225	989	110	72.3
Connecticut	1,774	602	244	821	107	67.7
District of Columbia	1,702	379	168	1,002	153	60.7
Delaware	1,361	493	159	584	125	70.0
Florida	8,723	2,847	1,273	4,045	558	66.3
Georgia	4,531	1,578	527	2,204	222	71.6
Hawaii	1,361	417	186	713	45	67.1
Iowa	1,289	468	105	660	56	78.7
Idaho	1,361	518	106	671	66	79.6
Illinois	6,697	2,182	907	3,233	375	68.1
Indiana	2,888	1,052	310	1,419	107	75.4
Kansas	1,153	468	129	505	51	75.9
Kentucky	1,598	646	163	730	59	77.8
Louisiana	2,547	954	351	1,140	102	71.1
Massachusetts	2,832	972	467	1,185	208	64.1
Maryland	3,025	1,083	393	1,361	188	70.9
Maine	1,361	445	124	688	104	72.8
Michigan	4,724	1,691	553	2,138	342	72.1
Minnesota	1,994	824	210	874	86	77.1
Missouri	2,692	1,009	292	1,288	103	75.9
Mississippi	1,532	621	163	690	58	77.0
Montana	1,361	513	101	702	45	81.1
North Carolina	4,502	1,718	474	2,067	243	74.7
North Dakota	1,361	539	109	669	44	81.0
Nebraska	1,361	467	112	731	51	78.3
New Hampshire	1,361	480	135	639	107	72.9
New Jersey	4,509	1,463	737	1,898	411	62.0
New Mexico	1,361	545	166	574	76	73.7
Nevada	1,362	443	163	656	100	68.8
New York	10,776	3,430	1,770	4,755	821	62.6
Ohio	6,018	2,064	595	3,070	289	75.3
Oklahoma	1,501	544	200	683	74	71.2
Oregon	1,478	509	174	731	64	71.8
Pennsylvania	5,614	2,102	789	2,370	353	70.0
Rhode Island	1,361	537	227	542	55	68.3
South Carolina	2,337	856	253	1,140	88	74.4
South Dakota	1,361	548	94	670	49	82.8

Table 4.—Number of telephone numbers dialed in the Screener, by response status, response rate, and state—Continued

State	Total	Residential, participating	Residential, not participating	Non-residential	Unknown residential status	Estimated[*] response rate (%)
Tennessee	2,585	944	326	1,205	110	72.2
Texas	11,987	4,091	1,497	5,833	566	69.9
Utah	1,361	587	129	571	74	78.7
Virginia	3,800	1,369	409	1,790	232	73.8
Vermont	1,361	462	111	686	102	75.2
Washington	2,553	888	311	1,224	130	70.9
Wisconsin	2,285	884	241	1,023	137	75.0
West Virginia	1,361	581	170	559	51	75.3
Wyoming	1,361	520	104	667	70	79.7

[*]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.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1996.

Table 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, participating	Residential, not participating	Non-residential	Unknown residential status	Estimated[*] response rate (%)
Total...........................	161,446	55,838	20,420	75,736	9,452	69.9
Census division						
New England......................	10,050	3,498	1,308	4,561	683	67.8
Mid-Atlantic......................	20,899	6,995	3,296	9,023	1,585	64.8
East North Central............	22,612	7,873	2,606	10,883	1,250	72.6
West North Central...........	11,211	4,323	1,051	5,397	440	77.4
South Atlantic...................	31,342	10,904	3,826	14,752	1,860	70.8
East South Central.............	8,013	3,123	935	3,643	312	74.9
West South Central............	17,254	6,092	2,186	8,192	784	70.8
Mountain...........................	12,291	4,586	1,285	5,775	645	73.5
Pacific..............................	24,466	7,519	3,603	11,600	1,744	64.2
Alaska/Hawaii...................	3,308	925	324	1,910	149	69.3
Minority concentration						
High...................................	69,815	22,605	9,365	33,719	4,126	67.1
Not high............................	91,631	33,233	11,055	42,017	5,326	71.0
Percent college graduates						
Less than 11 percent..........	53,399	18,338	5,962	26,556	2,543	72.9
11 to 25 percent.................	76,782	27,267	10,380	34,649	4,486	69.3
26 percent or more.............	31,265	10,233	4,078	14,531	2,423	67.0
Percent black						
Less than 10 percent..........	99,569	35,535	12,448	45,710	5,876	70.4
10 to 19 percent.................	18,304	6,140	2,412	8,604	1,148	68.9
20 percent or more.............	43,573	14,163	5,560	21,422	2,428	68.4
Percent Hispanic						
Less than 10 percent..........	112,430	40,219	13,418	52,553	6,240	71.4
10 to 19 percent.................	16,686	5,382	2,324	7,856	1,124	65.7
20 percent or more.............	32,330	10,237	4,678	15,327	2,088	64.8
Percent with children under 18						
Less than 15 percent..........	4,523	871	474	2,689	489	56.9
15 to 29 percent.................	124,605	43,475	16,117	57,516	7,497	69.8
30 percent or more.............	32,318	11,492	3,829	15,531	1,466	72.4
Median income						
Less than $28,000..............	46,958	15,049	5,156	24,280	2,473	71.5
$28,000 to $37,000............	58,999	21,118	7,543	27,065	3,273	70.7
$38,000 or more.................	55,489	19,671	7,721	24,391	3,706	68.2
Percent owner occupied						
Less than 56 percent..........	48,690	13,884	6,165	25,233	3,408	64.8
56 to 70 percent.................	59,326	22,116	7,856	26,089	3,265	70.6
71 percent or more.............	53,430	19,838	6,399	24,414	2,779	72.1
Median home value						
Less than $50,000..............	20,801	6,720	1,969	11,323	789	75.0
$50,000 to $99,999............	72,491	27,087	8,647	33,151	3,606	72.9
$100,000 or more...............	68,154	22,031	9,804	31,262	5,057	65.4
Percent renters						
Less than 34 percent..........	76,472	28,641	9,340	34,518	3,973	72.0
34 to 50 percent.................	52,837	18,646	7,008	24,111	3,072	69.4
51 percent or more.............	32,137	8,551	4,072	17,107	2,407	62.6

Table 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, participating	Residential, not participating	Non-residential	Unknown residential status	Estimated[*] response rate (%)
Metropolitan status						
In county in central city.......	65,024	21,466	8,630	30,929	3,999	68.0
In county not in central city..	27,139	9,692	3,846	11,972	1,629	68.6
Subcounty of MSA...............	27,251	10,102	3,603	11,957	1,589	70.4
MSA in its own county........	7,205	2,284	1,165	3,208	548	62.0
Not MSA.............................	34,827	12,294	3,176	17,670	1,687	75.9

[*]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.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1996.

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Table 6.—Screener response rates, by cells formed from area characteristics

Cell	Census division	Metro status	Percent renters	Percent with children	Percent Hispanic	Percent black	Percent college graduate	Median income	Completion rate
1	ah,sa,wsc	1,2,3,4			0-9		0-10		74.5
2	ah,sa,wsc	1,2,3,4			0-9		11-25		72.0
3	ah,sa,wsc	1,2,3,4			0-9		26+		75.2
4	ah,sa,wsc	1,2,3,4			10-19				68.5
5	ah,sa,wsc	1,2,3,4		0-29	20+				70.7
6	ah,sa,wsc	1,2,3,4		30+	20+				76.5
7	ah,sa,wsc	5							78.5
8	ne	1,2,5							73.7
9	ne	3,4							68.0
10	ma,p	1,2,3	0-50					$0-37K	71.8
11	ma,p	1,2,3	0-50		0-9			$38K+	69.7
12	ma,p	1,2,3	0-50		10+			$38K+	65.6
13	ma,p	4	0-50		0-9				61.9
14	ma,p	4	0-50		10+				68.3
15	ma,p	5	0-50						74.3
16	ma		51+			0-9			55.8
17	p		51+			0-9			63.9
18	ma,p		51+			10+			65.3
19	enc	1,2,3			0-9	0-9			75.8
20	enc	1,2,3			0-9	10+			72.9
21	enc	1,2,3			10+				68.6
22	enc	4,5							81.1
23	wnc	1,2,3							78.0
24	wnc	4,5							83.4
25	esc,m	1,2,3		0-29					73.4
26	esc,m	4,5		0-29					80.1
27	esc,m			30+					82.6

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, spring 1995.

Category codes: 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 division: ne = New England; ma = Mid-Atlantic; enc = East North Central; wnc = West North Central; sa = South Atlantic; esc = East South Central; wsc = West South Central;   m = Mountain; p = Pacific; ah = Alaska/Hawaii.

Table 7.—Percentage of households with children from the NHES:96 and the October 1994 CPS

Age/grade of child	NHES:96 screened parent/youth sample households		October 1994 CPS
	Unweighted	Weighted	
At least one child 3 years through 12 grade.......................	36.4%	33.4%	37.5%
3 years through 5th grade only.......................	15.8	15.2	19.4
6th through 12th grade only...........................	12.1	10.7	15.1
Both 3 years through 5th grade and 6th through 12th grade...	8.5	7.5	3.0

SOURCES: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1996, and U.S. Bureau of the Census, Current Population Survey, October 1994 (unpublished tabulations).

Table 8.—Percentage distribution for households and persons from the NHES:96 and the March 1995 CPS: weighted estimates

Characteristic	NHES:96 screened households	March 1995 CPS	Difference
Household composition			
1-person..	23.3%	25.0%	-1.7
1-person, female..................................	13.9	14.8	-0.9
1-person, male....................................	9.3	10.3	-1.0
With person 65 years or older...............	21.0	23.7	-2.7
Persons age			
0 to 2 years...	3.8	4.6	-0.8
3 to 5 years...	4.7	4.8	-0.1
6 to 9 years...	6.2	6.0	0.2
10 to 19 years.....................................	14.6	14.3	0.3
20 to 29 years.....................................	14.8	14.3	0.5
30 to 39 years.....................................	16.8	16.9	-0.1
40 to 49 years.....................................	14.8	14.3	0.5
50 to 59 years.....................................	9.7	9.2	0.5
60 or more years..................................	14.6	15.7	-1.1
3 to 10 years.......................................	12.5	12.2	0.3
11 to 18 years.....................................	11.7	11.5	0.2
65 or more years..................................	10.9	11.9	-1.0

SOURCES: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1996, and U.S. Bureau of the Census, Current Population Survey, March 1995 (unpublished tabulations).

Table 9.—Language problem Screener interviews, by response status: unweighted numbers of cases

Problem	Number	Percent
Hearing/Speech Problems		
Total	545	100.0
Completed in English..	116	21.3
Completed in Spanish..	12	2.2
Refusals..	132	24.2
Language Problems..	239	43.9
Other...	46	8.4
Identified as Spanish-speaking Problems		
Total...	2,395	100.0
Completed in English..	124	5.2
Completed in Spanish..	1,455	60.8
Refusals..	323	13.5
Language Problems..	271	11.3
Other...	222	9.3
Identified as Other Language Problems		
Total...	960	100.0
Completed in English..	116	12.1
Completed in Spanish..	44	4.6
Refusals..	87	9.1
Language Problems..	675	70.3
Other...	38	4.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1996.

Table 10.—Number of enumerated children and adults, completed interviews, and completion and response rates, by type of extended interview

Type of interview	Number	Estimated completion rate	Estimated response rate
Parent PFI/CI			
Enumerated......................................	47,829		
Sampled..	23,835		
Ineligible..	471		
Nonresponding................................	2,572		
Complete...	20,792	89.4	62.5
Youth CI			
Enumerated......................................	15,560		
Sampled..	10,949		
Ineligible..	171		
Nonresponding................................	2,735		
Complete...	8,043	76.4	53.4
Adult CI			
Enumerated......................................	4,996		
Sampled..	2,600		
Ineligible..	11		
Nonresponding................................	339		
Complete...	2,250	84.1	58.8

NOTE: The response were calculated by multiplying the estimated completion rate by the estimated Screener response rate of 69.9.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey, spring 1996.

Table 11.—Reasons for extended interview nonresponse, by type of interview and final status: Unweighted numbers of cases

Interview type and final status	Number	Percent
Parent PFI/CI		
Total..	2,572	100.0
Refusal...	1,582	61.5
Not available or not reached..	663	25.8
Language problem...	159	6.2
Other...	168	6.5
Youth CI		
Total..	2,735	100.0
Nonrespondent to the Parent PFI/CI interview....................	1,385	50.6
Parent refusal to permit Youth CI interview........................	702	25.6
Youth refusal...	253	9.2
Not available or not reached..	252	9.2
Language problem...	16	0.6
Other...	127	4.6
Adult CI		
Total..	339	100.0
Refusal...	218	64.3
Not available or not reached..	92	27.1
Language problem...	19	5.6
Other...	10	2.9

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1996.

Table 12.—Number of sampled Parent PFI/CI interviews, by response status and completion rates

Parent PFI/CI interviews	Total	Participating	Nonresponse	Ineligible	Estimated completion rate (%)
Total....................................	23,835	20,792	2,572	471	89.4
Census region					
Northeast........................	4,269	3,706	471	92	88.7
Midwest	5,137	4,566	476	95	90.6
South.............................	8,565	7,483	937	145	89.7
West..............................	5,864	5,037	688	139	88.1
Sex of child (Screener)					
Female	11,530	10.035	1,273	222	89.2
Male..............................	12,305	10,757	1,299	249	89.6
Age of child (Screener)					
3 years...........................	1,511	1,089	120	302	91.1
4 years...........................	1,531	1,422	102	7	93.3
5 years...........................	1,494	1,348	145	1	90.7
6 years...........................	1,406	1,285	120	1	92.2
7 years...........................	1,381	1,245	135	1	90.7
8 years...........................	1,481	1,330	150	1	92.0
9 years...........................	1,527	1,381	146	0	91.2
10 years.........................	1,679	1,509	169	1	90.6
11 years.........................	1,603	1,444	158	1	90.0
12 years.........................	1,673	1,426	243	4	85.4
13 years.........................	1,750	1,531	216	3	88.7
14 years.........................	1,500	1,312	179	9	88.1
15 years.........................	1,516	1,308	201	7	86.5
16 years.........................	1,510	1,310	186	14	84.9
17 years.........................	1,347	1,184	141	22	89.1
18 years.........................	784	580	139	65	80.5
19 years.........................	110	76	20	14	76.7
20 years.........................	30	12	2	16	88.3
Unknown[1]	2	--	--	2	--
Grade of child (Screener)					
Not enrolled	1,795	1,405	147	243	91.3
Nursery/preschool	1,799	1,596	136	67	92.5
Kindergarten.................	1,558	1,414	143	1	91.0
1st grade	1,508	1,392	115	1	93.2
2nd grade	1,394	1,242	149	3	90.7
3rd grade.......................	1,509	1,359	150	0	91.1
4th grade.......................	1,669	1,503	166	0	91.1
5th grade.......................	1,669	1,486	181	2	89.6
6th grade.......................	1,733	1,515	215	3	87.5
7th grade.......................	1,691	1,477	209	5	87.7
8th grade.......................	1,619	1,393	222	4	86.4
9th grade.......................	1,550	1,363	176	11	89.8
10th grade.....................	1,490	1,280	195	15	85.0
11th grade.....................	1,427	1,219	177	31	85.0
12th grade.....................	1,410	1,143	188	79	85.5
Unknown	5	--	--	5	--
Other[2]	9	5	3	1	79.4

[1] Characteristics obtained during the parent interview are unknown for ineligible youth and for youth for whom no interview was   attempted because the parent interview was not completed (designated as youth on hold).
[2] "Other" includes special education and ungraded.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1996.

Table 13.—Number of sampled Youth CI interviews, by response status and completion rates

Youth CI interviews	Total	Participating	Nonresponse	Ineligible	Youth on hold	Estimated completion rate (%)
Total............................	10,949	8,043	1,350	171	1,385	85.5
Census region						
Northeast................	1,962	1,402	260	34	266	84.3
Midwest................	2,295	1,750	264	32	249	86.6
South....................	4,012	2,949	482	53	528	86.3
West......................	2,680	1,942	344	52	342	84.0
Sex (Screener)						
Female...................	5,335	3,942	606	88	699	86.1
Male......................	5,614	4,101	744	83	686	85.0
Age (Screener)						
Less than 10 years...	5	2	3	0	0	40.7
10 years..................	32	14	8	5	5	64.4
11 years..................	802	605	112	6	79	83.9
12 years..................	1,571	1,148	199	6	218	85.1
13 years..................	1,745	1,316	208	5	216	85.6
14 years..................	1,500	1,140	171	10	179	87.9
15 years..................	1,514	1,128	179	7	200	86.9
16 years..................	1,509	1,130	179	14	186	85.7
17 years..................	1,347	1,016	168	22	141	84.7
18 years..................	784	474	105	66	139	83.6
19 years..................	110	62	14	14	20	75.0
20 years..................	30	8	4	16	2	66.8
Highest Educational Attainment of Parent (Parent Intv.)						
Less than high school....................	755	610	141	4	0	80.4
High school graduate or equivalent...............	2,664	2,273	383	8	0	85.9
Vocational/ technical education after high school or some college..........	2,848	2,401	444	3	0	84.4
College graduate....	1,548	1,346	200	2	0	86.4
Graduate or professional school....................	1,595	1,413	182	0	0	88.4
Unknown[1]..............	1,539	--	--	154	1,385	--

Table 13.—Number of sampled Youth CI interviews, by response status and completion rates—Continued

Youth CI interviews	Total	Participating	Nonresponse	Ineligible	Youth on Hold	Estimated completion rate (%)
Grade of child (Screener)						
6th grade................	1,731	1,265	236	16	214	83.7
7th grade................	1,691	1,251	224	7	209	84.9
8th grade................	1,619	1,228	164	5	222	87.7
9th grade................	1,550	1,167	196	11	176	87.0
10th grade.............	1,490	1,110	170	15	195	87.0
11th grade.............	1,427	1,045	174	31	177	83.4
12th grade.............	1,410	965	177	80	188	85.3
Other[2]....................	7	0	3	1	3	0.0
Unknown[1]................	24	12	6	5	1	70.9
Type of school (Parent intv.)						
Public....................	8,277	7,130	1,131	16	0	86.3
Private....................	997	810	187	0	0	80.3
Home Schoolers......	136	103	32	1	0	74.0
Unknown...............	1,539	--	--	154	1,385	--

[1] Characteristics obtained during the parent interview are unknown for ineligible youth and for youth for whom no interview was attempted because the parent interview was not completed (designated as youth on hold).

[2] "Other" includes special education and ungraded.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1996.

Table 14.—Number of adults sampled for Adult CI interviews, by response status and completion rates

Adult CI interviews	Total	Participating	Nonresponse	Ineligible	Estimated completion rate (%)
Total..................................	2,600	2,250	339	11	84.1
Sex (Screener)					
Female...........................	1,452	1,291	158	3	85.8
Male.............................	1,148	959	181	8	82.1
Age (Screener)					
18 to 34 years...............	826	711	104	11	85.0
35 to 49 years...............	858	752	106	0	85.3
50 to 64 years...............	473	410	63	0	83.4
65 years or more...........	443	377	66	0	80.3
Marital status (Screener)					
Married/remarried.........	1,440	1,227	211	2	84.0
Separated.......................	52	45	7	0	91.2
Divorced........................	320	300	20	0	91.7
Widowed........................	240	212	28	0	80.2
Never married................	548	466	73	9	81.5
Highest Educational Attainment (Screener)					
Less than high school......	343	286	55	2	81.1
High school graduate or equivalent	863	717	144	2	80.4
Vocational/technical education after high school or some college....	735	655	75	5	86.8
College graduate.............	401	355	44	2	87.0
Graduate or professional school............................	258	237	21	0	88.8

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1996.

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Item Response and Imputation Procedures for the NHES:96

Introduction

In the NHES:96, 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. 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 ("not ascertained").

Methodology

For most of the data items collected in the NHES:96, the item response rate was very high. For the Screener, the median response rates for imputed items were 94.97 percent for household-level characteristics (including library items) and 99.48 percent for person-level characteristics. For the Parent PFI/CI, Youth CI, and Adult CI questionnaires the median item response rates for imputed items were 99.08 percent, 99.38 percent, and 99.47 percent, respectively. Response rates for items pertaining to income are lower than for other items, due to the highly sensitive nature of income questions. Another set of items that sometimes exhibit low response rates are those that few respondents get a chance to answer. The items about parents who do not live with their sampled children (referred to as nonresidential parents) are good examples of this. For rarely asked items such as these, one or two missing values could result in a low item response rate.

Despite the overall high item response rate, virtually all data items with missing data (i.e., responses not ascertained, "don't know" responses, and refusal to respond to the particular question) were imputed. For the public release files, the exceptions were the political knowledge items where "refused" and "don't know" responses are of analytic interest and are thus treated as responses. 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, however, they may be obtained in restricted use data files available through a special licensing agreement with NCES.

Imputation was done for two reasons. First, complete responses were needed for variables used in developing the sampling weights. Second, users will be computing estimates using a variety of methods and complete responses should aid their analyses.

A hot-deck procedure was used to impute most missing responses. (See the discussion of manual imputation, below, for exceptions.) For this approach, the data file was sorted into cells defined by characteristics of the respondents. These characteristics, or boundary variables, were used to group respondents into those most likely to have the same response 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 WESDECK software was used to implement the hot-deck imputation procedure.

For variables which 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 determines 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 variable, 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 indicates that the item should be skipped, the variable was set equal to -1 (if it wasn't already equal to -1) prior to running WESDECK.

When item response rates are low, the potential bias due to item nonresponse is of particular concern. If item response propensities vary substantially across levels of a particular characteristic, then that characteristic should be used in forming cells for hot-deck imputation, in order to reduce the bias due to item nonresponse. The characteristics used to form the cells for hot-deck imputation included items that were expected to be predictors of response propensity for the particular characteristic.

Having been sorted into cells defined by the boundary variables, the observations were divided into two groups within the cells 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. Whenever a case with a missing value was encountered, the value of the data item from a randomly selected donor within the same cell was imputed for the missing item. This method is called a hot-deck procedure because donors are selected from the current data set, as opposed to some pre-defined set of allowable values. The distribution of each variable before and after hot-deck imputation was reviewed to ensure that the imputed data did not significantly alter the distribution.

For each data item that was imputed, an imputation flag variable was created. If the response for the item was imputed, then the imputation flag was set equal to a value between 1 and 4, where a 1 indicates hot-deck imputation without any preliminary recoding necessary, 2 indicates hot-deck imputation with preliminary recoding from -1 to -9, 3 indicates manual imputation, and 4 indicates that the original response was -8 ("don't know"). For values that were not imputed, the imputation flag was set to zero. The flag enables users to identify imputed values and the method of imputation used. If desired, the user can then delete the imputed values, use alternative imputation procedures, or account for the imputation in the computation of the reliability of the estimates produced from the data file. The flag value of 4 was set so that users can consider "don't know" responses to items separately from other nonresponse. This may provide analytic utility in the analysis of variables such as FSHADMEE, FSHADCN, FSHADBAC, FSHADPTA, FSHADCOU, FSHADCN, FHHOME, FHSHARE, HNDOCWHN, HNDNTIST, and HNDNTWHN on the Parent PFI/CI File, and PRSTUGOV, SAARRSER, and SAREQSER on the Youth CI File (This list of variables is provided for illustrative purposes only, and is not all-inclusive.).

Manual Imputation

Manual imputation was used in the NHES:96 for five purposes. The first was to impute Parent interview variables for children who are home schooled. Secondly, manual imputation was used to impute variables that involved complex relationships that would have required extensive programming to impute using a hot-deck procedure. A third use of manual imputation was to correct for inconsistent imputed values following post-imputation data editing. Fourthly, it was used to impute for a few cases when no donors with matching hard boundary variable values could be found. The final use of manual imputation

was to impute person-level characteristics from the Screener. Each of the reasons for manual imputation are discussed below along with the methods used in the imputation. The percentages of imputed cases that were manually imputed for each item are given tables 2 (person-level variables from the household-Screener), 4 (household characteristics from the Screener), 8 (Parent PFI/CI items), 12 (Youth CI items), and 16 (Adult CI items).

For home schoolers, Parent PFI/CI interview variables were imputed manually. The skip patterns for home schoolers (FIPATH=H) in the Parent PFI/CI interview were very different from those used for other children. Additionally, many Parent PFI/CI interview questions did not apply to home schoolers. Because of this and the small number of home schoolers for which a Parent PFI/CI interview was completed (244), the home schoolers' missing items were imputed manually. For the most part, donors for imputing items for home schoolers were chosen among the other home schoolers with the same grade. One exception to this rule occurred when imputing items about nonresidential parents. For these items, donors were chosen among home schoolers of the same age.

When a household member's relationship to the child was missing, the variable RELATN(n) was imputed manually. A survey manager reviewed a printout containing a listing of the age, gender, and relationship of all household members to the subject child in order to determine a reasonable imputed value for the missing RELATN(n). Manual imputation was used here because this examination of complex relationships would have required extensive programming.

Following imputation, edit programs were run to ensure the imputed responses did not violate edit rules. A small number of edit failures and skip problems was identified as a result, and an update was made to the data file by manually imputing the problem item. The distribution of the item in question was used to arrive at the new values. A small number of imputed values that were inconsistent were deleted and imputed manually.

For a small number of variables, hot-deck imputation failed for a few cases when no donors with matching hard boundary variable values could be found. For these cases, if relaxing the hard boundary variable requirements still did not produce a donor, manual imputation was done. The distribution of the complete data for each item was used to assign imputed values. The standard hard and soft boundary variables[5] used to impute in WESDECK were not always used to control the manual imputation process; however, the recipient's reported values for other correlated variables were taken into consideration to ensure consistency of the imputed data.

Person-level characteristics from the Screener were imputed manually because 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 permitted the review of the characteristics of household members when imputing the missing values on the person-level variables.

For manual imputation of person-level characteristics, three sort variables were utilized. State was used as a hard boundary variable, and 3-digit ZIP code and person identification number were used as soft boundary variables. Because all household members share the first 8 digits of their identification numbers,

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[5] A standard set of variables was used for each data file. These are discussed in the following sections.

sorting by person identification number resulted in all household members being grouped together. The specifications for each variable indicated whether within-household or outside-household imputation was done.

Updates and Imputations

Some of the values changed during the manual imputation process were actually updates. This occurred when a value was missing in the Screener, but was available from another source in the database. For example, when an adult had a missing value on the variable GRADE(n) (highest education), the database was checked to see if that person was the mother or father of a sampled child and, if so, the value of MOMGRADE or DADGRADE (as appropriate) was used to update GRADE(n). Conversely, when GRADE(n) was available for the mother or father but MOMGRADE or DADGRADE had missing values, the value of GRADE(n) (for the appropriate person) was used to update MOMGRADE or DADGRADE. Very few values were updated in this way, since most such updates had been made prior to data extraction and the post-extraction process was just an additional check. 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., GRADE(n)) was imputed, and the imputed value was copied into the other variable (e.g., MOMGRADE); likewise, the value of the imputation flag for the first variable was copied into the value of the imputation flag for the second variable.

Variables for Weighting and Imputation

Certain variables were imputed first so that they could be used to create cells for weighting class adjustments and for hot-deck imputation. The Screener variable HNUMUSE was used to adjust household-level weights for the number of telephones in the household. The Screener variables HOWNHOME , HZIPCODE, HINCOME, RACE(n), and HHAGE(n) were used in forming cells for raking the household-level weights and person-level weights for the extended interviews (for Parent PFI/CI and Youth CI interviews, the child's age calculated from year of birth was substituted for HHAGE(n)). The Screener variables SGRADE(n) and SGRDEQ(n) for the sampled child were used to form nonresponse adjustment cells for the Parent weights, while HISPAN(n) for the sampled child was used in forming cells for raking the Parent weights. The Parent PFI/CI interview variables GRADE and GRADEEQ were used to form nonresponse adjustment cells for the Youth weights and raking cells for both the Parent and Youth weights. The person-level Screener variables MARITL(n), GRADE(n), and SEX were used to form nonresponse adjustment cells for the Adult weights, and SEX was also used in forming raking cells for the Adult weights.

For imputation of household-level items from the Screener, the variables GRADE(n), SDIPL(n), HHAGE(n), and HOWNHOME were used in forming the boundary variables for imputation of other items; GRADE, SPUBLIC, SEX, MOMGRADE, DADGRADE, MOMDIPL, DADDIPL, MOMTYPE, and DADTYPE were used to form the boundary variables for imputation of items from the Parent PFI/CI interview; the variables GRADE, SPUBLIC, SEX, MOMGRADE, DADGRADE, MOMDIPL, and DADDIPL were used to form the boundary variables for imputation of items from the Youth CI interview; and AGE, AGRADE, ADIPL, SEX, and CAPARENT were used to create boundary variables for imputation of items from the Adult CI interview. Each of these variables had to be imputed before imputation of the corresponding component could proceed. In cases in which a sort variable within a given file had missing values for some cases, all other sort variables without missing values were used to impute the sort variable with missing values prior to continuing with subsequent stages of imputation.

Screener Questionnaire

As discussed in Section 1, person-level items from the Screener were imputed manually. The household-level variables XHHACTV, XHHBORN, and XHHLANG were also imputed manually, since they were fully determined by the responses to corresponding person-level items. Note that since many Screener items were copied to extended interview files, response rates for such items are given for the extended interview file as well as for the Screener; the response rates given for the extended interview file correspond to the subset of cases contained in the file. The following is a description of the rules used to manually impute person-level Screener items.

Person-Level Items

If a Parent PFI/CI interview was completed for a child with missing age from the Screener, then the age of the child was computed from the child's month and year of birth reported during the Parent PFI/CI interview. This was treated as an update rather than an imputation. Otherwise, characteristics such as grade (for an enrolled child) or relation (for a person other than an enrolled child) were used in combination with the sort variables (state, 3-digit ZIP code, and person identification number) to find a donor. For adults in households where no Parent PFI/CI interview was completed, the distributions of ages of adults (within the household, if available; otherwise, within 3-digit ZIP code) was used to impute age.

Sex was imputed manually in one of two ways. A deterministic approach was used when the characteristics of the household members suggested an appropriate answer. In cases where the available information did not clearly suggest an appropriate answer, the file was sorted by the sort variables (state, 3-digit ZIP code, and person identification number) and sex was alternately imputed as male or female.

Whenever possible, the person's race, country of birth, and first language were imputed from donors within the same household. When donors were not available in the same household, the file was sorted by the sort variables and a member of a contiguous household (or the nearest household with a response to the item) was used as a donor.

Marital status was imputed using a deterministic approach based on the characteristics of the household members. Detailed rules were developed for this purpose based on the number of adults in the household, gender of adults, age, etc. Current enrollment and, if applicable, home schooling (yes/no), grade in school (including grade, grade equivalent, year of vocational school, year of college, and year of graduate school), full-time or part-time enrollment, and public or private enrollment were imputed using as the donor the nearest person of the same age as the case with the missing value. High school diploma and highest grade completed were imputed from a donor within the same household whenever possible; otherwise, the nearest donor (subject to criteria such as age, grade, etc.) outside the household was used.

Table 1 shows the item response rates for Screener person-level items. Response rates for these items are all over 90 percent, and ACTVDU(n) (the active duty military indicator) had a 100 percent response rate. As discussed in Section 1, all imputation of person-level Screener items was done manually, and the number of cases imputed for each item is shown in table 2.

Household-Level Items

For the most part, household-level items from the Screener were imputed using WESDECK. The standard set of hard boundary variables for most household-level Screener items consisted of STATE, *HIGRADR*, and the trigger variable. *HIGRADR* is a variable derived from GRADE(*n*) and SDIPL(*n*) which classifies households according to the highest educational attainment level of any household member (less than high school diploma, high school diploma but no bachelor's degree, college graduate). Within each cell created by the hard boundary variables, the household records were sorted by *KIDINHH* and HOWNHOME (owned or rented home). *KIDINHH* is a variable that indicates whether children under 18 years old are present in the household; this variable was derived from the AGE of each household member. *HIGRADR* and *KIDINHH* were created for use in imputation only and do not appear on the public data files.

Table 3 shows the item response rates for the household-level (as opposed to person-level) items in the Screener, including the library items. Table 4 lists the few variables that were imputed manually (Most of the household-level variables were imputed using the hot-deck procedure.). Table 5 lists those items that had a response rate of less than 90 percent. These variables can be grouped into two categories: those related to community size and those related to household income. Community size items might have low response rates because respondents may have had difficulty estimating the population of the suburb or city in which they live. 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 item response rate for HINCMEXT (household income to the nearest thousand) is just slightly more than half that for HINCMRNG ($25,000 or less/more than $25,000).

Parent PFI/CI Questionnaire

The standard set of hard boundary sort variables for most items consisted of MAINRSLT, GRADE, SPUBLIC, and the trigger variable. Within each cell created by the hard boundary variables, the sampled Parent PFI/CI interview records were sorted by SEX, *PARGRADS*, and *HHPARNS*. *PARGRADS* is a variable created from MOMGRADE, DADGRADE, MOMDIPL, and DADDIPL which classifies cases according to the highest educational attainment of any parent or guardian living in the household (less than a high school diploma, high school diploma but no bachelor's degree, college graduate). The variable *HHPARNS* is a variable that identifies the household as comprising both a mother and a father, or otherwise. *HHPARNS* was derived from the variables MOMTYPE and DADTYPE. The variables *PARGRADS* and *HHPARNS* were created for use in imputation only, and do not appear on the public data files.

For imputation of SETHNIC, the variables RACE and HISPANIC were used as hard boundary variables in addition to MAINRSLT and SPUBLIC. Data from previous studies (such as the National Educational Longitudinal Survey) have shown that black children tend to attend schools that have high proportions of blacks (i.e., their own race), while this homogeneity tends not to be as pronounced for children of other races.

AGE95 was used as an additional soft boundary variable for imputing the items NRLSTNUM, NRLSTUNT, NRLIVNUM, and NRLIVUNT. Since these items refer to the length of time since the sampled child had contact (of various types) with the nonresidential parent, the use of AGE95 as a sort variable helped to ensure reasonableness in the imputed values and thus avert edit failures. For example, an 8 year old child should not be imputed to have last lived with a nonresidential parent 12 years ago.

Table 6 shows the item response rates for imputed variables from the Parent PFI/CI questionnaire. Most of these response rates were over 90 percent. Table 7 shows the response rates for variables from the Parent PFI/CI interview public release file that were not imputed. Table 8 presents all variables on the Parent PFI/CI interview file that were imputed manually and the corresponding percent imputed manually.

Table 9 shows the Parent PFI/CI public file items having response rates of less than 90 percent. These items included some addressing parents' reports of school practices to involve parents (i.e. FSHADMEE, FSHADPTA, FSHADCOU), questions about involvement of the non-residential parent (i.e. NRADOPTV, NRLIVNU2), and income questions. The low response rates for income items and for questions about the nonresidential parent are probably due mainly to sensitivity toward these types of questions. Furthermore, in some cases, parents lack knowledge of the involvement of their child's nonresidential parent.

Youth CI Questionnaire

The standard set of hard boundary sort variables for items on the Youth CI file consisted of GRADE, and SPUBLIC. The soft boundary variables were SEX and PARGRADS. For variables involved in skip patterns, a trigger variable was added as a hard boundary variable in order to maintain the skip pattern. *PARGRADS* was created for use in imputation, and is defined as specified above for the Parent PFI/CI data file.

Tables 10 and 11 present the item response rates for the Youth CI interview public release file items that were imputed and those that were not imputed, respectively. Table 12 lists any variable on the Youth CI interview file that was imputed manually and gives the percent imputed manually. This table includes variables from the Screener and Parent PFI/CI interviews that were copied onto the Youth CI interview file for analysis purposes (e.g., SEX, RACE, MOMTYPE, DADTYPE).

Table 13 shows the Youth CI public file items with response rates less than 90 percent. The items SASCHLYR and SANEXTYR pertain to future participation in a service activity. Some respondents had difficulty "committing" to a yes/no answer when asked if they would participate in any kind of community service activity before the end of the school year or next year. Reasons for low response rates for household income and community size items were given in Section 3.

Adult CI Questionnaire

The hard boundary sort variables used for imputing all items on the Adult CI file were *AGECAT* and *AGRADER*. The soft boundary variables were SEX and CAPARENT. For variables involved in skip patterns, a trigger variable was added as a hard boundary variable in order to maintain the skip pattern. *AGECAT* and *AGRADER* were created for use in imputation. *AGECAT* is a categorical variable based on AGE, with categories 18 to 29 years, 30 to 49 years, and 50 years or more. *AGRADER* was created using AGRADE and ADIPL, and classifies persons according to their educational attainment (less than high school graduate, high school diploma but no bachelor's degree, college graduate).

Tables 14 and 15 present the item response rates for Adult CI interview public release file variables that were imputed and those that were not imputed, respectively. Table 16 lists those variables that were

imputed manually. As in the other components, this table includes variables from the Screener that were copied onto the Adult CI file for analysis purposes (e.g., AGE, RACE, XHHBORN, HINCMEXT).

Table 17 shows the Adult CI items with response rates less than 90 percent. These items are all household income and community size questions; reasons for low response to these items were given in Section 3.

Item Response and Imputation

Tables 1 - 17

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Table 1.—Item response rates: Screener person-level items

Variable	Label	Number Eligible	Item Response Rate*
HHAGE(*n*)	AGE AT SCREENER	151,282	99.52%
HHSEX(*n*)	S6-GENDER AT SCREENER	151,282	99.97%
SENROL(*n*)	SX7-ATTENDING/ENROLLED IN SCH	145,364	99.84%
SHOMSC(*n*)	SX8-CHLD HAVING HOME SCH/TUTORING	140,596	99.99%
SGRADE(*n*)	SX9-WHAT GRD/YR OF SCH ATTENDING	45,315	99.56%
VOCYR(*n*)	SX9A-YR OF VOC/TECH SCH ATTNDING	831	90.85%
COLLYR(*n*)	SX9B-YR OF COLLEGE ATTNDING	8,497	95.66%
GRADYR(*n*)	SX9C-YR OF GRAD SCHOOL ATTNDING	2,115	94.61%
SGRDEQ(*n*)	SX10-GRADE EQUIVALENT	742	95.96%
PUBSCH(*n*)	SX11-GO TO PUBLIC OR PRIVATE SCHOOL	45,315	99.48%
FULTIM(*n*)	SX12-ENROLLED FULL/PART TIME	22,411	99.55%
GRADE(*n*)	SX13-HIGHEST GRADE OR YR OF SCHL COMPLTD	108,087	97.82%
GRAD1_(*n*)	ACTUAL GRADE 0-8 COMPLETED	5,647	91.32%
GRAD2_(*n*)	ACTUAL GRADE 9-11 COMPLETED	8,226	93.47%
SDIPL(*n*)	SX14-ADLT HAS HS DIPLOMA/GED	39,265	98.44%
MARITL(*n*)	SX15-MARITAL STATUS	113,885	99.54%
ACTVDU(*n*)	SX16OV-WHO IS ON ACTIVE DUTY	897	100.00%
BORNUS(*n*)	SX19-WHAT COUNTRY BORN	151,282	99.91%
LANG(*n*)	SX20-1ST LANG LEARNED TO SPEAK	145,364	99.87%
RACE(*n*)	SX21-RACE	151,282	99.23%
OTHRAC(*n*)	SX21A-OTHER RACE CATEGORY	13,913	98.50%
HISPAN(*n*)	SX22-HISPANIC	151,282	99.25%

*Items with response rates of 100.00% truly had no nonresponse.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Screener interview, spring 1996.

Table 2.—Percent of imputed cases imputed manually: Screener person-level items

Variable	Label	# Cases Imputed	% Imputed Manually
HHAGE(*n*)	AGE AT SCREENER	729	100.00%
HHSEX(*n*)	S6-GENDER AT SCREENER	42	100.00%
SENROL(*n*)	SX7-ATTENDING/ENROLLED IN SCH	225	100.00%
SHOMSC(*n*)	SX8-CHLD HAVING HOME SCH/TUTORING	10	100.00%
SGRADE(*n*)	SX9-WHAT GRD/YR OF SCH ATTENDING	198	100.00%
VOCYR(*n*)	SX9A-YR OF VOC/TECH SCH ATTNDING	76	100.00%
COLLR(*n*)	SX9B-YR OF COLLEGE ATTNDING	365	100.00%
GRADYR(*n*)	SX9C-YR OF GRAD SCHOOL ATTNDING	114	100.00%
SGRDEQ(*n*)	SX10-GRADE EQUIVALENT	30	100.00%
PUBSCH(*n*)	SX11-GO TO PUBLIC OR PRIVATE SCHOOL	233	100.00%
FULTIM(*n*)	SX12-ENROLLED FULL/PART TIME	101	100.00%
GRADE(*n*)	SX13-HIGHEST GRADE OR YR OF SCHL COMPLTD	2,358	100.00%
GRAD1_(*n*)	ACTUAL GRADE 0-8 COMPLETED	490	100.00%
GRAD2_(*n*)	ACTUAL GRADE 9-11 COMPLETED	537	100.00%
SDIPL(*n*)	SX14-ADLT HAS HS DIPLOMA/GED	612	100.00%
MARITL(*n*)	SX15-MARITAL STATUS	528	100.00%
BORNUS(*n*)	SX19-WHAT COUNTRY BORN	143	100.00%
LANG(*n*)	SX20-1ST LANG LEARNED TO SPEAK	188	100.00%
RACE(*n*)	SX21-RACE	1,161	100.00%
OTHRAC(*n*)	SX21A-OTHER RACE CATEGORY	208	100.00%
HISPAN(*n*)	SX22-HISPANIC	1,133	100.00%

NOTE: The NHES:96 Screener interview formed the basis of the Household & Library data set.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Screener interview, spring 1996.

Table 3.—Item response rates for imputed variables: Screener household-level items and library items

Variable	Label	Number Eligible	Item Response Rate
XHHACTV	SX16-ANY HH MMBR ON ACTIVE DUTY	55,708	99.94%
XHHBORN	SX17-ALL IN HH BORN IN US	55,708	99.90%
XHHLANG	SX18-ALL IN HH LEARN ENGL/1ST LANG	48,310	99.78%
LDISTANC	L1-HOW FAR TO NEAREST PUBL LIBR	55,708	93.41%
LVISIT1	L2A-WENT TO LIBR FOR BOOKS/TAPES PAST MO	55,708	96.42%
LVISIT2	L2B-WENT TO LIBR FOR OTHR PURPOSE/PST MO	55,708	96.48%
LCOMP	L2C-LINKED LIBRARY/COMPUTER PAST MO	55,708	96.46%
LPHONE	L2D-CALLED LIBRARY PAST MO	55,708	96.42%
LMATLS	L2E-LIBR MATLS SENT/DELIVERED PAST MO	55,708	96.60%
LMOBILE	L2F-VISITED BOOKMOBILE PAST MO	55,708	96.58%
LYRUSE	L3-HH MMBR USED LIBRARY PAST YEAR	30,118	96.49%
LSCHOOL	L4A-USED LIBR FOR SCH ASSNMNT PST MO	25,590	94.84%
LKIDSACT	L4B-ATTNDED ACTIVITY/KID 6 TO 12 PST MO	25,590	94.92%
LKIDBOOK	L4C-ATTNDED LIBR ACTIVITY/KID <6 PST MO	25,590	95.03%
LRECR	L4D-USED LIBR FOR ENJOYMT/HOBBIES PST MO	25,590	94.97%
LJOBHELP	L4E-USED LIBR TO HELP FIND JOB PST MO	25,590	94.98%
LWORK	L4F-USED LIBR FOR WORK ASSNMNT PAST MO	25,590	94.94%
LCONSUME	L4G-USED LIBR FOR CONSUMER INFO PST MO	25,590	94.93%
LLRNREAD	L4H-USED LIBR TO LEARN TO READ PST MO	25,590	95.12%
HOWNHOME	SX27-OWN, RENT HOME/OTHR ARRNGMNT	55,708	95.09%
HOTHNUM	SX28-OTHR PHONE NMBRS IN HH	55,708	95.68%
HNUMUSE	SX29-# OF OTHR PHONE NMBRS/HOME USE	6,993	94.07%
HCCOMMUN	SX31-COMMUNITY DESCRIPTION	55,708	92.55%
HCSUB	SX31OV-SIZE OF SUBURB	10,429	77.15%
HCCITY	SX31OV2-SIZE OF CITY	17,579	78.26%
HWIC	SX32A-FAMILY RECD WIC PAST 12 MO	24,684	91.18%
HFOODST	SX32B-FAMILY RECD FOOD STMPS PAST 12 MO	24,684	91.21%
HAFDC	SC32C-FAMILY RECD AFDC PAST 12 MO	24,684	91.07%
HINCMRNG	SX33- TOTAL HH INCOME RANGE	55,708	82.84%
HINCOME	SX33-TOTAL HH INCOME RANGE 2	55,708	76.40%
HINCMEXT	SX33OV-EXACT HH INC NEAREST $1000	5,437	47.62%

NOTE: The NHES:96 Screener interview formed the basis of the Household & Library data set. The variable SUNDR21 (item SCRN_20, whether any household member was age 20 or younger) was not imputed because no cases had missing values.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Screener interview, spring 1996.

Table 4.—Percent of imputed cases imputed manually: Screener household level items

Variable	Label	# Cases Imputed	% Imputed Manually
XHHACTV	SX16-ANY HH MMBR ON ACTIVE DUTY	36	100.00%
XHHBORN	SX17-ALL IN HH BORN IN US	56	100.00%
XHHLANG	SX18-ALL IN HH LEARN ENGL/1ST LANG	106	100.00%
HINCMEXT	SX33OV-EXACT HH INC NEAREST $1000	2,848	0.04%

NOTE: The NHES:96 Screener interview formed the basis of the Household & Library data set.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Screener interview, spring 1996.

Table 5.—Variables with item response rates less than 90 percent: Screener household-level items

Variable	Label	Number Eligible	Item Response Rate
HCSUB	SX31OV-SIZE OF SUBURB	10,429	77.15%
HCCITY	SX31OV2-SIZE OF CITY	17,579	78.26%
HINCMRNG	SX33- TOTAL HH INCOME RANGE	55,708	82.84%
HINCOME	SX33-TOTAL HH INCOME RANGE 2	55,708	76.40%
HINCMEXT	SX33OV-EXACT HH INC NEAREST $1000	5,437	47.62%

NOTE: The NHES:96 Screener interview formed the basis of the Household & Library data set.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Screener interview, spring 1996.

Table 6.—Item response rates for imputed variables: Parent PFI/CI items

Variable	Label	Number Eligible	Item Response Rate
SEX	S6-GENDER AT SCREENER	20,792	99.99%
RACE	SX21-RACE	20,792	99.51%
OTHRAC	SX21A-OTHER RACE CATEGORY	2,386	99.04%
RESRELN	EXTENDED R'S RELATIONSHIP TO CHILD	20,792	99.99%
MOMAGE	MOTHER'S AGE	19,486	99.65%
MOMTYPE	SPECIFIC RELATIONSHIP OF MOTHER TO CHILD	19,486	99.89%
DADAGE	FATHER'S AGE	15,733	99.70%
DADTYPE	SPECIFIC RELATIONSHIP OF FATHER TO CHILD	15,733	99.92%
RELATN1	PA5. RELATIONSHIP TO CHILD	17,144	99.85%
RELATN2	PA5. RELATIONSHIP TO CHILD	8,705	99.87%
RELATN3	PA5. RELATIONSHIP TO CHILD	2,905	99.93%
RELATN4	PA5. RELATIONSHIP TO CHILD	1,407	99.86%
RELATN5	PA5. RELATIONSHIP TO CHILD	572	99.65%
RELATN6	PA5. RELATIONSHIP TO CHILD	216	99.54%
CDOBMM	PA1-MONTH OF BIRTH	20,792	99.72%
RESSPEAK	PA4-LANG SPOKEN MOST AT HOME BY R	20,792	99.97%
HOMESCHL	PB2-CHILD BEING SCHOOLED AT HOME	18,072	99.99%
GRADEEQ	PB5-GRADE EQUIV/HOME SCH/SP ED/UNGRD	309	99.68%
EVRSCHL	PB6-EVER ATTNDED PUBLIC/PRIVATE SCH	244	99.59%
EVRHOME	PB7-EVER HOME SCHOOLED	17,710	99.90%
HOMET	PB8-HOME SCH HISTORY-TRANS K	477	97.90%
HOMEK	PB8-HOME SCH HISTORY-KINDERGARTEN	474	98.52%
HOMEP	PB8-HOME SCH HISTORY-PRE 1ST GRADE	444	98.42%
HOME1	PB8-HOME SCH HISTORY-1ST GRADE	444	98.42%
HOME2	PB8-HOME SCH HISTORY-2ND GRADE	427	98.59%
HOME3	PB8-HOME SCH HISTORY-3RD GRADE	396	98.48%
HOME4	PB8-HOME SCH HISTORY-4TH GRADE	368	98.64%
HOME5	PB8-HOME SCH HISTORY-5TH GRADE	329	98.48%
HOME6	PB8-HOME SCH HISTORY-6TH GRADE	281	98.58%
HOME7	PB8-HOME SCH HISTORY-7TH GRADE	250	98.40%
HOME8	PB8-HOME SCH HISTORY-8TH GRADE	211	98.10%
HOME9	PB8-HOME SCH HISTORY-9TH GRADE	163	98.16%
HOME10	PB8-HOME SCH HISTORY-10TH GRADE	103	97.09%
HOME11	PB8-HOME SCH HISTORY-11TH GRADE	63	96.83%
HOME12	PB8-HOME SCH HISTORY-12TH GRADE	28	96.43%
HSRELIGN	PB9-HOME SCH/RELIGOUS REASONS	547	98.35%
HSBETTER	PB9-HOME SCH/BETTER EDUCATION	547	98.35%
HSOBJECT	PB9-HOME SCH/OBJECT TO WHAT SCH TEACHES	547	98.35%
HSENVIRN	PB9-HOME SCH/POOR ENVIRONMENT AT SCH	547	98.35%
HSCHALNG	PB9-HOME SCH/NO CHALLENGE F/CHLD AT SCH	547	98.35%
HSPRIVAT	PB9-HOME SCH/CANT AFFORD PRIVATE SCH	547	98.35%
HSDESIRE	PB9-HOME SCH/CLDNT GET INTO SCH DESIRED	547	98.35%
HSILL	PB9-HOME SCH/CHLD HAS TEMP ILLNESS	547	98.35%
HSDISABL	PB9-HOME SCH/CHLD HAS SPEC NEED/DISABLTY	547	98.35%

Table 6.Item response rates for imputed variables: Parent PFI/CI items—Continued

Variable	Label	Number Eligible	Item Response Rate
HSCAREER	PB9-HOME SCH/PRNT'S CAREER	547	98.35%
HSOTHER	PB9-HOME SCH/OTHR REASONS	547	98.17%
NHSNOW	PC1-IS CHILD ATTENDING HEAD START	3,012	99.44%
NCBNOW	PC2-CHLD ATTNDS PRESCH PRGRM	2,709	99.93%
NNUMPROG	PC3-CHLD ATTNDS 1 OR MORE THAN 1 PRGRM	1,504	99.87%
NHRS	PC5-HRS/WK CHLD ATTNDS PRGRM	1,807	99.56%
SPUBLIC	PD1-CHLD ATTNDS PUBL/PRIV SCH	19,343	99.86%
SGOVT	PD2-PRGRM RUN BY GOVT AGENCY	1,807	96.02%
SCHOICE	PD3-SCH ASSIGNED OR CHOSEN	15,406	99.95%
SRELGON	PD4-CHLD ATTNDS CHURCH RELATED SCH	2,130	99.34%
SCATHLIC	PD5-CHLD ATTNDS CATHOLIC SCH	1,618	99.51%
SOTHGRAD	PD6-PRGRM INCLUDES K OR OTHR GRADES	1,807	98.84%
SLOW	PD7-LOWEST GRADE AT CHLD'S SCH	19,343	98.78%
SHIGH	PD8-HIGHEST GRADE AT CHLD'S SCH	19,343	98.64%
SNUMSTUD	PD9-# OF STDTS AT CHLD'S SCH	17,536	92.89%
SNUMGRAD	PD9OV-# OF STDTS IN CHLD'S GRADE	556	87.95%
SETHNIC	PD10-PERCENTAGE STDTS OF CHLD'S RACE/ETH	19,343	93.53%
SSAMEFAL	PD11-CHLD IN SAME SCH SINCE FALL	17,536	99.98%
SECHALNG	PE1A-CHLD CHALLENGED AT SCH	16,151	99.21%
SEENJOY	PE1B-CHILD ENJOYS SCHOOL	16,151	99.75%
SETEADIS	PE1C-TEACHERS MAINTAIN DISCIPLINE	16,151	97.98%
SERESPCT	PE1D-STDTS/TCHRS RESPECT EACH OTHR	16,151	97.85%
SEPRIDIS	PE1E-PRINCIPAL MAINTAINS DISCIPLINE	16,151	97.23%
SEWELCOM	PE1F-SCH WELCOMES FAMILY INVOLVEMENT	16,151	99.34%
SEEASY	PE1G-SCH MAKES INVOLVEMENT EASY	16,151	98.92%
FSBLANG	PE2-SCH HELPS RE LANG BARRIERS	1,209	92.06%
SEGRADES	PE3-CHLD'S GRADES ACROSS ALL SUBJECTS	16,151	99.00%
SEGRADEQ	PE4-RATING OF CHLD'S SCH WORK	2,728	98.13%
SEPROBLM	PE5-TCHRS CONTACT HH RE ANY PRBLMS	1,807	99.83%
SEBEHAVR	PE6-TCHRS CONTACT FAM RE BEH PRBLMS	17,536	99.95%
SESCHLWR	PE7-TCHRS CONTACT HH RE SCH WORK PRBLMS	17,536	99.94%
SEREPEAT	PE8-CHLD HAS REPEATED A GRADE	17,536	99.75%
SEREPTK	PE9-CHLD REPEATED KINDERGARTEN	2,045	97.85%
SEREPT1	PE9-CHLD REPEATED 1ST GRADE	2,017	97.87%
SEREPT2	PE9-CHLD REPEATED 2ND GRADE	1,947	97.79%
SEREPT3	PE9-CHLD REPEATED 3RD GRADE	1,852	97.68%
SEREPT4	PE9-CHLD REPEATED 4TH GRADE	1,722	97.68%
SEREPT5	PE9-CHLD REPEATED 5TH GRADE	1,563	97.57%
SEREPT6	PE9-CHLD REPEATED 6TH GRADE	1,438	97.36%
SEREPT7	PE9-CHLD REPEATED 7TH GRADE	1,261	97.15%
SEREPT8	PE9-CHLD REPEATED 8TH GRADE	1,050	97.24%
SEREPT9	PE9-CHLD REPEATED 9TH GRADE	823	96.72%
SEREPT10	PE9-CHLD REPEATED 10TH GRADE	598	96.66%
SEREPT11	PE9-CHLD REPEATED 11TH GRADE	367	97.82%

Table 6.—Item response rates for imputed variables: Parent PFI/CI items—Continued

Variable	Label	Number Eligible	Item Response Rate
SEREPT12	PE9-CHLD REPEATED 12TH GRADE	163	97.55%
SEAFTRHS	PE10A-CHLD WILL ATTND SCH AFTR HS	9,393	94.84%
SECOLLEG	PE10B-CHLD WILL GRAD FRM 4 YR COLL	8,678	88.04%
SESUSEXP	PE11-CHLD EVER SUSPNDED/EXPELLED	9,375	99.85%
SESUSIN	PE12A-CHLD HAD IN-SCH SUSPENSION	1,622	99.45%
SEEXPEL	PE12B-CHLD WAS EXPELLED	1,622	99.38%
SESUSINY	PE12OV-IN-SCH SUSPENSION THIS YR	1,418	98.80%
FSMEETNG	PF1A-FAM ATTNDED GENERAL SCH MTG	9,803	99.94%
FSMEETNP	PF1A2-WHO ATTNDED GEN SCH MTG	5,743	99.27%
FSATCNFN	PF1B_PF2D-HH ADLT ATTNDED MTG W/TCHR	19,343	99.84%
FSCFNP	PF1B2-WHO ATTNDED TEACHER MEETING	10,109	99.27%
FSSPORT	PF1C_PF2E-HH ADLT ATTNDED CLASS EVENT	19,343	99.90%
FSSPORTP	PF1C2_PF2E2-WHO ATTNDED CLASS EVENT	9,818	99.43%
FSVOLNTR	PF1D_PF2F-HH ADLT VOLUNTEERED AT SCH	19,343	99.91%
FSHADMEE	PF1OV-SCH HAD GEN MTG THIS SCH YR	2,153	88.90%
FSHADCN	PF1OV_PF2OV-SCH HAD TCHR MTG	5,533	92.66%
FSBAC	PF2A-HH ADLT ATTNDED BACK-TO-SCH NIGHT	9,540	99.62%
FSBACP	PF2A2-WHO ATTNDED BACK-TO-SCH NIGHT	4,996	99.04%
FSATTPTA	PF2B-HH ADLT ATTNDED PTA/PTO/PTSO MTG	8,649	99.71%
FSPTAP	PF2B2-WHO ATTNDED PTS/PTO/PTSP MTG	3,191	98.84%
FSATTCOU	PF2C-HH ADLT ATTNDED ADVISORY MTG	891	98.88%
FSCOUP	PF2F2-WHO ATTNDED ADVISORY MTG	191	98.95%
FSHADBAC	PF2OV-SCH HAD BACK-TO-SCH NIGHT	2,923	90.08%
FSHADPTA	PF2OV-SCH HAD PTA/PTO/PTSO MTG	4,317	88.90%
FSHADCOU	PF2OV-SCH HAD PARENT ADVISORY MTG	593	88.70%
FSFREQ	PF3-HOW OFTN WENT TO SCH MTGS/EVENTS	19,343	99.02%
FSAGREE	PF4-SCH HAS PRNT INVLVMNT AGRMNT	17,536	92.27%
FSNOTES	PF5A-SCH SENT PERSONAL NOTES	19,343	99.66%
FSNOTEP	PF5A-FREQ OF NOTES FROM SCH	9,342	99.49%
FSMEMOS	PF5B-SCH SENT NEWSLETTERS	19,343	99.56%
FSMEMOP	PF5B-FREQ OF NEWSLETTERS FRM SCH	17,614	99.19%
FSPHONE	PF5C-TCHRS CALLED FAMILY ON PHONE	19,343	99.72%
FSPHONEP	PF5C-FREQ OF PHONE CALLS FROM SCH	8,250	99.50%
FSSPPERF	PF6A-SCH TELLS FAM HOW CHLD DOING IN SCH	19,343	99.20%
FSSPCDEV	PF6B-SCH HELPS FAM UNDERSTAND CHLD DEV	19,343	98.35%
FSSPVOLN	PF6C-SCH TELLS ABT CHANCES TO VOLUNTEER	19,343	98.95%
FSSPHOME	PF6D-SCH ADVISES ABT HOME LEARNING	19,343	97.69%
FSSPSERV	PF6E-SCH GIVES INFO RE COMM SERVICES	19,343	96.77%
FSSPHW	PF6F-SCH TELLS HOW TO HELP W/HW	16,151	98.09%
FSSPCOUR	PF6G-SCH TELLS HOW STDTS ARE GROUPED	16,151	97.65%
FSSPCOLL	PF6H-SCH TELLS HOW TO PLAN FOR COLLEGE	4,919	96.63%
FSSPWORK	PR6I-SCH TELLS HOW TO PLAN FOR WORK	4,919	92.66%
FSPROFIL	PF7-SCH PROVIDED SCH PROFILE	17,536	98.08%
FSDECIS	PF8-SCH PUTS PRNTS ON COMMITTEES	19,343	86.99%

Table 6.—Item response rates for imputed variables: Parent PFI/CI items—Continued

Variable	Label	Number Eligible	Item Response Rate
FEPOLICY	PF9-PRNTS HAVE SAY IN SCH POLICY	19,343	82.60%
FHHOME	PG1-HOW OFTEN STDT DOES HMWRK AT HOME	16,151	99.62%
FHHELP	PG2-HOW OFTEN HH ADLT HELPS W/HMWRK	15,627	99.44%
FHSHARE	PG3-TCHR GAVE HMWRK TO SHARE W/FAM	15,627	98.50%
FHBMATH	PG4A-HH MEMBRS CONFIDENT HELPING W/MATH	8,895	99.66%
FHBENGL	PG4B-HH MEMBRS CONFIDENT HELPING W/ENGL	8,895	99.79%
FHBSCIEN	PG4C-HH MEMBRS CONFIDENT HELPING W/SCI	8,895	98.99%
SFATTGRP	PH1A-ATTNDED SUPPORT GRP FOR PRNTS	3,012	99.70%
SFATTCLS	PH1B-ATTNDED PARENTING CLASS	3,012	99.80%
SFSUPCTR	PH2A-GONE TO FAM SUPPORT CTR	3,012	99.80%
SFVISITS	PH2B-HAD MORE THAN ONE HOME VISIT	3,012	99.90%
SFVISTYP	PH3-JOB TITLE OF HOME VISITOR	199	98.99%
SFVIS12	PH4-HOME VISITS IN THE LAST 12 MOS	199	99.50%
FOREADTO	PI1-TIMES READ TO CHLD PAST WK	8,412	99.80%
FOSTORY	PI2A_PI3A-TOLD CHLD STORY PAST WK	11,399	99.25%
FOSTORYN	PI2AOV-TIMES TOLD CHLD STORY PST WK	3,607	99.03%
FOWORDS	PI2B-TAUGHT LTRS/WRDS/NMBRS PAST WK	4,422	99.75%
FOWORDSN	PI2BOV-TIMES TAUGHT LTRS ETC PST WK	4,155	99.61%
FOMUSIC	PI2C-TAUGHT CHLD SONGS/MUSIC PAST WK	4,422	99.71%
FOMUSICN	PI2COV-TIMES TAUGHT SONGS PAST WK	3,321	99.49%
FOCRAFTS	PI2D_PI3C-WORKED ON ARTS/CRAFTS PAST WK	11,399	99.77%
FOCRAFTN	PI2DOV-TIMES DID ARTS/CRAFTS PAST WK	3,413	99.79%
FOSPORTS	PI2E_PI3E_PI4B-PLAYED GAME PAST WK	20,792	99.85%
FOSPORTN	PI2EOV-TIMES PLAYED GAME PAST WK	4,113	99.88%
FOERAND	PI2F-TOOK CHLD ON ERRANDS PST WK	4,422	99.91%
FOERANDN	PI2FOV-TIMES TOOK ON ERRANDS PST WK	4,190	99.86%
FOCHORE	PI2G_PI3B-INVOLVE CHLD W/CHORES PST WK	11,399	99.92%
FOCHOREN	PI2GOV-TIMES INVOLVE CHLD W/CHORES	4,048	99.85%
FOBUILD	PI3D_PI4A-WORKED ON PRJCT W/CHLD PST WK	16,370	99.62%
FORESPON	PI4C-DISCUSSED MANAGING TIME PAST WK	9,393	99.69%
FOAFTHS	PI4D-TALK ABT COURSES/PLANS PST MO	9,393	99.67%
FOLIBRAY	PI5A-VISITED LIBRARY W/CHLD PAST MO	11,399	99.77%
FOCONCRT	PI5B-WENT TO PLAY/CNCRT/SHOW PST MO	11,399	99.83%
FOMUSEUM	PI5C-VISITED ART GALLERY/MUSEUM PAST MO	11,399	99.85%
FOZOO	PI5D-VISITED ZOO/AQUARIUM PAST MO	11,399	99.97%
FOETHNIC	PI5E-TOLD CHLD FAM HISTORY PAST MO	11,399	99.69%
FOGROUP	PI5F-WENT TO COMMTY EVENT PAST MO	11,399	99.83%
FOSPRTEV	PI5G-WENT TO SPORTS EVENT PAST MO	11,399	99.93%
FOSCHACT	PI6-CHLD IN ANY SCH ACTIVITIES	8,278	99.57%
FOLESSON	PI7-CHLD IN ACTIVITIES OUTSIDE SCH	8,387	99.94%
FORBED	PI8A-RULES RE BEDTIME ON SCH NIGHTS	8,387	99.96%
FORTVTIM	PI8B-RULES ABT TV VIEWING TIME	8,387	99.90%
FORTVPRG	PI8C-RULES ABT TV PRGRMS WATCHED	8,387	99.87%
HDDELAY	PJ1-CHLD DEVELOPMENTALLY DELAYED	3,012	99.83%

Table 6.—Item response rates for imputed variables: Parent PFI/CI items—Continued

Variable	Label	Number Eligible	Item Response Rate
HDLEARN	PJ2A-CHLD HAS SPECIFIC LRNING DISBLTY	11,399	99.57%
HDRETARD	PJ2B-CHLD IS MENTALLY RETARDED	11,399	99.91%
HDSPEECH	PJ2C-CHLD HAS SPEECH IMPAIRMENT	11,399	99.88%
HDDISTRB	PJ2D-CHLD HAS EMOTIONAL DISTURBANCE	11,399	99.75%
HDDEAFIM	PJ2E-CHLD HAS DEAFNESS/HEARING PROB	11,399	99.86%
HDBLNDIM	PJ2F-CHLD HAS BLINDNESS/VISUAL PROB	11,399	99.83%
HDORTHO	PJ2G-CHLD HAS ORTHOPEDIC IMPAIRMENT	11,399	99.93%
HDOTHER	PJ2H-CHLD HAS OTH HLTH PROB FOR 6 MO+	11,399	99.90%
HDSCHL	PJ3A-CONDITION LIMITS SCH WRK ABILITY	9,393	99.62%
HDPHY	PJ3-CONDITION LIMITS SPORTS/GAMES ABIL	9,393	99.85%
HDAFFECT	PJ4-DISABILITIES AFFECT ABILITY TO LRN	2,275	96.84%
HNDOCWHN	PJ5-HOW LONG SINCE CHLD SAW DOCTOR	3,012	99.80%
HNDNTIST	PJ6-CHLD HAS SEEN DENTIST	3,012	99.83%
HNDNTWHN	PJ7-HOW LONG SINCE CHLD SAW DENTIST	1,844	99.67%
CPRDNEWU	PK1-FREQ PRNT/GUARD READS NATL NEWS	9,393	99.97%
CPRDNEWS	PK2-FREQ OTHR PRNT/GUARD READS NATL NEWS	7,315	98.22%
CPWATCHU	PK3-FREQ PRNT/GUARD WATCH/LSTN NATL NEWS	9,393	99.98%
CPWATCH	PK4-FREQ OTHR PRNT WATCH/LSTN NATL NEWS	7,315	98.71%
CPNEWSOT	PK5-OTH ADLT RD/WA/LSTN NATL NEWS/PST WK	773	79.30%
CPNEWSHH	PK6-CHLD WATCH/LSTN NEWS W/FAM PST WK	9,136	98.87%
CPOTHORG	PK7-HH ADLT BELONGS TO ANY ORGNZTN	9,393	99.91%
CPRELFRQ	PK8-FREQ HH ADLT ATTND REL SERV PST YR	9,393	99.77%
CPSERVC	PK9-HH ADLT DOES COMMUNITY SERV	9,393	99.99%
CPMONEY	PK10A-HH ADLT GAVE $ TO POLITICAL CAUSE	9,393	99.49%
CPVOLUNT	PK10B-HH ADLT WORKED FOR POLITICAL CAUSE	9,393	99.81%
CPTELISS	PK10C-HH ADLT CONTACTED OFCL ABT ISSUE	9,393	99.68%
CPPUBMTG	PK10D-HH ADLT ATTNDED PUBLIC MTG	9,393	99.85%
CPBOYCOT	PK10E-PARTICIPATED IN PROTEST/BOYCT	9,393	99.91%
CPVOTE5	PK11-HH ADLT VOTED IN LAST 5 YRS	9,393	99.73%
CPCOMPLI	PK12A-CAN'T UNDERSTAND POLITICS/GOVT	9,393	99.08%
CPFAMSAY	PK12B-FAM HAS NO SAY IN WHAT GOVT DOES	9,393	98.12%
CPAGNST	PK12C-ALLOW FREEDOM TO SPEAK AGNST RELGN	9,393	98.30%
CPBOOK	SOME BOOKS SHLD BE KPT OUT/PUB LIB	9,393	97.81%
CPLETTER	PK13-COULD WRITE LETTER TO GOVT OFCL	9,393	99.46%
CPMTG	PK14-COULD MAKE STATEMENT AT PUBLIC MTG	9,393	99.39%
MOMLANG	PL1-1ST LANG SPOKEN BY MOM	20,026	99.95%
MOMSPEAK	PL2-LANG MOM SPEAKS MOST AT HOME	2,565	99.88%
MOMGRADE	PL3-HIGHEST GRADE MOM COMPLETED	20,026	99.29%
MOMGRAD1	PL3-ACTUAL GRADE 0-8 MOM COMPLETED	846	96.57%
MOMGRAD2	PL3-ACTUAL GRADE 9-11 MOM COMPLETED	1,596	96.62%
MOMDIPL	PL4-MOM HAS HS DIPLOMA/GED	7,285	99.03%
MOMWORK	PL5-MOTHER WORKED FOR PAY LAST WEEK	20,026	99.71%

Table 6.—Item response rates for imputed variables: Parent PFI/CI items—Continued

Variable	Label	Number Eligible	Item Response Rate
MOMLEAVE	PL6-MOM ON LEAVE/VACATION LAST WK	6,103	99.67%
MOMHOURS	PL7-HRS/WK MOM WORKS FOR PAY	14,272	98.95%
MOMMTHS	PL8-MONTHS MOM WORKED IN PAST YR	20,026	98.99%
MOMLOOK	PL9-MOM LOOKING FOR WORK PAST 4 WKS	5,577	99.50%
MOMPUBL	PL10-MOM CHECKED W/PUBLIC EMPLOY AGENCY	923	98.37%
MOMPRIV	PL10-MOM CHECKED W/PRIVATE EMPLOY AGENCY	923	98.37%
MOMEMPL	PL10-MOM CHECKED W/EMPLOYER DIRECTLY	923	98.37%
MOMREL	PL10-MOM CHECKED W/FRIENDS/RELATIVES	923	98.37%
MOMANSAD	PL10-MOM PLACED/ANSWERED ADS	923	98.37%
MOMREAD	PL10-MOM READ WANT ADS	923	98.37%
MOMOTHER	PL10-MOM DID OTHR THINGS TO FIND WORK	923	98.37%
DADLANG	PM1-1ST LANG SPOKEN BY DAD	15,825	99.86%
DADSPEAK	PM2-LANG DAD SPEAKS MOST AT HOME	2,022	99.11%
DADGRADE	PM3-HIGHEST GRADE DAD COMPLETED	15,825	98.75%
DADGRAD1	PM3-ACTUAL GRADE 0-8 DAD COMPLETED	637	94.66%
DADGRAD2	PM3-ACTUAL GRADE 9-11 DAD COMPLETED	1,105	94.39%
DADDIPL	PM4-DAD HAS HS DIPLOMA/GED	5,255	98.82%
DADWORK	PM5-FATHER WORKED FOR PAY LAST WEEK	15,825	99.39%
DADLEAVE	PM6-DAD ON LEAVE/VACATION LAST WK	1,247	98.80%
DADHOURS	PM7-HRS/WK DAD WORKS FOR PAY	14,688	98.09%
DADLOOK	PM8-DAD LOOKING FOR WORK PAST 4 WKS	917	98.47%
DADPUBL	PM9-DAD CHECKED W/PUBLIC EMPLOY AGENCY	384	93.75%
DADPRIV	PM9-DAD CHECKED W/PRIVATE EMPLOY AGENCY	384	93.75%
DADEMPL	PM9-DAD CHECKED W/EMPLOYER DIRECTLY	384	93.75%
DADREL	PM9-DAD CHECKED W/FRIENDS/RELATIVES	384	93.75%
DADANSAD	PM9-DAD PLACED OR ANSWERED ADS	384	93.75%
DADREAD	PM9-DAD READ WANT ADS	384	93.75%
DADOTHER	PM9-DAD DID OTHER THINGS TO FIND WORK	384	93.75%
NRADOPTV	PN1-CHLD HAS ADOPTIVE NONR PRNT-1	101	88.12%
NRLIVAR1	PN2-CHLD LIVING ARRANGEMENTS THIS YR-1	7,711	98.52%
NRLIVEV1	PN3-TIME SINCE NONR PRNT LIVED IN HH-1	6,803	96.62%
NRLIVNU1	PN3OV-NONR PRNT LIVED IN HH-NUM-1	5,098	96.33%
NRLIVUN1	PN3OV2-NONR PRNT LIVED IN HH-UNIT-1	5,098	96.29%
NRCONTA1	PN4-CHLD HAS CONTACT W/NONR PRNT-1	6,736	97.71%
NRPHONE1	PN5A-TIMES CHLD TALKS/NONR PRNT/PHONE-1	4,424	95.55%
NRLETTR1	PN5B-TIMES NONR PRNT SENT CHLD LTR-1	4,424	96.90%
NRSEE1	PN5C-TIMES CHLD SEES NONR PRNT IN PSN-1	4,424	95.68%
NRPHONY1	PN5OV1-NONR PRNT PHONED PAST YR-NUM-1	704	93.18%
NRLETTY1	PN5OV2-NONR PRNT SENT CHLD LTR-NUM-1	3,898	96.31%
NRSEEY1	PN5OV3-CHLD SAW NONR PRNT-NUM OF DAYS-1	1,222	95.99%
NRLIVAR2	PN2-CHLD LIVING ARRANGEMENTS THIS YR-2	733	96.45%
NRLIVEV2	PN3-TIME SINCE NONR PRNT LIVED IN HH-2	624	91.03%
NRLIVNU2	PN3OV-NONR PRNT LIVED IN HH-NUM-2	280	88.21%

Table 6.—Item response rates for imputed variables: Parent PFI/CI items—Continued

Variable	Label	Number Eligible	Item Response Rate
NRLIVUN2	PN3OV2-NONR PRNT LIVED IN HH-UNIT-2	280	88.21%
NRCONTA2	PN4-CHLD HAS CONTACT W/NONR PRNT-2	606	94.06%
NRPHONE2	PN5A-TIMES CHLD TALKS/NONR PRNT/PHONE-2	328	89.33%
NRLETTR2	PN5B-TIMES NONR PRNT SENT CHLD LTR-2	328	90.85%
NRSEE2	PN5C-TIMES CHLD SEES NONR PRNT IN PSN-2	328	89.63%
NRPHONY2	PN5OV1-NONR PRNT PHONED PAST YR-NUM-2	73	87.67%
NRLETTY2	PN5OV2-NONR PRNT SENT CHLD LTR-NUM-2	279	90.32%
NRSEEY2	PN5OV3-CHLD SAW NONR PRNT-NUM OF DAYS-2	117	88.89%
NRLSTCO1	PN6-TIME SINCE NONR PRNT CONTACTD CHLD-1	2,138	95.04%
NRLSTNU1	PN6OV1-TIME SINCE NONR PRNT CNTCT-NUM-1	1,817	94.39%
NRLSTUN1	PN6OV1-TIME SINCE NONR PRNT CNTCT-UNT-1	1,817	94.39%
NRMEET1	PN7A-NONR PRNT ATTNDED GEN SCH MTG-1	2,833	94.63%
NRSPORT1	PN7C_PN8E-NONR PRNT ATTND CLASS EVNT-1	5,526	94.99%
NRVOLNT1	PN7D_PN8F-NONR PRNT VOLUNTEERED @SCH-1	5,526	94.63%
NRBAC1	PN8A-NONR PRNT ATTND BCK-T/SCH NIGHT-1	2,693	94.06%
NRATTPT1	PN8B-NONR PRNT ATTNDED PTA MTG-1	2,477	93.78%
NRATTCO1	PN8C-NONR PRNT ATTNDED ADVISORY MTG-1	217	93.09%
NRSUPRT1	PN9-FAM RECVD CHLD SUPPORT PAYMENTS-1	7,240	96.74%
NRLSTCO2	PN6-TIME SINCE NONR PRNT CONTACTD CHLD-2	258	82.56%
NRLSTNU2	PN6OV1-TIME SINCE NONR PRNT CNTCT-NUM-2	186	82.80%
NRLSTUN2	PN6OV1-TIME SINCE NONR PRNT CNTCT-UNT-2	186	82.80%
NRMEET2	PN7A-NONR PRNT ATTNDED GEN SCH MTG-2	201	89.55%
NRSPORT2	PN7C_PN8E-NONR PRNT ATTND CLASS EVNT-2	403	89.08%
NRVOLNT2	PN7D_PN8F-NONR PRNT VOLUNTEERED @SCH-2	403	89.08%
NRBAC2	PN8A-NONR PRNT ATTND BCK-T/SCH NIGHT-2	202	87.13%
NRATTPT2	PN8B-NONR PRNT ATTNDED PTA MTG-2	193	85.49%
NRATTCO2	PN8C-NONR PRNT ATTNDED ADVISORY MTG-2	9	77.78%
NRSUPRT2	PN9-FAM RECVD CHLD SUPPORT PAYMENTS-2	681	92.80%
XHHBORN	SX17-ALL IN HH BORN IN US	20,792	99.97%
XHHLANG	SX18-ALL IN HH LEARN ENGL/1ST LANG	17,418	99.93%
HOWNHOME	SX27-OWN, RENT HOME/OTHR ARRNGMNT	20,792	99.12%
HWIC	SX32A-FAMILY RECD WIC PAST 12 MO	20,792	99.23%
HFOODST	SX32B-FAMILY RECD FOOD STMPS PAST 12 MO	20,792	99.21%
HAFDC	SX32C-FAMILY RECD AFDC PAST 12 MO	20,792	99.08%
HINCMRNG	SX33- TOTAL HH INCOME RANGE	20,792	93.43%
HINCOME	SX33-TOTAL HH INCOME RANGE 2	20,792	89.39%
HINCMEXT	SX33OV-EXACT HH INC NEAREST $1000	3,425	62.95%
HCSUB	SX31OV-SIZE OF SUBURB	3,691	82.77%
HCCOMMUN	SX31-COMMUNITY DESCRIPTION	20,792	96.33%
HCCITY	SX31OV2-SIZE OF CITY	6,006	80.70%

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent PFI/CI interview, spring 1996.

Table 7.—Item response rates for variables not imputed: Parent PFI/CI interview

Variable	Label	Number Eligible	Item Response Rate
HISPANIC	SX22-HISPANIC	20,792	100.00%
CDOBYY	PA1-YEAR OF BIRTH	20,792	100.00%
CSPEAK	PA3-LANG CHLD SPEAKS MOST AT HOME	20,792	100.00%
RELATN7	PA5. RELATIONSHIP TO CHILD	105	100.00%
RELATN8	PA5. RELATIONSHIP TO CHILD	48	100.00%
RELATN9	PA5. RELATIONSHIP TO CHILD	20	100.00%
RELATN10	PA5. RELATIONSHIP TO CHILD	11	100.00%
RELATN11	PA5. RELATIONSHIP TO CHILD	4	100.00%
RELATN12	PA5. RELATIONSHIP TO CHILD	2	100.00%
RELATN13	PA5. RELATIONSHIP TO CHILD	0	100.00%
RELATN14	PA5. RELATIONSHIP TO CHILD	0	100.00%
RELATN15	PA5. RELATIONSHIP TO CHILD	0	100.00%
ENROLL	PB1-CHILD ENROLLED/ATTENDING SCHOOL	20,792	100.00%
GRADE	PB4-GRADE/YR CHLD IS ATTENDING	19,135	100.00%
HSAGE	PB9-HOME SCH/CHLD'S AGE	547	100.00%
HSBEHAV	PB9-HOME SCH/CHLD BEHAVIOR PROBLEMS	547	100.00%
HSCHAR	PB9-OME SCH/DEVELOP CHARACTER	547	100.00%
HSSCPROB	PB9-PROBLEM WITH SCHOOLS	547	100.00%
HSFAMLY	PB9-FAMILY REASONS	547	100.00%
HSTRAN	PB9-TRANSPORTATION	547	100.00%
SSAME	PD120-CHLD1 GOES TO SAME SCH AS CHLD2	1,351	100.00%
FSVOLNTP	PF1D2_PF2F2-WHO VOLUNTEERED AT SCH	6,177	100.00%
CPVP	PK15A-JOB/POL OFF HELD BY AL GORE	4,754	100.00%
CPLAW	PK15B-WHO DETERMINES LAW CONSTITUTIONAL	4,754	100.00%
CPHOUSE	PK15C-PARTY W/MOST MBRS IN HOUSE	4,754	100.00%
CPVETO	PK15D-MAJORITY NEEDED TO OVERRIDE VETO	4,754	100.00%
CPCONSRV	PK15E-PARTY MORE CONSERV NATL LEVEL	4,754	100.00%
CPSPKR	PK16A-JOB/POL OFF HELD BY NEW GINGRICH	4,639	100.00%
CPJUDGE	PK16B-WHO NOMINATES FED JUDGES	4,639	100.00%
CPSENATE	PK16C-PARTY W/MOST MEMBRS IN SENATE	4.639	100.00%
CPCONST	PK16D-1ST 10 AMENDMENTS TO CONSTIT	4,639	100.00%
CPDFENS	PK16E-PARTY FAVORS LRGR DEFENSE BUDGET	4,639	100.00%
MOMACTY	PL11-MOMS MAIN ACTIVITY LAST WK	4,971	100.00%
DADACTY	PM10-DADS MAIN ACTIVITY LAST WK	803	100.00%
NRATCNF1	PN7B_PN8D-NONR PRNT ATTNDED TCHR MTG-1	5,526	100.00%
NRATCNF2	PN7B_PN8D-NONR PRNT ATTNDED TCHR MTG-2	403	100.00%

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent PFI/CI interview, spring 1996.

Table 8.—Percent of imputed cases imputed manually: Parent PFI/CI interview

Variable	Label	# Cases Imputed	% Imputed Manually
SEX	S6-GENDER AT SCREENER	3	100.00%
RACE	SX21-RACE	102	100.00%
OTHRAC	SX21A-OTHER RACE CATEGORY	23	100.00%
RESRELN	EXTENDED R'S RELATIONSHIP TO CHILD	2	100.00%
MOMAGE	MOTHER'S AGE	68	100.00%
MOMTYPE	SPECIFIC RELATIONSHIP OF MOTHER TO CHILD	21	100.00%
DADAGE	FATHER'S AGE	47	100.00%
DADTYPE	SPECIFIC RELATIONSHIP OF FATHER TO CHILD	13	100.00%
RELATN1	PA5. RELATIONSHIP TO CHILD	25	100.005
RELATN2	PA5. RELATIONSHIP TO CHILD	11	100.00%
RELATN3	PA5. RELATIONSHIP TO CHILD	2	100.00%
RELATN4	PA5. RELATIONSHIP TO CHILD	2	100.00%
RELATN5	PA5. RELATIONSHIP TO CHILD	2	100.00%
RELATN6	PA5. RELATIONSHIP TO CHILD	1	100.00%
CDOBMM	PA1-MONTH OF BIRTH	58	1.72%
RESSPEAK	PA4-LANG SPOKEN MOST AT HOME BY R	6	16.67%
HOMESCHL	PB2-CHILD BEING SCHOOLED AT HOME	2	100.00%
GRADEEQ	PB5-GRADE EQUIV/HOME SCH/SP ED/UNGRD	1	100.00%
EVRSCHL	PB6-EVER ATTNDED PUBLIC/PRIVATE SCH	1	100.00%
HOMET	PB8-HOME SCH HISTORY-TRANS K	10	70.00%
HOMEK	PB8-HOME SCH HISTORY-KINDERGARTEN	7	57.14%
HOMEP	PB8-HOME SCH HISTORY-PRE 1ST GRADE	7	57.14%
HOME1	PB8-HOME SCH HISTORY-1ST GRADE	7	57.14%
HOME2	PB8-HOME SCH HISTORY-2ND GRADE	6	66.67%
HOME3	PB8-HOME SCH HISTORY-3RD GRADE	6	66.67%
HOME4	PB8-HOME SCH HISTORY-4TH GRADE	5	80.00%
HOME5	PB8-HOME SCH HISTORY-5TH GRADE	5	80.00%
HOME6	PB8-HOME SCH HISTORY-6TH GRADE	4	75.00%
HOME7	PB8-HOME SCH HISTORY-7TH GRADE	4	75.00%
HOME8	PB8-HOME SCH HISTORY-8TH GRADE	4	75.00%
HOME9	PB8-HOME SCH HISTORY-9TH GRADE	3	100.00%
HOME10	PB8-HOME SCH HISTORY-10TH GRADE	3	100.00%
HOME11	PB8-HOME SCH HISTORY-11TH GRADE	2	100.00%
HOME12	PB8-HOME SCH HISTORY-12TH GRADE	1	100.00%
HSRELIGN	PB9-HOME SCH/RELIGOUS REASONS	9	55.56%
HSBETTER	PB9-HOME SCH/BETTER EDUCATION	9	55.56%
HSOBJECT	PB9-HOME SCH/OBJECT TO WHAT SCH TEACHES	9	55.56%
HSENVIRN	PB9-HOME SCH/POOR ENVIRONMENT AT SCH	9	55.56%
HSCHALNG	PB9-HOME SCH/NO CHALLENGE F/CHLD AT SCH	9	55.56%
HSPRIVAT	PB9-HOME SCH/CANT AFFORD PRIVATE SCH	9	55.56%
HSDESIRE	PB9-HOME SCH/CLDNT GET INTO SCH DESIRED	9	55.56%
HSILL	PB9-HOME SCH/CHLD HAS TEMP ILLNESS	9	55.56%
HSDISABL	PB9-HOME SCH/CHLD HAS SPEC NEED/DISABLTY	9	55.56%
HSCAREER	PB9-HOME SCH/PRNT'S CAREER	9	55.56%
HSOTHER	PB9-HOME SCH/OTHR REASONS	10	60.00%

Table 8.—Percent of imputed cases imputed manually: Parent PFI/CI interview—Continued

Variable	Label	# Cases Imputed	% Imputed Manually
NHSNOW	PC1-IS CHILD ATTENDING HEAD START	17	23.53%
SPUBLIC	PD1-CHLD ATTNDS PUBL/PRIV SCH	27	77.78%
SGOVT	PD2-PRGRM RUN BY GOVT AGENCY	72	1.39%
SOTHGRAD	PD6-PRGRM INCLUDES K OR OTHR GRADES	21	4.76%
SLOW	PD7-LOWEST GRADE AT CHLD'S SCH	236	0.85%
SHIGH	PD8-HIGHEST GRADE AT CHLD'S SCH	263	1.52%
SEPRIDIS	PE1E-PRINCIPAL MAINTAINS DISCIPLINE	448	0.22%
SEREPTK	PE9-CHLD REPEATED KINDERGARTEN	44	2.27%
SEAFTRHS	PE10A-CHLD WILL ATTND SCH AFTR HS	485	2.89%
SECOLLEG	PE10B-CHLD WILL GRAD FRM 4 YR COLL	1038	2.41%
SESUSEXP	PE11-CHLD EVER SUSPNDED/EXPELLED	14	7.14%
FSATCNFN	PF1B_PF2D-HH ADLT ATTNDED MTG W/TCHR	30	13.33%
FSHADMEE	PF1OV-SCH HAD GEN MTG THIS SCH YR	239	0.42%
FSHADCN	PF1OV_PF2OV-SCH HAD TCHR MTG	406	0.99%
FSBAC	PF2A-HH ADLT ATTNDED BACK-TO-SCH NIGHT	36	2.78%
FSATTPTA	PF2B-HH ADLT ATTNDED PTA/PTO/PTSO MTG	25	4.00%
FSHADBAC	PF2OV-SCH HAD BACK-TO-SCH NIGHT	290	0.34%
FSHADPTA	PF2OV-SCH HAD PTA/PTO/PTSO MTG	479	0.21%
FSFREQ	PF3-HOW OFTN WENT TO SCH MTGS/EVENTS	190	0.53%
FEPOLICY	PF9-PRNTS HAVE SAY IN SCH POLICY	3365	0.03%
SFVIS12	PH4-HOME VISITS IN THE LAST 12 MOS	1	100.00%
FOREADTO	PI1-TIMES READ TO CHLD PAST WK	17	5.88%
FOSTORY	PI2A_PI3A-TOLD CHLD STORY PAST WK	85	4.71%
FOSTORYN	PI2AOV-TIMES TOLD CHLD STORY PST WK	35	2.86%
FOWORDS	PI2B-TAUGHT LTRS/WRDS/NMBRS PAST WK	11	9.09%
FOWORDSN	PI2BOV-TIMES TAUGHT LTRS ETC PST WK	16	6.25%
FOMUSIC	PI2C-TAUGHT CHLD SONGS/MUSIC PAST WK	13	7.69%
FOMUSICN	PI2COV-TIMES TAUGHT SONGS PAST WK	17	5.88%
FOCRAFTS	PI2D_PI3C-WORKED ON ARTS/CRAFTS PAST WK	26	3.85%
FOCRAFTN	PI2DOV-TIMES DID ARTS/CRAFTS PAST WK	7	14.29%
FOSPORTS	PI2E_PI3E_PI4B-PLAYED GAME PAST WK	31	3.23%
FOERAND	PI2F-TOOK CHLD ON ERRANDS PST WK	4	25.00%
FOERANDN	PI2FOV-TIMES TOOK ON ERRANDS PST WK	6	16.67%
FOCHORE	PI2G_PI3B-INVOLVE CHLD W/CHORES PST WK	9	11.11%
FOBUILD	PI3D_PI4A-WORKED ON PRJCT W/CHLD PST WK	63	4.76%
FORESPON	PI4C-DISCUSSED MANAGING TIME PAST WK	29	3.45%
FOAFTHS	PI4D-TALK ABT COURSES/PLANS PST MO	31	3.23%
FOLIBRAY	PI5A-VISITED LIBRARY W/CHLD PAST MO	26	3.85%
FOSPRTEV	PI5G-WENT TO SPORTS EVENT PAST MO	8	12.50%
FORTVTIM	PI8B-RULES ABT TV VIEWING TIME	8	12.50%
FORTVPRG	PI8C-RULES ABT TV PRGRMS WATCHED	11	9.09%
HDLEARN	PJ2A-CHLD HAS SPECIFIC LRNING DISBLTY	49	2.04%
HDRETARD	PJ2B-CHLD IS MENTALLY RETARDED	10	10.00%
HDSPEECH	PJ2C-CHLD HAS SPEECH IMPAIRMENT	14	7.14%
HDDISTRB	PJ2D-CHLD HAS EMOTIONAL DISTURBANCE	29	6.90%

Table 8.—Percent of imputed cases imputed manually: Parent PFI/CI interview—Continued

Variable	Label	# Cases Imputed	% Imputed Manually
HDDEAFIM	PJ2E-CHLD HAS DEAFNESS/HEARING PROB	16	6.25%
HDBLNDIM	PJ2F-CHLD HAS BLINDNESS/VISUAL PROB	19	5.26%
HDORTHO	PJ2G-CHLD HAS ORTHOPEDIC IMPAIRMENT	8	12.50%
HDOTHER	PJ2H-CHLD HAS OTH HLTH PROB FOR 6 MO+	11	9.09%
HDSCHL	PJ3A-CONDITION LIMITS SCH WRK ABILITY	36	5.56%
CPRDNEWS	PK2-FREQ OTHR PRNT/GUARD READS NATL NEWS	130	1.54%
CPNEWSOT	PK5-OTH ADLT RD/WA/LSTN NATL NEWS/PST WK	160	0.63%
CPNEWSHH	PK6-CHLD WATCH/LSTN NEWS W/FAM PST WK	103	0.97%
CPRELFRQ	PK8-FREQ HH ADLT ATTND REL SERV PST YR	22	9.09%
CPMONEY	PK10A-HH ADLT GAVE $ TO POLITICAL CAUSE	48	2.08%
CPVOLUNT	PK10B-HH ADLT WORKED FOR POLITICAL CAUSE	18	5.56%
MOMLANG	PL1-1ST LANG SPOKEN BY MOM	10	100.00%
MOMGRADE	PL3-HIGHEST GRADE MOM COMPLETED	142	97.89%
MOMGRAD1	PL3-ACTUAL GRADE 0-8 MOM COMPLETED	29	41.38%
MOMGRAD2	PL3-ACTUAL GRADE 9-11 MOM COMPLETED	54	64.81%
MOMDIPL	PL4-MOM HAS HS DIPLOMA/GED	71	95.77%
MOMMTHS	PL8-MONTHS MOM WORKED IN PAST YR	203	0.49%
MOMLOOK	PL9-MOM LOOKING FOR WORK PAST 4 WKS	28	3.57%
DADLANG	PM1-1ST LANG SPOKEN BY DAD	22	100.00%
DADGRADE	PM3-HIGHEST GRADE DAD COMPLETED	198	98.99%
DADGRAD1	PM3-ACTUAL GRADE 0-8 DAD COMPLETED	34	32.35%
DADGRAD2	PM3-ACTUAL GRADE 9-11 DAD COMPLETED	62	20.97%
DADDIPL	PM4-DAD HAS HS DIPLOMA/GED	62	98.39%
DADWORK	PM5-FATHER WORKED FOR PAY LAST WEEK	97	2.06%
DADLEAVE	PM6-DAD ON LEAVE/VACATION LAST WK	15	13.33%
DADHOURS	PM7-HRS/WK DAD WORKS FOR PAY	280	0.36%
DADLOOK	PM8-DAD LOOKING FOR WORK PAST 4 WKS	14	14.29%
DADPUBL	PM9-DAD CHECKED W/PUBLIC EMPLOY AGENCY	24	4.17%
DADPRIV	PM9-DAD CHECKED W/PRIVATE EMPLOY AGENCY	24	4.17%
DADEMPL	PM9-DAD CHECKED W/EMPLOYER DIRECTLY	24	4.17%
DADREL	PM9-DAD CHECKED W/FRIENDS/RELATIVES	24	4.17%
DADANSAD	PM9-DAD PLACED OR ANSWERED ADS	24	4.17%
DADREAD	PM9-DAD READ WANT ADS	24	4.17%
DADOTHER	PM9-DAD DID OTHER THINGS TO FIND WORK	24	4.17%
NRLIVAR1	PN2-CHLD LIVING ARRANGEMENTS THIS YR-1	114	0.88%
NRLIVEV1	PN3-TIME SINCE NONR PRNT LIVED IN HH-1	230	0.87%
NRLIVNU1	PN3OV-NONR PRNT LIVED IN HH-NUM-1	187	1.60%
NRLIVUN1	PN3OV2-NONR PRNT LIVED IN HH-UNIT-1	189	2.65%
NRCONTA1	PN4-CHLD HAS CONTACT W/NONR PRNT-1	154	1.95%
NRPHONE1	PN5A-TIMES CHLD TALKS/NONR PRNT/PHONE-1	197	1.52%
NRLETTR1	PN5B-TIMES NONR PRNT SENT CHLD LTR-1	137	1.46%
NRSEE1	PN5C-TIMES CHLD SEES NONR PRNT IN PSN-1	191	1.05%
NRLETTY1	PN5OV2-NONR PRNT SENT CHLD LTR-NUM-1	144	0.69%
NRSEEY1	PN5OV3-CHLD SAW NONR PRNT-NUM OF DAYS-1	49	4.08%

Table 8.—Percent of imputed cases imputed manually: Parent PFI/CI interview—Continued

Variable	Label	# Cases Imputed	% Imputed Manually
NRLIVEV2	PN3-TIME SINCE NONR PRNT LIVED IN HH-2	56	3.57%
NRCONTA2	PN4-CHLD HAS CONTACT W/NONR PRNT-2	36	5.56%
NRPHONE2	PN5A-TIMES CHLD TALKS/NONR PRNT/PHONE-2	33	5.71%
NRLETTR2	PN5B-TIMES NONR PRNT SENT CHLD LTR-2	30	6.67%
NRSEE2	PN5C-TIMES CHLD SEES NONR PRNT IN PSN-2	34	5.88%
NRPHONY2	PN5OV1-NONR PRNT PHONED PAST YR-NUM-2	9	22.22%
NRLETTY2	PN5OV2-NONR PRNT SENT CHLD LTR-NUM-2	27	7.41%
NRSEEY2	PN5OV3-CHLD SAW NONR PRNT-NUM OF DAYS-2	13	15.38%
NRLSTCO1	PN6-TIME SINCE NONR PRNT CONTACTD CHLD-1	106	0.94%
NRLSTNU1	PN6OV1-TIME SINCE NONR PRNT CNTCT-NUM-1	102	1.96%
NRLSTUN1	PN6OV1-TIME SINCE NONR PRNT CNTCT-UNT-1	102	1.96%
NRSUPRT1	PN9-FAM RECVD CHLD SUPPORT PAYMENTS-1	236	0.85%
NRLSTCO2	PN6-TIME SINCE NONR PRNT CONTACTD CHLD-2	45	4.44%
NRLSTNU2	PN6OV1-TIME SINCE NONR PRNT CNTCT-NUM-2	32	6.25%
NRLSTUN2	PN6OV1-TIME SINCE NONR PRNT CNTCT-UNT-2	32	6.25%
XHHBORN	SX17-ALL IN HH BORN IN US	6	100.00%
XHHLANG	SX18-ALL IN HH LEARN ENGL/1ST LANG	13	100.00%

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent PFI/CI interview, spring 1996.

Table 9.—Variables with item response rates less than 90%: Parent PFI/CI interview

Variable	Label	Number Eligible	Item Response Rate
SNUMGRAD	PD9OV-# OF STDTS IN CHLD'S GRADE	556	87.95%
SECOLLEG	PE10B-CHLD WILL GRAD FRM 4 YR COLL	8,678	88.04%
FSHADMEE	PF1OV-SCH HAD GEN MTG THIS SCH YR	2,153	88.90%
FSHADPTA	PF2OV-SCH HAD PTA/PTO/PTSO MTG	4,317	88.90%
FSHADCOU	PF2OV-SCH HAD PARENT ADVISORY MTG	593	88.70%
FSDECIS	PF8-SCH PUTS PRNTS ON COMMITTEES	19,343	86.99%
FEPOLICY	PF9-PRNTS HAVE SAY IN SCH POLICY	19,343	82.60%
CPNEWSOT	PK5-OTH ADLT RD/WA/LSTN NATL NEWS/PST WK	773	79.30%
NRADOPTV	PN1-CHLD HAS ADOPTIVE NONR PRNT-1	101	88.12%
NRLIVNU2	PN3OV-NONR PRNT LIVED IN HH-NUM-2	280	88.21%
NRLIVUN2	PN3OV2-NONR PRNT LIVED IN HH-UNIT-2	280	88.21%
NRPHONE2	PN5A-TIMES CHLD TALKS/NONR PRNT/PHONE-2	328	89.33%
NRSEE2	PN5C-TIMES CHLD SEES NONR PRNT IN PSN-2	328	89.63%
NRPHONY2	PN5OV1-NONR PRNT PHONED PAST YR-NUM-2	73	87.67%
NRSEEY2	PN5OV3-CHLD SAW NONR PRNT-NUM OF DAYS-2	117	88.89%
NRLSTCO2	PN6-TIME SINCE NONR PRNT CONTACTD CHLD-2	258	82.56%
NRLSTNU2	PN6OV1-TIME SINCE NONR PRNT CNTCT-NUM-2	186	82.80%
NRLSTUN2	PN6OV1-TIME SINCE NONR PRNT CNTCT-UNT-2	186	82.80%
NRMEET2	PN7A-NONR PRNT ATTNDED GEN SCH MTG-2	201	89.55%
NRSPORT2	PN7C_PN8E-NONR PRNT ATTND CLASS EVNT-2	403	89.08%
NRVOLNT2	PN7D_PN8F-NONR PRNT VOLUNTEERED @SCH-2	403	89.08%
NRBAC2	PN8A-NONR PRNT ATTND BCK-T/SCH NIGHT-2	202	87.13%
NRATTPT2	PN8B-NONR PRNT ATTNDED PTA MTG-2	193	85.49%
HINCOME	SX33-TOTAL HH INCOME RANGE 2	20,792	89.39%
HINCMEXT	SX33OV-EXACT HH INC NEAREST $1000	3,425	62.95%
HCSUB	SX31OV-SIZE OF SUBURB	3,691	82.77%
HCCITY	SX31OV2-SIZE OF CITY	6,006	80.70%

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Parent PFI/CI interview, spring 1996.

Table 10.—Item response rates for imputed variables: Youth CI interview

Variable	Label	Number Eligible	Item Response Rate
SEX	S6-GENDER AT SCREENER	8,043	99.98%
RACE	SX21-RACE	8,043	99.52%
HISPANIC	SX22-HISPANIC	8,043	99.45%
OTHRAC	SX21A-OTHER RACE CATEGORY	835	98.80%
MOMTYPE	SPECIFIC RELATIONSHIP OF MOTHER TO CHILD	7,508	99.95%
DADTYPE	SPECIFIC RELATIONSHIP OF FATHER TO CHILD	6,163	99.95%
SPUBLIC	PD1-CHLD ATTNDS PUBL/PRIV SCH	7,940	99.95%
SCHOICE	PD3-SCH ASSIGNED OR CHOSEN	7,130	99.99%
SRELGON	PD4-CHLD ATTNDS CHURCH RELATED SCH	810	99.26%
SCATHLIC	PD5-CHLD ATTNDS CATHOLIC SCH	611	99.51%
SLOW	PD7-LOWEST GRADE AT CHLD'S SCH	7,940	98.56%
SHIGH	PD8-HIGHEST GRADE AT CHLD'S SCH	7,940	99.43%
SNUMSTUD	PD9-# OF STDTS AT CHLD'S SCH	7,940	93.60%
SNUMGRAD	PD9OV-# OF STDTS IN CHLD'S GRADE	146	94.52%
SETHNIC	PD10-PERCENTAGE STDTS OF CHLD'S RACE/ETH	7,940	93.40%
FESCHOOL	YA1-FREQ CHLD TALKS W/FAM RE SCH	7,940	99.89%
FEFUTURE	YA2-DISCUSSES FUTURE PLANS W/FAM	8,043	99.58%
FESCHINV	YA3-LEVEL OF INVOLVEMENT IN SCH	7,940	98.94%
FENOTICE	YA4-SCH GIVES WRTN NOTICE TO TAKE HOME	7,940	99.38%
FENOTGIV	YA5-FREQ NOTICES ARE TAKEN HOME	7,115	99.18%
FERSCHNT	YA6B-RULES ABT TIME HOME/SCH NIGHTS	4,275	99.77%
FERHMWRK	YA6C-RULES ABT DOING HOMEWORK	8,043	99.81%
FERTVTIM	YA6D-RULES ABT TV VIEWING TIME	8,043	99.71%
FEFAMDEC	YA7A-FAM DISCUSSES DECISIONS W/CHLD	8,043	99.86%
FEYRSIDE	YA7B-FAM LISTENS CHLDS SIDE/ARGUMNT	8,043	99.70%
FERULES	YA7C-FAM LETS CHLD HAVE SAY IN RULES	8,043	99.59%
FECHALNG	YA8A-CHLD IS CHALLENGED AT SCH	7,940	99.42%
FEENJOY	YA8B-CHLD ENJOYS SCHOOL	7,940	99.80%
FETEADIS	YA8C-TCHRS MAINTAIN DISCIPLINE	7,940	99.82%
FERESPCT	YA8D-STDTS/TCHRS RESPECT EACH OTHR	7,940	99.66%
FEPRIDIS	YA8E-PRINCIPAL MAINTAINS DISCIPLINE	7,940	99.26%
FEWATCH	YA8F-FAM MONITORS SCH PROGRESS	7,940	99.86%
FELISTEN	YA8G-STDT OPINIONS COUNT AT SCH	7,940	99.42%
PRSTUGOV	YB1-SCH HAS STUDENT GOVT	7,940	91.84%
PRREPGOV	YB2-SERVED/WORKED IN STUDENT GOVT	6,494	91.98%
PRSCHACT	YB3-PARTICIPATED IN SCH ACTIVITIES	7,940	99.87%
PRGRPACT	YB4-PARTICIPATED OUT-OF-SCH ACTIVITIES	8,043	99.93%
PRWORK	YB5-WORKS FOR PAY	8,043	99.91%
PRWRKHRS	YB6-HRS/WK WORKS	3,866	93.46%
PRLOOK	YB7-LOOKED FOR JOB THIS SCH YR	4,177	99.90%
SACTY	YC1-DOES COMMTY SERVICE ACTY	8,043	99.69%

Table 10.—Item response rates for imputed variables: Youth CI interview—Continued

Variable	Label	Number Eligible	Item Response Rate
SANOW0	YC3-PARTICIPATING IN ACTIVITY #1 NOW	3,996	99.65%
SAREG0	YC4-SERVICE ACTIVITY #1 SCHEDULE	3,996	99.60%
SAWKS0	YC5-FREQ OF SERVICE ACTIVITY #1	1,717	96.85%
SAWKSNU0	YC5OV-NUM WKS FOR SERV ACTY #1	1,162	96.21%
SAHRS0	YC6-HRS/WK FOR SERV ACTY #1	1,717	97.32%
SAHRSNU0	YC6OV-NUM HRS/WK FOR SERV ACTY #1	1,691	96.69%
SANOW1	YC3-PARTICIPATING IN ACTIVITY #2 NOW	1,557	99.74%
SAREG1	YC4-SERVICE ACTIVITY #2 SCHEDULE	1,557	99.17%
SAWKS1	YC5-FREQ OF SERVICE ACTIVITY #2	623	97.75%
SAWKSNU1	YC5OV-NUM WKS FOR SERV ACTY #2	434	97.70%
SAHRS1	YC6-HRS/WK FOR SERV ACTY #2	623	98.56%
SAHRSNU1	YC6OV-NUM HRS/WK FOR SERV ACTY #2	606	98.02%
SAREG2	YC4-SERVICE ACTIVITY #3 SCHEDULE	458	99.13%
SAWKS2	YC5-FREQ OF SERVICE ACTIVITY #3	217	95.85%
SAWKSNU2	YC5OV-NUM WKS FOR SERV ACTY #3	140	97.14%
SAHRS2	YC6-HRS/WK FOR SERV ACTY #3	217	96.77%
SAHRSNU2	YC6OV-NUM HRS/WK FOR SERV ACTY #3	211	95.73%
SAARRYOU	YC7-SCH ARR THIS STDT SERV ACTY	3,956	99.12%
SAARRSER	YC8-SCH ARRANGES SERV ACTIVITIES	7,940	93.61%
SAREQSER	YC9-SCH REQUIRES SERV ACTY	7,940	92.49%
SAREQYOU	YC10-SCH REQD THIS STDT SERV ACTY	748	96.39%
SATALK	YC11-TALK IN CLASS/GRP ABT SERV ACTY	3,956	99.32%
SAJOURNL	YC12-REQUIRED TO WRITE ABT SERV ACTY	3,956	99.54%
SAGRADE	YC13-ACTIVITY FOR A GRADE IN CLASS	3,956	99.04%
SASCHLYR	YC14-WILL DO SERV ACTY LATER THIS SCH YR	4,047	85.37%
SANEXTYR	YC15-WILL DO SERV ACTY NEXT YR	8,043	87.87%
PSPEACE	YC16A-HEARD OF THE PEACE CORPS	8,043	99.85%
PSVISTA	YC16B-HEARD OF VISTA	8,043	99.70%
PSAMCORP	YC16C-HEARD OF AMERICORPS	8,043	99.70%
SASERVC	YC17-FAM PARTICIPATES COMMTY SERV	8,043	98.45%
CYRDNEWU	YD1-READ NATL NEWS IN NEWSPAPER/MAG	8,043	99.98%
CYWATCHU	YD2-WATCHED NATL NEWS ON TV	8,043	99.99%
CYNEWSHH	YD3-WATCH/LSTN NATL NEWS W/FAM PST WK	6,701	99.66%
CYISTALK	YD4-FREQ TALK ABT NATL NEWS W/FAM	8,043	99.88%
CYCOMPLI	YD5A-CAN'T UNDERSTAND POLITICS/GOVT	4,275	99.06%
CYFAMSAY	YD5B-FAM HAS NO SAY IN WHAT GOVT DOES	4,275	96.19%
CYAGNST	YD5C-ALLOW FREEDOM TO SPEAK AGNST RELGN	4,275	99.06%
CYBOOK	YD5D-SOME BKS SHLD BE KPT OUT/PUB LIB	4,275	99.23%
CYLETTER	YD6-COULD WRITE LETTER TO GOVT OFCL	4,275	99.49%
CYMTG	YD7-COULD MAKE STATEMENT AT PUBLIC MTG	4,275	99.32%
CYVP*	YD8A-JOB/POL OFC HELD BY AL GORE	2,110	99.95%
CYLAW*	YD8B-WHO DETERMINES LAW CONSTITUTIONAL	2,110	99.95%
CYHOUSE*	YD8C-PARTY W/MOST MEMBRS IN HOUSE	2.110	99.95%
CYVETO*	YD8D-MAJORITY NEEDED TO OVERRIDE VETO	2,110	99.95%

Table 10.—Item response rates for imputed variables: Youth CI interview—Continued

Variable	Label	Number Eligible	Item Response Rate
CYCONSRV*	YD8E-PARTY MORE CONSERV/NATL LEVEL	2,110	99.95%
CYSPKR*	YD9A-JOB/POL OFC HELD BY NEWT GINGRICH	2,165	99.95%
CYJUDGE*	YD9B-WHO NOMINATES FED COURT JUDGES	2,165	99.95%
CYSENATE*	YD9C-PART W/MOST MEMBRS IN SENATE	2,165	99.95%
CYCONST*	YD9D-1ST 10 AMENDMENTS TO CONSTIT	2,165	99.95%
CYDEFENS*	YD9E-PARTY FAVORS LRGR DEFENSE BUDGET	2,165	99.95%
CYCRSE	YD10-COURSE REQS ATTN TO GOVT ISSUES	8,043	99.58%
CYCRSLST	YD11-LST YR COURSE REQD ATTN TO GOVT ISS	8,043	99.07%
CYINTRST	YD12-CLASS INCREASED INT/GOVT ISSUES	5,594	99.20%
CYSCHLET	YD13A-IN CLASS WROTE LTR TO UNKNOWN PERS	8,043	99.89%
CYSCHSPE	YD13B-IN CLASS GAVE SPEECH/ORAL REPRT	8,043	99.93%
CYSCHDEB	YD13C-IN CLASS TOOK PART IN DEBATE	8,043	99.70%
HOWNHOME	SX27-OWN, RENT HOME/OTHR ARRNGMNT	8,043	99.88%
HWIC	SX32A-FAMILY RECD WIC PAST 12 MO	8,043	99.83%
HFOODST	SX32B-FAMILY RECD FOOD STMPS PAST 12 MO	8,043	99.85%
HAFDC	SX32-FAMILY RECD AFDC PAST 12 MO	8,043	99.71%
HINCMRNG	SX33- TOTAL HH INCOME RANGE	8,043	94.89%
HINCOME	SX33-TOTAL HH INCOME RANGE 2	8,043	91.35%
HINCMEXT	SX33OV-EXACT HH INC NEAREST $1000	1,131	65.78%
HCSUB	SX31OV-SIZE OF SUBURB	1,414	85.36%
HCCOMMUN	SX31-COMMUNITY DESCRIPTION	8,043	97.66%

* Only 'not ascertained' was imputed, one case per item.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Youth CI interview, spring 1996.

Table 11.—Item response rates for variables not imputed: Youth CI interview

Variable	Label	Number Eligible	Item Response Rate
RESPAGE	EXTENDED RESPONDENT'S AGE	8,043	100.00%
RESPSEX	EXTENDED RESPONDENT'S SEX	8,043	100.00%
RESRELN	EXTENDED R'S RELATIONSHIP TO CHILD	8,043	100.00%
MOMAGE	MOTHER'S AGE	7,508	100.00%
DADAGE	FATHER'S AGE	6,163	100.00%
CDOBMM	PA1-MONTH OF BIRTH	8,043	100.00%
CDOBYY	PA1-YEAR OF BIRTH	8,043	100.00%
CSPEAK	PA3-LANG CHLD SPEAKS MOST AT HOME	8,043	100.00%
ENROLL	PB1-CHILD ENROLLED/ATTENDING SCHOOL	8,043	100.00%
HOMESCHL	PB2-CHILD BEING SCHOOLED AT HOME	8,043	100.00%
GRADE	PB4-GRADE/YR CHLD IS ATTENDING	7,940	100.00%
GRADEEQ	PB5-GRADE EQUIV/HOME SCH/SP ED/UNGRD	112	100.00%
FERBED	YA6A-RULES ABT BEDTIME/SCH NIGHTS	3,768	100.00%
FERTVPRG	YA6E-RULES ABT TV PRGMS WATCHED	8,043	100.00%
SANOW2	YC3-PARTICIPATING IN ACTIVITY #3 NOW	458	100.00%

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Youth CI interview, spring 1996.

Table 12.—Percent of imputed cases imputed manually: Youth CI interview

Variable	Label	# Cases Imputed	% Imputed Manually
SEX	S6-GENDER AT SCREENER	2	100.00%
RACE	SX21-RACE	39	100.00%
HISPANIC	SX22-HISPANIC	44	100.00%
OTHRAC	SX21A-OTHER RACE CATEGORY	10	100.00%
MOMTYPE	SPECIFIC RELATIONSHIP OF MOTHER TO CHILD	4	100.00%
DADTYPE	SPECIFIC RELATIONSHIP OF FATHER TO CHILD	3	100.00%
SPUBLIC	PD1-CHLD ATTNDS PUBL/PRIV SCH	4	100.00%
SLOW	PD7-LOWEST GRADE AT CHLD'S SCH	114	0.88%
SHIGH	PD8-HIGHEST GRADE AT CHLD'S SCH	45	6.67%
FEFUTURE	YA2-DISCUSSES FUTURE PLANS W/FAM	34	2.94%
SANOW0	YC3-PARTICIPATING IN ACTIVITY #1 NOW	14	78.57%
SAREG0	YC4-SERVICE ACTIVITY #1 SCHEDULE	16	68.75%
SAWKS0	YC5-FREQ OF SERVICE ACTIVITY #1	54	9.26%
SAWKSNU0	YC5OV-NUM WKS FOR SERV ACTY #1	44	6.82%
SAHRS0	YC6-HRS/WK FOR SERV ACTY #1	46	10.87%
SAHRSNU0	YC6OV-NUM HRS/WK FOR SERV ACTY #1	56	8.93%
SANEXTYR	YC15-WILL DO SERV ACTY NEXT YR	976	0.10%

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Youth CI interview, spring 1996.

Table 13.—Variables with item response rates less than 90 percent: Youth CI interview

Variable	Label	Number Eligible	Item Response Rate
SASCHLYR	YC14-WILL DO SERV ACTY LATER THIS SCH YR	4,047	85.37%
SANEXTYR	YC15-WILL DO SERV ACTY NEXT YR	8,043	87.87%
HINCMEXT	SX33OV-EXACT HH INC NEAREST $1000	1,131	65.78%
HCSUB	SX31OV-SIZE OF SUBURB	1,414	85.36%
HCCITY	SX31OV2-SIZE OF CITY	2,169	83.08%

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Youth CI interview, spring 1996.

Table 14.—Item response rates for imputed variables: Adult CI interview

Variable	Label	Number Eligible	Item Response Rate
AGE	S6-AGE	2,250	99.64%
RACE	SX21-RACE	2,250	99.47%
HISPANIC	SX22-HISPANIC	2,250	99.51%
OTHRAC	SX21A-OTHER RACE CATEGORY	152	98.03%
SENROLL	SX7-ATTENDING/ENROLLED IN SCH	2,250	99.96%
MARITL	SX15-MARITAL STATUS	2,250	99.42%
CARDPAPR	R1-FREQ READ NEWSPAPER	2,250	99.91%
CARDMAGS	R2-# DIFFERENT MAGS LOOK AT OR READ REG	2,250	99.29%
CARDNEWU	R4-FREQ READ NATL NEWS/NEWSPR/MAG	2,250	99.60%
CAWATCHU	R5-FREQ WATCH/LSTN NATL NEWS	2,250	99.91%
CAOTHORG	R6-BELONGS TO ANY ORGNZTN	2,250	99.87%
CARELFRQ	R7-FREQ ATTNDED REL SERV PST YR	2,250	99.47%
CASERVC	R8-DOES COMMUNITY SERV	2,250	99.91%
CAMONEY	R9A-GAVE $ TO POLITICAL CAUSE	2,250	99.47%
CAVOLUNT	R9B-WORKED FOR POLITICAL CAUSE	2,250	99.82%
CATELISS	R9B-CONTACTED OFCL ABT ISSUE	2,250	99.64%
CAPUBMTG	R9D-ATTNDED PUBLIC MTG	2,250	99.78%
CABOYCOT	R9E-PARTICIPATED IN PROTEST/BOYCT	2,250	99.91%
CAVOTE5	R10-VOTED IN LAST 5 YEARS	2,250	99.69%
CACOMPLI	R11A-CAN'T UNDERSTAND POLITICS/GOVT	2,250	98.49%
CAFAMSAY	R11B-FAM HAS NO SAY IN WHAT GOVT DOES	2,250	97.07%
CAAGNST	R11C-ALLOW FREEDOM TO SPEAK AGNST RELGN	2,250	97.51%
CABOOK	R11D-SOME BOOKS SHLD BE KPT OUT/PUB LIB	2,250	96.44%
CALETTER	R12-COULD WRITE LETTER TO GOVT OFCL	2,250	99.16%
CAMTG	R13-COULD MAKE STATEMENT AT PUBLIC MTG	2,250	99.16%
CAPARENT	R16-IS PARENT OF CHLD 18 OR YOUNGER	917	99.56%
ALANG	R17-1ST LANG SPOKEN	2,250	99.91%
ASPEAK	R18-LANG SPOKEN MOST AT HOME	239	99.58%
AGRADE	R19-HIGHEST GRADE COMPLETED	2,250	99.82%
AGRAD1	R19-ACTUAL GRADE 0-8 COMPLETED	112	99.11%
ADIPL	R20-HAS HS DIPLOMA/GED	822	99.88%
AWORK	R21-WORKED FOR PAY LAST WEEK	2,250	99.96%
AHOURS	R23-HRS/WK USUALLY WORK FOR PAY	1,525	98.89%
AMTHS	R24-MONTHS WORKED IN PAST YR	2,250	99.20%
AACTY	R27-MAIN ACTIVITY LAST WEEK	636	99.69%
ADISCIP	R28A-STRICTR DISCIPLINE WLD IMPROVE EDUC	2,250	97.78%
ASTANDS	R28B-PROMOTION STANDARDS WLD IMPROVE ED	2,250	98.09%
AEVAL	R28C-TCHR EVALUATIONS WLD IMPROVE EDUC	2,250	96.89%

Table 14.—Item response rates for imputed variables: Adult CI interview—Continued

Variable	Label	Number Eligible	Item Response Rate
ASCHLYR	R28D-LONGER SCH YR WLD IMPROVE EDUC	2,250	96.84%
XHHBORN	SX17-ALL IN HH BORN IN US	2,250	99.96%
XHHLANG	SX18-ALL IN HH LEARN ENGL/1ST LANG	1,960	99.80%
HOWNHOME	SX27-OWN, RENT HOME/OTHR ARRNGMNT	2,250	99.47%
HINCMRNG	SX33- TOTAL HH INCOME RANGE	2,250	88.44%
HINCOME	SX33-TOTAL HH INCOME RANGE 2	2,250	82.04%
HINCMEXT	SX33OV-EXACT HH INC NEAREST $1000	210	54.29%
HCCOMMUN	SX31-COMMUNITY DESCRIPTION	2,250	97.47%
HCSUB	SX31OV-SIZE OF SUBURB	429	84.85%
HCCITY	SX31OV2-SIZE OF CITY	705	86.52%

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Adult CI interview, spring 1996.

Table 15.—Item response rates for variables not imputed: Adult CI interview

Variable	Label	Number Eligible	Item Response Rate
SEX	S6-SEX	2,250	100.00%
SGRADE	SX9-GRADE/YEAR OF SCH ATTENDING	215	100.00%
CARDBOOK	R3-READ ANY BOOKS PAST 6 MO	2,250	100.00%
CAVP	RD14A-JOB/POL OFFICE HELD BY AL GORE	1,114	100.00%
CALAW	RD14B-WHO DETERMINES LAW CONSTITUTIONAL	1,114	100.00%
CAHOUSE	RD14C-PARTY W/MOST MMBRS IN HOUSE	1,114	100.00%
CAVETO	RD14D-MAJORITY NEEDED TO OVERRIDE VETO	1,114	100.00%
CACONSRV	RD14E-PARTY MORE CONSERV/NATL LEVEL	1,114	100.00%
CASPKR	RD15A-JOB/POL OFF HELD BY NEWT GINGRICH	1,136	100.00%
CAJUDGE	RD15B-WHO NOMINATES FED COURT JUDGES	1,136	100.00%
CASENATE	RD15C-PARTY W/MOST MEMBRS IN SENATE	1,136	100.00%
CACONST	RD15D-1ST 10 AMENDMENTS TO CONSTIT	1,136	100.00%
CADEFENS	RD15E-PARTY FAVORS LRGR DEFENSE BUDGET	1,136	100.00%
AGRAD2	R19-ACTUAL GRADE 9-11 COMPLETED	143	100.00%
ALEAVE	R22-ON LEAVE OR VACATION LAST WEEK	587	100.00%
ALOOK	R25-LOOKING FOR WORK PAST 4 WKS	528	100.00%
APUBL	R26-CHECKED W/PUBLIC EMPLOY AGENCY	98	100.00%
APRIV	R26-CHECKED W/PRIVATE EMPLOY AGENCY	98	100.00%
AEMPL	R26-CHECKED W/EMPLOYER DIRECTLY	98	100.00%
AREL	R26-CHECKED W/FRIENDS/RELATIVES	98	100.00%
AANSAD	R26-PLACED/ANSWERED ADS	98	100.00%
AREAD	R26-READ WANT ADS	98	100.00%
AOTHER	R26-DID OTHR THINGS TO FIND WORK	98	100.00%

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), Adult CI interview, spring 1996.

Table 16.—Percent of imputed cases imputed manually: Adult CI items

Variable	Label	# Cases Imputed	% Imputed Manually
AGE	S6-AGE	8	100.00%
RACE	SX21-RACE	12	100.00%
HISPANIC	SX22-HISPANIC	11	100.00%
OTHRAC	SX21A-OTHER RACE CATEGORY	3	100.00%
SENROLL	SX7-ATTENDING/ENROLLED IN SCH	1	100.00%
MARITL	SX15-MARITAL STATUS	13	100.00%
CAPARENT	R16-IS PARENT OF CHLD 18 OR YOUNGER	4	75.00%
ALANG	R17-1ST LANG SPOKEN	2	100.00%
AGRADE	R19-HIGHEST GRADE COMPLETED	4	100.00%
AGRAD1	R19-ACTUAL GRADE 0-8 COMPLETED	1	100.00%
ADIPL	R20-HAS HS DIPLOMA/GED	1	100.00%
XHHBORN	SX17-ALL IN HH BORN IN US	1	100.00%
XHHLANG	SX18-ALL IN HH LEARN ENGL/1ST LANG	4	100.00%
HINCMEXT	SX33OV-EXACT HH INC NEAREST $1000	96	2.08%

Table 17.—Variables with item response rates less than 90 percent: Adult CI items

Variable	Label	Number Eligible	Item Response Rate
HINCMRNG	SX33- TOTAL HH INCOME RANGE	2,250	88.44%
HINCOME	SX33-TOTAL HH INCOME RANGE 2	2,250	82.04%
HINCMEXT	SX33OV-EXACT HH INC NEAREST $1000	210	54.29%
HCSUB	SX31OV-SIZE OF SUBURB	429	84.85%
HCCITY	SX31OV2-SIZE OF CITY	705	86.52%

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1996.

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Weighting and Standard Error Calculation Procedures for the NHES:96

Introduction

This document describes the procedures used to produce the weights for use in estimating characteristics from the 1996 National Household Education Survey (NHES:96) sample and for estimating the sampling errors of those estimates.

The NHES:96 utilized a random digit dial (RDD) sample of telephone numbers in the 50 States and the District of Columbia, with interviews conducted from January through April 1996. The objective of the study is to make inferences about the entire civilian, noninstitutionalized population. For this reason, the estimates derived from the sampled telephone households are adjusted to totals that include both telephone and nontelephone households.

Telephone numbers were randomly sampled in the 50 States and the District of Columbia. Telephone numbers in some states were sampled at a higher rate to obtain a minimum of 500 completed household screening interviews in each state. The 161,446 sampled telephone numbers were randomly divided into two groups: one of the groups (referred to as the parent/youth sample) was administered the Parent PFI/CI and Youth CI interviews if there were eligible household members; the other group (referred to as the adult sample) was administered the Adult CI interview if there were eligible household members.

The survey consisted of a screening interview and extended interviews with sampled members of the screened households. The data collected in the screening interview may be used to produce state-level estimates of the characteristics of the households. During the screening interview, the respondent provided information on household members that was used to determine whether anyone in the household was eligible for an extended interview. The three extended interview components of the NHES:96 are the Parent PFI/CI, the Youth CI, and the Adult CI components. The Parent PFI/CI component included children from 3 years of age through twelfth grade, provided the child was under 21 years of age. The Parent PFI/CI interview was conducted with the parent or guardian who knew the most about the sampled child's care and education. The Youth CI component included children enrolled in grades 6 through 12; Youth CI interviews were conducted with the sampled youth directly with no exceptions. For the Adult CI component, interviews were conducted with adults 18 years and older who were not currently enrolled in secondary school and were not on active duty in the U.S. Armed Forces.

In the sections that follow, the weighting and variance estimation methodologies for the NHES:96 are described in detail. The computation of household-level weights for use in analyzing the screener data is described in the next section. Subsequent sections describe the computation of the person-level weights for use in analyzing the extended interview data. The last section describes the procedures for computing sampling errors. More detailed information on the sample design for NHES:96 is contained in *Design, Data Collection, Interview Administration Time, and Data Editing in the 1996 National Household Education Survey* (Vaden-Kiernan et al. 1997), and more information about the unit response rates for the NHES:96 is given in Unit Response Rates section of this report.

Household-Level Weights for the Screener Interview

The NHES:96 was the first NHES study in which the expanded screener interview was fully implemented. The enhanced data collection associated with the screener interview introduced new statistical issues for the NHES, such as producing household-level estimates at both the state and national levels along with person-level estimates at the national level consistent with those that have been produced for each of the previous administrations of the NHES. With the new screener, data on households and the members of the household are available from all sampled households, not just those households in which persons were sampled for extended interviews. The screener also contains items on household public library use.

The household-level weight is the product of four factors:

(1) the weight associated with the oversampling of telephone numbers in states with fewer residential telephone numbers (A_j);

(2) the weight associated with the oversampling of telephone numbers in high minority exchanges (B_j);

(3) the weight associated with the number of telephone numbers in a household (C_j); and

(4) a raking adjustment to adjust for screener nonresponse and to compensate for the fact that only telephone households were eligible for the NHES:96 survey (D_j).

Both the parent/youth sample and the adult sample were included in the computations of these weighting factors. Special steps would have been taken if there were indications that the response rates in 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:96 is a list-assisted method described by Brick et al. (1995). This basic method was also used in the NHES:95. The method used for NHES:96 was a single stage sample where 161,446 telephone numbers were sampled from strata defined by state. In 33 states, the telephone numbers were sampled at a rate proportional to the number of telephone numbers in the state. In the 18 states where the sample was expected to produce fewer than 500 completed screener interviews, telephone numbers were sampled at higher rates in an effort to obtain at least 500 completed screener interviews.

    Households were assigned a weight adjustment to account for the oversampling by state. The adjustment factor is the oversampling rate given in table 1. Households in a state where oversampling did not occur were given an adjustment factor of 1. The actual probability of selection was the inverse of the base sampling rate times this factor. Since the base rate was a constant and adjustments to control totals were used, the constant was suppressed for this step of weighting. Let

$$A_j = \frac{1}{x_i}$$ if household j is in state i, and oversampling occurred in state i, where x_i

is the factor for oversampling given in table 1, and

$$A_j = 1 \qquad \text{if household } j \text{ is in state } i \text{ and no oversampling occurred in state } i.$$

2. Within each state, telephone numbers were divided into two strata, high and low minority, by telephone exchange. The high minority stratum was defined to include those exchanges with 20 percent or more Black or 20 percent of more Hispanics in the population. In some states, there were no, or very few, high minority exchanges; oversampling was not done in these states (see table 1; states in which oversampling of high minority exchanges was not done have a sampling factor of 1.000 for high minority exchanges). Telephone numbers in high-minority exchanges were sampled at a rate approximately twice that of the low-minority exchanges. Therefore, households in the high minority stratum were given a weighting factor B_j. This factor is presented in table 1. Households in the low minority stratum were assigned an adjustment factor of 1. Some oversampling rates are not exactly 2.000 and some adjustment factors are not exactly 0.500. This is because some state/minority strata had odd numbers of telephone numbers; thus the rate at which telephone numbers were sampled in high minority exchanges was slightly more than twice the sampling rate in low minority exchanges in some states.

3. 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[6]. 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, the practice of looking up the other phone numbers in these households is impractical and the percent of such numbers in the zero-listed stratum is small. Let

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

$$C_j = 1 \qquad \text{if household } j \text{ has one telephone number.}$$

If a household was sampled twice through two different telephone numbers, only one of the interviews was kept in the sample. The interview that was not kept was assigned a result code indicating that it is a "duplicate." The interview that was kept has C_j set equal to unity, to reflect that it was sampled twice.

The household-level base weight for household j, UHW_j, is the product of the three factors described above. It can be written as:

$$UHW_j = A_j * B_j * C_j.$$

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[6] 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 comment on this adjustment in "Weighting Adjustments for Random Digit Dialed Surveys", in Telephone Survey Methodology, pp. 145-146.

4.   The final step in household weighting was to adjust UHW*j* to known state control totals in order to account for household-level nonresponse and undercoverage due to sampling only telephone households. Raking procedures within each state and the District of Columbia were used to accomplish this task.

Up to four variables were used for raking the household weights. These variables are: (1) race of the oldest adult in the household, (2) home tenure (rented or owned/other), (3) whether children under 18 years of age are present in the household, and (4) urbanicity (urban/rural). These variables were selected because they are available at the state level from existing sources and are correlated with coverage loss from telephone sampling and response propensity.

In some states all four variables were used for raking; in other states only three of the variables were used. Race was not used in some states because of the very low numbers of expected completed interviews with nonwhite persons in the state (see below). The categories of race also varied across states based on the distribution of the population in the given states (also described below). Decisions about which of the variables to use in each state were made based on the requirement for the expected number of completed Screeners to be at least 50 in each raking cell for each state. Using this criterion, the following decisions were made:

■   For ID, IA, KS, KY, ME, MN, MT, NE, NH, ND, OR, RI, SD, UT, VT, WV, and WY, the variables child present, home tenure, and urbanicity were used. Race was not used in these states because it was expected that fewer than 50 completed Screeners would be obtained in the "nonwhite" race category.

■   For AL, AK, AZ, AR, CO, CT, DE, GA, HI, IN, LA, MD, MA, MI, MS, MO, NM, NC, OH, OK, PA, SC, TN, VA, WA, and WI, the variables child present, home tenure, urbanicity, and race (categorized as white/non-white) were used. In these states, the number of sample cases in the black category or the all other race category was expected to be less than 50.

■   For CA, FL, IL, NJ, NY, and TX, the variables child present, home tenure, urbanicity, and race (categorized as white/black/all other) were used.

■   For DC and NV, the variables child present, home tenure, and race (categorized as white/non-white) were used. Urbanicity was not used, since DC is entirely urban. In Nevada, urbanicity was not used because of small cell sizes for the "rural" category.

The control totals of the number of households for each state were obtained from the March 1995 CPS. The number of households for each cell of the dimensions needed for raking was computed by applying the percentage distributions from the 1990 Census of Population within each state to the March 1995 CPS totals. This allocation procedure was necessary because the number of households from the 1990 Census of Population is too out-of-date, and March CPS has too small a sample to provide reliable state level estimates for the raking control totals. The control totals are listed in table 2.

Before raking, the 130 households in the NHES:96 sample that were comprised entirely of active duty military personnel were excluded. All of the variables from the NHES:96

interview used in raking were fully imputed. Raked weights are formed by iteratively modifying the household-level weights until they correspond to the state-level control totals. A table of estimates is formed using the household-level weights. The household-level weights are multiplied by the constant that will force the sum of the tabled values to equal the state-level control totals along the first dimension. The revised table is then multiplied by the constant required so that the second dimension totals are obtained, and the same process is repeated for the third dimension (and for the fourth dimension, for those states where a fourth dimension was used). When the last dimension is done, one iteration of raking is complete. Further iterations were employed so that the estimates converged to the control totals across all the dimensions. The iterations were continued until all the tabled totals were within one of the control totals across all dimensions for each state.

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

$$HHW_{j(c)} = UHW_j * D_c,$$

where D_c is the raking adjustment factor described above for adjustment cell c, where household j has the attributes corresponding to the levels of the dimensions of the raking cell c for the given state.

Person-Level Weights for the Parent PFI/CI Interview

In sampling younger children for the Parent PFI/CI interview, every sampled household with a child from age three through 5th grade was included with certainty. Similarly, in sampling older children for the Parent PFI/CI interview, every sampled household with a child in grades 6 through 12 was included with certainty. This section describes the development of the person-level weights for the Parent PFI/CI interview.

All of the age-eligible children in the household who were enrolled in 12th grade or below and under age 21 were potential subjects for the Parent PFI/CI interview, but not all were sampled. One, and only one, younger child was sampled from every household with a younger child. One, and only one, older child was sampled from every household with an older child. The parent or guardian most knowledgeable about the care and education of the sampled child was asked to complete the Parent PFI/CI interview for that child. The Parent interview weight for sampled child k in household j, PW_k[7], is the product of the household weight and four weight adjustment factors:

(1)   the weight associated with sampling telephone numbers where the Parent PFI/CI and Youth CI interviews were administered (A_{jk});

(2)   the weight associated with sampling a child within each 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).

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[7] The household factor j is suppressed here for ease of presentation.

The procedures for computing the person-level weight adjustments from the Parent PFI/CI interview are given below.

1. As described earlier, telephone numbers were randomly divided into two groups: one of the groups was used to sample persons for the Parent PFI/CI and Youth CI interviews, and the other group was used to sample persons for the Adult CI interview. A total of 95 percent (19 out of 20) of all the sampled telephone numbers was randomly sampled and assigned to the parent/youth sample. The remaining telephone numbers were assigned to the adult sample. The first weight adjustment reflects this differential sampling rate. The adjustment can be written as:

$$A_{jk} = \frac{20}{19} \qquad \text{for all } k \text{ children in household } j.$$

2. The second weight adjustment accounts for the probability of sampling child k from among the children in household j. This adjustment is the inverse of the probability of selecting the child. The sampling adjustment for younger children (*i.e.*, those age 3 years through 5th grade) depends on the number of younger children in household j (Y_j). One younger child was selected from among the Y_j younger children in the household. Therefore, the adjustment for a sampled younger child can be written as:

$$B_{jk} = Y_j \qquad \text{for a sampled younger child } k \text{ in household } j.$$

The adjustment for sampling older children (*i.e.*, those enrolled in grades 6 through 12, and no more than 20 years old) follows the same procedure, where O_j is the number of older children in household j. The adjustment for a sampled older child is:

$$B_{jk} = O_j \qquad \text{for a sampled older child } k \text{ in household } j.$$

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

$$\text{UPW}_k = \text{HHW}_j * A_{jk} * B_{jk},$$

where the subscript for the household has been suppressed in UPW_k for ease of presentation.

The unadjusted Parent interview weights, UPW, 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 before adjusting for nonresponse. In all, 183 cases with unadjusted Parent weights in excess of 10,000 (the mean unadjusted Parent interview weight was 2,513) were trimmed to be equal to 10,000. The trimmed weight is denoted UPW*.

3. The next step was to adjust for parents/guardians who did not respond to the Parent PFI/CI interview for the sampled children. Each sampled child was classified as either a respondent (R) or a nonrespondent (NR), depending on whether or not the parent/guardian responded to the Parent PFI/CI interview for the sampled child. The trimmed, unadjusted Parent weights (UPW*) of the nonresponding children were distributed to the trimmed unadjusted Parent

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weights of the responding children within a nonresponse adjustment cell. The adjustment cells were formed according to the grade of the sampled child (table 3). Each grade was its own adjustment cell. Children enrolled in school but classified as "ungraded" or "no grade equivalent" were kept as a separate cell for nonresponse adjustment. Although there were only 5 respondents in this cell, it was feared that the bias incurred by combining these cases with other cells would be greater than the increase in variance due to the smallness of this cell. 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 weight, NPW_k, can be written as:

$$NPW_{k(c)} = UPW_k^* * C_{k(c)}.$$

4. The final step in adjustment was to adjust the nonresponse adjusted Parent interview weight, NPW, to national control totals using a raking procedure. This additional raking adjustment, following the household-level raking adjustment, is required because the Parent PFI/CI interview involves new eligibility criteria and a new level of sampling. Three dimensions were used for raking the Parent interview weights. The first dimension is a cross of race/ethnicity of the child and household income categories; the second dimension is a cross of Census region and urbanicity; and the third dimension is a cross of home tenure and the grade of the child. These variables were selected because they are available from existing sources and are correlated with coverage loss from telephone sampling and response propensity. The same variables were used for raking 9- and 10-year olds in the NHES:95 ECCP component, except that age was used in the NHES:95 ECCP, while grade was used here. Prior to raking, the variables used in the raking procedure were fully imputed. For the purpose of raking, children enrolled in school but classified as "ungraded" or "no grade equivalent" were assigned the modal grade for their year of age.

The control totals for each dimension are listed in table 4. The control totals of the number of children were obtained from the March 1995 CPS and allocated according to the October 1994 CPS distributions. In other words, the number in a raking cell is the proportion in that cell from the October 1994 CPS multiplied by the estimated total from the March 1995 CPS. For example, the proportion of children who are in 5th grade and live in rented homes was estimated from the October 1994 CPS and then multiplied by the total number of children from the March 1995 CPS to give the control total for this cell. This allocation was necessary because the raking dimensions use items that are only available in the October CPS while the number of children obtained from the March 1995 CPS is more accurate since it is closer in time to the 1996 survey date. The 1990 Census of Population distribution was used to estimate the distribution of persons across cells defined by urbanicity and Census region, in order to be consistent with the procedure used for the household weight. The raking iterations were continued until the estimated totals were within 1 of all the control totals.

The final Parent interview weight for sampled child k is:

$$PW_{k(c)} = NPW_k * D_{k(c)} ,$$

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

Person-Level Weights for the Youth CI Interview

As described above, one, and only one, older child was selected in every parent/youth sample household that has a child age 20 or less enrolled in grades 6 through 12. A Youth CI interview was conducted with each sampled older child if and only if the Parent PFI/CI interview for that child was completed. This prevented the interviewing of a minor without the knowledge of his/her parent, and provided parents with experience with the survey content prior to giving permission. Youths 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 CI interview. This section describes the development of the person-level weights for the Youth CI interview.

The Youth interview weight for sampled older child k, YW_k, uses the nonresponse adjusted Parent interview weight for the older child, NPW_k, as the base weight. Two weight adjustments were made to NPW_k to produce YW_k. These are:

(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 older children (B_k).

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

1.   The first weight adjustment to NPW adjusts for sampled older children for whom the Parent PFI/CI interview was completed but the Youth CI interview was not completed. Each sampled older child with a completed Parent PFI/CI interview was classified as either a respondent (R) or a nonrespondent (NR) to the Youth CI interview. The weights of the nonresponding older children are distributed to the weights of the responding older children within a nonresponse adjustment cell. The adjustment cells were formed based on the grade of the sampled older child (table 5). Each grade was its own adjustment cell. The nonresponse adjustment factor, A_k for each adjustment cell is:

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

Thus, for each sampled older child k with a completed Parent PFI/CI interview, the nonresponse adjusted Youth interview weight, NYW_k, can be written as:

$$NYW_{k(c)} = NPW_k^* * A_{k(c)}.$$

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

2. The final step is to adjust NYW to national control totals using a raking procedure. Three dimensions were used for raking the Youth interview weights. The first dimension is a cross of race/ethnicity of the older child and household income categories; the second dimension is a cross of Census region and urbanicity; and the third dimension is a cross of home tenure and the grade of the older child. These variables were selected because they are available from existing sources and are correlated with coverage loss from telephone sampling and response propensity. The same variables were used for raking 9- and 10-year olds in the NHES:95 ECCP component, except that age was used in the NHES:95 ECCP, while grade was used here. Prior to raking, the variables used in the raking procedure were fully imputed. The dimensions and control totals are listed in table 6.

The control totals of the number of children were obtained by allocating the estimate of the total number of older children from the March 1995 CPS to the October 1994 CPS distributions (table 6). In other words, the control total for a raking cell is the proportion in that cell from the October 1994 CPS multiplied by the estimate of the total from the March 1995 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 1995 CPS is more accurate since it is closer in time to the 1996 survey date. The 1990 Census of Population distribution was used to estimate the distribution of persons across cells defined by urbanicity and Census region.[*] Note that although the same variables were used in raking the Parent and Youth 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 CI interview for each sampled older child k is:

$$YW_{k(c)} = NYW_k * B_{k(c)} ,$$

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

Person-Level Weights for the Adult CI Interview

In sampling adults for the Adult CI interview, every sampled household in the set of telephone numbers sampled for this interview that had an eligible adult was included with certainty. An eligible adult is defined to be a person 18 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 CI interview.

All of the eligible adults in the household were potential subjects for the Adult CI interview, but not all were sampled. One and only one adult was sampled from every household with an eligible adult. The weight for the Adult CI interview for adult k in household j, AW_k, is the product of four weight factors:

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[*] The 1990 Census figures were used to be consistent with the procedure followed for treating the household weight.

(1)   the weight associated with sampling households where the Adult CI interviews were administered (A_{jk});

(2)   the weight associated with sampling an adult within each household (B_{jk});

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

(4)   the adjustment associated with raking the Adult interview weights to Census Bureau estimates of the number of adults (D_k).

The procedures for computing the person-level weights from the Adult CI interview are given below.

1.   As described earlier, the sample of telephone numbers selected in the NHES:96 sample was randomly divided into two groups: one of the groups was administered the Parent PFI/CI and Youth CI interviews, and the other group was administered the Adult CI interview. A total of 95 percent of all the sampled telephone numbers was randomly sampled and assigned to the parent/youth portion of the sample. The remaining telephone numbers were assigned to the adult sample. The first weighting factor associated with the Adult interview weight adjusts for this differential sampling rate. The adjustment can be written as:

$$A_{jk} = 20 \qquad \text{for adult } k \text{ in household } j.$$

2.   The second weighting factor accounts for the probability of sampling an adult k from among the eligible adults in household j. This factor depends upon the number of eligible adults in household j (RA_j); it is the inverse of the probability of selecting the adult. One adult was selected from among the RA_j eligible adults in the household. Therefore, the adjustment for a sampled adult can be written as:

$$B_{jk} = RA_j \qquad \text{for a sampled adult } k \text{ in household } j.$$

For each sampled adult k, the unadjusted person-level weight, UAW_k, can be written as the product of the household weight and these two factors. That is,

$$UAW_k = HHW_j * A_{jk} * B_{jk},$$

where the subscript for the household has been suppressed in UAW_k for ease of presentation.

3.   The next step was to adjust for adults who did not respond to the Adult CI interview. Each sampled adult was classified as either a respondent (R) or a nonrespondent (NR). The weights of the nonresponding adults were distributed to the weights of the responding adults within a nonresponse adjustment cell. As shown in table 7, three variables were used to form the adjustment cells: Gender of the adult, marital status of the adult (currently married/not currently married), and the highest educational attainment of the adult (no high school diploma and no additional education/completed high school and may have attended or completed vocational school or attended some college including attaining an associate's

degree/attained a bachelor's degree or higher degree). The nonresponse adjustment factor, C_k, for each adjustment cell was computed as follows:

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

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

$$NAW_{k(c)} = UAW_k * C_{k(c)}.$$

The variability in the Adult interview weights was examined to determine whether trimming would be desired. The variability was not sufficient to justify trimming.

4.   The final step was to adjust NAW to national control totals using a raking procedure. Four dimensions were used for raking the Adult interview weights (table 8). The first dimension is a cross of race/ethnicity of the adult and household income categories; the second dimension is a cross of age categories and gender; the third dimension is a cross of Census region and urbanicity; and the fourth dimension is home tenure. These variables were selected because they are available from existing sources and are correlated with coverage loss from telephone sampling and response propensity. The same variables were used for raking in the NHES:95 AE component. Prior to raking, the variables used in the raking procedure were fully imputed. The dimensions and control totals are listed in table 8.

The control totals were obtained from the March 1995 CPS and were allocated according to the October 1994 CPS distributions. In other words, the number in a cell is the proportion in that cell from the October 1994 CPS multiplied by the estimate of the total from the March 1995 CPS. This allocation was necessary because the raking dimensions use items that are only available in the October CPS while the number of adults obtained from the March 1995 CPS is more accurate since it is closer in time to the 1996 survey date. The 1990 Census of Population distribution was used to estimate the distribution of persons across cells defined by urbanicity and Census region.* The raking iterations were continued until the estimated totals were within 1 of all the control totals.

The final person-level weight for the Adult CI interview for sampled adult k is:

$$AW_{k(c)} = NAW_k * D_{k(c)},$$

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 three dimensions of raking cell c.

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* The 1990 Census figures were used to be consistent with the procedures followed for creating the household weight.

Methods for Computing Sampling Errors

The sampling errors for the NHES:96 can be computed with a jackknife replication method using either WesVarPC or PROC WESVAR. The JK1 method of jackknife replication is appropriate for the NHES:96 because the list-assisted approach used for sampling is a single-stage, unclustered approach. For the JK1 method, the NHES:96 sample of telephone numbers was divided into 19 variance estimation strata corresponding to the 18 states where oversampling occurred and the combination of the 33 states where oversampling did not occur. Eighty replicates were formed based on the stratum, minority status, and sampling order of the telephone numbers. In each replicate, a replicate weight was developed using the same weighting procedures used to develop the full sample weight. Using these replicate weights, estimates can be produced for each replicate and can be compared to the full sample estimate to estimate the sampling error of a statistic of interest.

In NHES:95, fifty replicates were formed. In NHES:96, eighty replicates have been formed. There are three reasons for the increase in the number of replicates from NHES:95 to NHES:96. First, a more precise variance estimate can be obtained with more replicates. Second, the cost of producing variances using more replicates has been reduced due to enhancements to WesVarPC, making the use of more replicates cost-effective. Lastly, since the NHES:96 is designed to produce state-level estimates in addition to national-level estimates, an increased number of replicates was desirable to improve the precision of the variance estimates for these domains.

Replicate weights were created for all four of the final weights: the household-level weights for data from the Screener interview; the person-level weights for data from the Parent PFI/CI interview; the person-level weights for data from the Youth CI interview; and the person-level weights for data from the Adult CI interview. The procedures for forming the replicate weights for each of these four weights are given below.

1. The 161,446 sampled telephone numbers were divided into the 19 strata used for sampling. Each of the first 18 strata is defined by one of the 18 states where oversampling occurred. The 19th stratum is defined by the combination of the 33 states where oversampling did not occur. The telephone numbers in each state or state group (stratum) were first sorted by minority status with the high minority telephone numbers being listed first followed by the low minority telephone numbers. Then, within minority status, the telephone numbers were listed in the same order as that used in the sample selection.

2. Eighty replicates were formed using all 161,446 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, ... the 80th, 160th, 240th, ... telephone numbers in the list to replicate 80. Thus, there were 2,018 telephone numbers assigned to 74 of the replicates and 2,019 numbers assigned to the remaining 6 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. This number ranges from 54,954 to 55,061 among the 80 replicates.

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 document for each of the four 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 described in sections 2 through 5 were applied 80 times, including the raking steps.

5. Two differences in the methods used for the full sample and for the replicate weights were: (a) 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; and (b) the trimming of the weights was not applied at the replicate level. Only minor trimming of a small number (183) of Parent PFI/CI interview cases was needed for the full sample weights, indicating that there was not a significant number of cases with very large weights. The trimming of replicate weights involves the review of each replicate as a specific subsample, and is a labor-intensive process. Because the need for trimming at the full sample weight level was very minor (183 cases among the Parent interview weights), the likely benefit of this extensive review process was outweighed by the level of effort involved.

To produce standard errors using a Taylor series program, 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 to which the unit (telephone number of sampled person) is assigned. The PSU is an arbitrary numeric identification number for the unit within the stratum. At the household level, the variance strata are defined by the 30 combinations of state and minority status that were used in sampling.[8] At the person level, minority status alone is used for creating variance strata because there are too few units in the strata as defined at the household level.

On the Household and Library Public File, the stratum and PSU variables are called HSTRATUM and HPSU, respectively. HSTRATUM is defined by the combinations of state and minority status that were used in sampling, which are given in table 1. Within each HSTRATUM, telephone numbers were sorted in the order in which they were selected and were numbered sequentially from 1 through the number of sampled telephone numbers to create HPSU. For example, the stratum defined as "Alaska, high minority" has 15 responding households. Thus, for this stratum, the values of HPSU are 1, 2, ..., 15. For each stratum, the numbering of PSUs begins at 1; thus, HPSU itself is not unique. However, combinations of HSTRATUM and HPSU are unique. The full sample weight for the Household and Library file is FHWT.

The stratum and PSU variables on the Parent PFI/CI File are PSTRATUM and PPSU; the full sample weight is FPWT. On the Youth CI File, the variables are YSTRATUM and YPSU; the full sample weight is FYWT. On the Adult CI File the stratum and PSU variables are ASTRATUM and APSU; the full sample weight is FAWT. The two variance strata for the person-level files are "high minority" and "low minority". On each person-level file, within each minority stratum, the respondents were numbered sequentially from 1 through the number of respondents to create the PSU variable. Thus,

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[8] Nineteen state categories and two minority status values were used in sampling. However, eight of the states (ME, MT, ND, NH, RI, SD, VT, and WY) have no high minority exchanges. Thus, there are 30 strata.

for example, PPSU itself is not unique. However, combinations of PSTRATUM and PPSU are unique. The stratum and PSU 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 (e.g., for estimates from the Youth CI File, use YSTRATUM YPSU in the NEST statement). Other software packages that use Taylor series methods, such as PCCARP, also use these two variables to define the units needed for computation purposes.

Approximate Sampling Errors

Although the methods of directly calculating the sampling errors using the methods described above are 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 on simple random sampling assumptions. The standard error from this type of statistical software can be adjusted to reflect the complex sample design in order to approximate the standard error of the estimate under the actual sample design used in the survey.

A simple approximation of the impact of the sample design on the estimates of the standard errors 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 computed under the assumption of simple random sampling. A mean DEFT is computed by estimating the DEFT for a relatively large number of estimates and then averaging these DEFT's. Direct computation of the standard errors is recommended when the statistical significance of statements would be affected by small differences in the estimated standard errors.

In complex sample designs, like the NHES:96, the DEFT is typically greater than unity due to the clustering of the sample and the differential weights attached to the observations. The mean DEFT for estimates from the Screener was 1.1, where the average was computed over a range of 54 estimates. The variables used in producing these estimates included household items (XHHACTV, XHHBORN, XHHLANG, HAFDC, HFOODST, HWIC, HHCOMMUN, HINCOME), and public library items (LCOMP, LMATLS, LMOBILE, LPHONE, and LVISIT1). Each estimate was examined for the entire population and by home tenure. The estimated DEFT computed for a particular estimate was typically between 0.9 and 1.2. **A DEFT of 1.1 is recommended for approximating the standard error of estimates from the Screener (the Household and Library data file).**

The design effects for estimates from the Screener by race/ethnicity were slightly higher, with a range of 1.1 to 1.2. To be conservative, a DEFT of 1.2 is recommended for estimates of Screener items by race/ethnicity. For estimates of Screener items for subgroups defined by whether children are present in the household, a DEFT of 1.1 is appropriate. State-level DEFT's ranged from 1.0 to 1.15, with most being approximately 1.0. As a general rule, a DEFT of 1.1 for state-level estimates is recommended.

The mean DEFT for estimates from the Parent PFI/CI interview was 1.2, where the average was computed over a range of 68 estimates. The variables used to estimate the DEFTs included political information, attitude, and participation items (CPAGNST, CPCOMPLI, CPBOYCOT, CPMONEY, CPPUBMTG, CPOTHORG, CPVOTE5, CPTELLIS, CPRDNEWU); knowledge of government items (CPCONST, CPDFENS, CPHOUSE, CPSENATE, CPSPKR, CPVETO, CPVP); home/family activity

items (FOREADTO, FOSTORY, FOAFTHS, FOCHORE, FOCONCRT, FOCRAFTS, FOERAND, FOZOO FOETHNIC, FOLIBRAY, FOMUSEUM); school-related items (SPUBLIC, SRELGON, SCHOICE, SNUMSTUD. SECOLLEG); and parent education (PARGRADE). Each of these measures was examined for subgroups defined by the race/ethnicity of the child and groupings of grade in school. The estimated DEFT computed for a particular estimate was typically between 1.0 and 1.3. To be conservative, **a DEFT of 1.3 is recommended for approximating the standard error of estimates from the Parent PFI/CI interview**. This conservative approach is recommended based on the range of DEFTs and the location of the mean DEFT toward the upper end of the range. The mean DEFT did not vary considerably for estimates from the Parent PFI/CI interview for subgroups defined by race/ethnicity or grade and the same DEFT can be used for all the estimates.

The mean DEFT for estimates from the Youth CI interview was 1.3, where the average was computed over a range of 25 estimates. The variables used to estimate the DEFTs included political information and attitude items (CYANST, CYCOMPLI, CYWATCH, CARDNEWU), knowledge of government items (CYCONST, CYHOUSE, CYJUDGE, CYLAW, CYSENATE, CYSPKR, CYVETO, CYVP), and service activities items (SAARRSER, SACTY, SANEXTYR, SAREQSER, SAREQYOU, SASCHLYR). The estimated DEFT computed for a particular estimate was typically between 1.2 and 1.4. **A DEFT of 1.3 is recommended for approximating the standard error of estimates from the Youth CI interview.** For estimates of characteristics from the Youth CI interview by race/ethnicity, the mean DEFT's were slightly higher, in the range of 1.3 to 1.4. To be conservative, a DEFT of 1.4 is recommended for estimates of Youth CI interview items by race/ethnicity.

The mean DEFT for estimates from the Adult CI interview was 1.2, where the average was computed over a range of 56 estimates. The variables used to estimate the DEFT were political information, attitude, and participation items (CAANST, CACOMPLI, CABOYCOT CAOTHORG, CAMONEY, CAPUBMTG, CARDBOOK, CARDMAGS, CARDNEWU, CAPAP, CATELLIS, CAWATCH); and knowledge of government items (CACONST, CAHOUSE, CAJUDGE, CALAW, CASENATE, CASPKR, CAVP). These estimates were examined by race/ethnicity of the adult. The estimated DEFT computed for a particular estimate was typically between 1.0 and 1.3. **A DEFT of 1.2 is recommended for approximating the standard error of estimates from the Adult CI interview.** The mean DEFT did not vary considerably for estimates from the Adult CI interview for subgroups defined by race/ethnicity, so the DEFT of 1.2 can be used for all estimates.

The average DEFT can be used to approximate the standard error for an estimate. For example, if a weighted estimate of 60 percent is obtained for some characteristic (for example, suppose that 60 percent of children participate in some type of child care arrangement), 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 simple random sampling standard error for this 60 percent statistic would be the square root of ((60 x 40)/20,792 = 0.34, where the weighted estimate (p) is 60 percent, 40 is 100 minus the estimated percent (100-p), and the unweighted sample size (n) is 20,792. The approximate standard error of the estimate from the NHES:96 is this quantity (the simple random sample standard error) multiplied by the Parent PFI/CI interview DEFT of 1.3. In this example, the estimated standard error would be 0.44 percent (1.3 x 0.34 percent). Thus, this calculation is correctly done by hand by using the weighted estimate in the numerator and the unweighted sample size in the denominator to estimate the simple random sampling standard error, and then applying the mean DEFT.

The approximate standard error for a mean can be developed using a related procedure. First, the mean is estimated using the full sample weight in a standard statistical 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 appropriate mean DEFT (1.1 for the Screener, 1.3 for Parent PFI/CI, 1.3 for Youth CI, and 1.2 for Adult CI[9]) to approximate the standard error of the estimate under the NHES:96 design. For example, suppose that the estimated (weighted) mean number of hours the mothers/stepmothers/foster mothers of children work for pay per week was 20 and the simple random sampling standard error (unweighted) was 5 hours. Then, the approximate standard error for the estimate would be 6.5 hours (5 x 1.3). Thus, for means, the unweighted standard error can be obtained from the output of an unweighted analysis, and the mean DEFT is then applied to that unweighted standard error to approximate the standard error of the estimate under the NHES:96 sample design.

Users who wish to adjust the standard errors for parameter estimates of regression models should follow a procedure similar to that discussed for means, above. Specifically, the parameters 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 appropriate mean DEFT (1.1 for the Screener, 1.3 for Parent PFI/CI, 1.4 for Youth CI, and 1.2 for Adult CI) to arrive at the approximate standard error for the NHES:96 design. For example, if a given parameter in a model involving Parent PFI/CI items has an unweighted standard error of 0.45, then the approximate standard error under the NHES:96 design would be 1.3 x 0.45 = 0.59. As was the case for means, the unweighted standard error can be obtained from an unweighted analysis using a standard statistical package, and the mean DEFT is then applied to that unweighted standard error to approximate the standard error of the estimate under the NHES:96 sample design.

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[9] For subgroup analyses by race/ethnicity, the DEFTs may be different, as indicated above.

Weighting and Estimation

Tables 1 - 8

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Table 1.—NHES:96 state and high minority exchange oversampling rates and weighting factors

State	State oversampling		High minority exchange oversampling	
	Rate (x_j)	Weighting factor (A_j)	Rate	Weighting factor (B_j)
WY	4.99	0.201	1.00	1.000
AK	4.36	0.229	2.06	0.487
ND	3.47	0.288	1.00	1.000
SD	3.36	0.298	1.00	1.000
VT	3.34	0.299	1.00	1.000
DE	3.33	0.300	2.00	0.500
DC	2.81	0.356	2.00	0.500
MT	2.67	0.374	1.00	1.000
RI	2.52	0.396	1.00	1.000
ID	2.18	0.459	2.00	0.499
HI	1.91	0.523	2.03	0.492
NH	1.88	0.531	1.00	1.000
NM	1.69	0.591	2.00	0.500
UT	1.55	0.646	2.02	0.495
WV	1.54	0.648	2.02	0.494
ME	1.54	0.649	1.00	1.000
NV	1.50	0.667	2.01	0.498
NE	1.24	0.805	2.00	0.500
All others	1.00	1.000	2.00	0.500

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1996.

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Table 2.—Control totals for raking the NHES:96 household-level weights

State	Children under 18 in household	Control total
AK	Yes	97,239
AK	No	114,262
AL	Yes	605,926
AL	No	972,981
AR	Yes	363,107
AR	No	604,394
AZ	Yes	550,616
AZ	No	999,156
CA	Yes	4,227,774
CA	No	7,007,962
CO	Yes	541,111
CO	No	962,167
CT	Yes	413,495
CT	No	821,866
DC	Yes	66,104
DC	No	193,179
DE	Yes	97,096
DE	No	170,328
FL	Yes	1,726,409
FL	No	3,917,643
GA	Yes	1,045,039
GA	No	1,572,699
HI	Yes	158,781
HI	No	234,703
IA	Yes	386,762
IA	No	725,224
ID	Yes	168,159
ID	No	253,025
IL	Yes	1,608,836
IL	No	2,833,727
IN	Yes	877,787
IN	No	1,454,058
KS	Yes	357,436
KS	No	629,006
KY	Yes	583,193
KY	No	911,809
LA	Yes	667,283
LA	No	920,659
MA	Yes	748,916
MA	No	1,545,608
MD	Yes	700,664
MD	No	1,180,461
ME	Yes	180,241
ME	No	310,759

Table 2.—Control totals for raking the NHES:96 household-level weights—Continued

State	Children under 18 in household	Control total
MI	Yes	1,348,036
MI	No	2,243,856
MN	Yes	641,553
MN	No	1,135,037
MO	Yes	745,951
MO	No	1,339,451
MS	Yes	426,231
MS	No	591,245
MT	Yes	121,351
MT	No	210,463
NC	Yes	1,020,925
NC	No	1,767,628
ND	Yes	90,254
ND	No	157,171
NE	Yes	217,572
NE	No	389,079
NH	Yes	169,500
NH	No	283,189
NJ	Yes	1,022,030
NJ	No	1,881,822
NM	Yes	251,677
NM	No	352,802
NV	Yes	196,134
NV	No	383,747
NY	Yes	2,384,423
NY	No	4,610,241
OH	Yes	1,575,866
OH	No	2,745,016
OK	Yes	476,403
OK	No	803,233
OR	Yes	422,627
OR	No	805,841
PA	Yes	1,541,432
PA	No	3,059,599
RI	Yes	131,153
RI	No	267,258
SC	Yes	529,914
SC	No	801,496
SD	Yes	100,511
SD	No	170,842
TN	Yes	796,617
TN	No	1,341,848
TX	Yes	2,721,726
TX	No	3,931,893

Table 2.—Control totals for raking the NHES:96 household-level weights—Continued

State	Children under 18 in household	Control total
UT	Yes	301,459
UT	No	335,715
VA	Yes	933,317
VA	No	1,583,682
VT	Yes	89,500
VT	No	152,674
WA	Yes	746,661
WA	No	1,357,784
WI	Yes	701,463
WI	No	1,240,875
WV	Yes	273,803
WV	No	473,015
WY	Yes	74,817
WY	No	110,594

State	Home tenure	Control total
AK	Rented	92,828
AK	Owned or other	118,673
AL	Rented	465,923
AL	Owned or other	1,112,984
AR	Rented	294,319
AR	Owned or other	673,182
AZ	Rented	554,589
AZ	Owned or other	995,183
CA	Rented	4,985,476
CA	Owned or other	6,250,260
CO	Rented	567,187
CO	Owned or other	936,091
CT	Rented	424,598
CT	Owned or other	810,763
DC	Rented	158,446
DC	Owned or other	100,837
DE	Rented	79,551
DE	Owned or other	187,873
FL	Rented	1,848,624
FL	Owned or other	3,795,428
GA	Rented	917,837
GA	Owned or other	1,699,901
HI	Rented	181,544
HI	Owned or other	211,940
IA	Rented	333,237
IA	Owned or other	778,749

Table 2.—Control totals for raking the NHES:96 household-level weights—Continued

State	Home tenure	Control total
ID	Rented	126,144
ID	Owned or other	295,040
IL	Rented	1,589,078
IL	Owned or other	2,853,485
IN	Rented	693,741
IN	Owned or other	1,638,104
KS	Rented	316,345
KS	Owned or other	670,097
KY	Rented	454,285
KY	Owned or other	1,040,717
LA	Rented	541,493
LA	Owned or other	1,046,449
MA	Rented	934,895
MA	Owned or other	1,359,629
MD	Rented	657,895
MD	Owned or other	1,223,230
ME	Rented	144,969
ME	Owned or other	346,032
MI	Rented	1,041,911
MI	Owned or other	2,549,981
MN	Rented	500,375
MN	Owned or other	1,276,215
MO	Rented	651,258
MO	Owned or other	1,434,144
MS	Rented	290,003
MS	Owned or other	727,473
MT	Rented	108,622
MT	Owned or other	223,192
NC	Rented	892,000
NC	Owned or other	1,896,553
ND	Rented	85,182
ND	Owned or other	162,243
NE	Rented	203,385
NE	Owned or other	403,266
NH	Rented	143,971
NH	Owned or other	308,718
NJ	Rented	1,019,374
NJ	Owned or other	1,884,478
NM	Rented	196,919
NM	Owned or other	407,560
NV	Rented	262,157
NV	Owned or other	317,724
NY	Rented	3,342,869
NY	Owned or other	3,651,795

Table 2.—Control totals for raking the NHES:96 household-level weights—Continued

State	Home tenure	Control total
OH	Rented	1,405,307
OH	Owned or other	2,915,575
OK	Rented	408,287
OK	Owned or other	871,349
OR	Rented	453,564
OR	Owned or other	774,904
PA	Rented	1,350,099
PA	Owned or other	3,250,932
RI	Rented	161,427
RI	Owned or other	236,984
SC	Rented	401,335
SC	Owned or other	930,075
SD	Rented	92,066
SD	Owned or other	179,287
TN	Rented	683,714
TN	Owned or other	1,454,751
TX	Rented	2,603,781
TX	Owned or other	4,049,838
UT	Rented	203,107
UT	Owned or other	434,066
VA	Rented	848,052
VA	Owned or other	1,668,947
VT	Rented	75,052
VT	Owned or other	167,123
WA	Rented	787,542
WA	Owned or other	1,316,903
WI	Rented	646,827
WI	Owned or other	1,295,511
WV	Rented	193,603
WV	Owned or other	553,215
WY	Rented	59,624
WY	Owned or other	125,786

State	Urbanicity	Control total
AK	Urban	135,381
AK	Rural	76,120
AL	Urban	958,027
AL	Rural	620,880
AR	Urban	520,036
AR	Rural	447,465
AZ	Urban	1,342,558
AZ	Rural	207,214

Table 2.—Control totals for raking the NHES:96 household-level weights—Continued

State	Urbanicity	Control total
CA	Urban	10,323,990
CA	Rural	911,746
CO	Urban	1,200,451
CO	Rural	302,827
CT	Urban	985,413
CT	Rural	249,948
DE	Urban	176,699
DE	Rural	90,725
FL	Urban	4,800,004
FL	Rural	844,048
GA	Urban	1,686,796
GA	Rural	930,942
HI	Urban	344,924
HI	Rural	48,560
IA	Urban	675,388
IA	Rural	436,598
ID	Urban	232,919
ID	Rural	188,265
IL	Urban	3,759,414
IL	Rural	683,149
IN	Urban	1,545,801
IN	Rural	786,044
KS	Urban	682,520
KS	Rural	303,922
KY	Urban	791,117
KY	Rural	703,885
LA	Urban	1,093,727
LA	Rural	494,215
MA	Urban	1,923,554
MA	Rural	370,970
MD	Urban	1,547,442
MD	Rural	333,683
ME	Urban	198,392
ME	Rural	292,609
MI	Urban	2,436,363
MI	Rural	1,155,529
MN	Urban	1,193,865
MN	Rural	582,724
MO	Urban	1,420,853
MO	Rural	664,549
MS	Urban	492,400
MS	Rural	525,076
MT	Urban	168,609
MT	Rural	163,205

Table 2.—Control totals for raking the NHES:96 household-level weights—Continued

State	Urbanicity	Control total
NC	Urban	1,385,450
NC	Rural	1,403,103
ND	Urban	124,810
ND	Rural	122,615
NE	Urban	393,428
NE	Rural	213,223
NH	Urban	214,486
NH	Rural	238,203
NJ	Urban	2,589,232
NJ	Rural	314,620
NV	Urban	510,508
NV	Rural	69,373
NY	Urban	5,804,773
NY	Rural	1,189,891
OH	Urban	3,286,024
OH	Rural	1,034,858
OK	Urban	872,993
OK	Rural	406,643
OR	Urban	862,050
OR	Rural	366,418
PA	Urban	3,174,409
PA	Rural	1,426,622
RI	Urban	339,556
RI	Rural	58,856
SC	Urban	748,072
SC	Rural	583,338
SD	Urban	132,579
SD	Rural	138,774
TN	Urban	1,323,852
TN	Rural	814,613
TX	Urban	5,262,143
TX	Rural	1,391,476
UT	Urban	539,181
UT	Rural	97,992
VA	Urban	1,740,324
VA	Rural	776,675
VT	Urban	68,137
VT	Rural	174,037
WA	Urban	1,594,737
WA	Rural	509,708
WI	Urban	1,213,283
WI	Rural	729,055
WV	Urban	283,524
WV	Rural	463,294

Table 2.—Control totals for raking the NHES:96 household-level weights—Continued

State	Urbanicity	Control total
WY	Urban	115,650
WY	Rural	69,761

State	Race of householder	Control total
AK	White	171,777
AK	All other	39,724
AL	White	1,214,795
AL	All other	364,112
AR	White	825,419
AR	All other	142,082
AZ	White	1,335,612
AZ	All other	214,160
CA	White	8,540,441
CA	Black	803,456
CA	All other	1,891,839
CO	White	1,355,995
CO	All other	147,283
CT	White	1,102,766
CT	All other	132,595
DC	White	91,587
DC	All other	167,696
DE	White	221,840
DE	All other	45,584
FL	White	4,906,138
FL	Black	602,508
FL	All other	135,406
GA	White	1,946,000
GA	All other	671,738
HI	White	153,250
HI	All other	240,234
IL	White	3,647,544
IL	Black	578,991
IL	All other	216,028
IN	White	2,133,804
IN	All other	198,041
LA	White	1,133,556
LA	All other	454,386
MA	White	2,108,032
MA	All other	186,492
MD	White	1,393,338
MD	All other	487,787
MI	White	3,054,925
MI	All other	536,967

Table 2.—Control totals for raking the NHES:96 household-level weights—Continued

State	Race of householder	Control total
MO	White	1,858,677
MO	All other	226,725
MS	White	696,474
MS	All other	321,002
NC	White	2,193,579
NC	All other	594,974
NJ	White	2,400,426
NJ	Black	344,792
NJ	All other	158,634
NM	White	486,818
NM	All other	117,661
NV	White	508,469
NV	All other	71,412
NY	White	5,469,786
NY	Black	995,928
NY	All other	528,950
OH	White	3,830,682
OH	All other	490,200
OK	White	1,091,755
OK	All other	187,881
PA	White	4,142,442
PA	All other	458,589
SC	White	977,638
SC	All other	353,772
TN	White	1,818,630
TN	All other	319,835
TX	White	5,269,699
TX	Black	744,847
TX	All other	639,073
VA	White	2,022,255
VA	All other	494,744
WA	White	1,922,560
WA	All other	181,885
WI	White	1,825,219
WI	All other	117,119

		Control total
TOTAL		99,087,652

SOURCE: Independent estimates from the 1990 Census of Population and Housing and from the March 1995 Current Population Survey.

Table 3.—NHES:96 Parent PFI/CI interview nonresponse adjustment cells

Explanatory variable: Grade/equivalent from Screener	Number of respondents in cell	Completion rate (%)
Not enrolled	1,405	91.3
Nursery school/Pre-Kindergarten/Head Start	1,596	92.5
Kindergarten/Transitional Kindergarten/Pre-1st grade	1,414	91.0
1st grade or equivalent	1,392	93.2
2nd grade or equivalent	1,242	90.7
3rd grade or equivalent	1,359	91.1
4th grade or equivalent	1,503	91.1
5th grade or equivalent	1,486	89.6
6th grade or equivalent	1,515	87.5
7th grade or equivalent	1,477	87.7
8th grade or equivalent	1,393	86.4
9th grade or equivalent	1,363	89.8
10th grade or equivalent	1,280	85.0
11th grade or equivalent	1,219	85.0
12th grade or equivalent	1,143	85.5
Ungraded/no grade equivalent	5	79.4

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1996.

Table 4.—Control totals for raking the NHES:96 person-level Parent PFI/CI interview weights

Race/ethnicity of child	Household income	Control total
Black, non-Hispanic	$10,000 or less	3,173,551
Black, non-Hispanic	$10,001-$25,000	2,757,623
Black, non-Hispanic	$25,001 or more	3,394,572
Hispanic	$10,000 or less	1,974,285
Hispanic	$10,001-$25,000	3,022,682
Hispanic	$25,001 or more	2,856,195
Other	$10,000 or less	3,633,965
Other	$10,001-$25,000	7,794,834
Other	$25,001 or more	30,388,979

Census region	Urbanicity	Control total
Northeast	Urban	9,510,867
Northeast	Rural	2,541,634
South	Urban	13,914,039
South	Rural	6,354,664
Midwest	Urban	10,145,594
Midwest	Rural	4,008,454
West	Urban	10,800,159
West	Rural	1,721,275

Home tenure	Grade of child	Control total
Rent	Not enrolled	2,075,138
Rent	Nursery/Pre-K/Head Start	1,509,508
Rent	Kindergarten/Pre-1st/Trans. K	1,551,342
Rent	1st grade	1,552,739
Rent	2nd grade	1,328,395
Rent	3rd grade	1,291,904
Rent	4th grade	1,258,317
Rent	5th grade	1,271,736
Rent	6th grade	1,218,509
Rent	7th grade	1,240,326
Rent	8th grade	1,081,016
Rent	9th grade	1,047,667
Rent	10th grade	1,124,240
Rent	11th grade	858,246
Rent	12th grade	870,133

Table 4.—Control totals for raking the NHES:96 person-level Parent PFI/CI interview weights—
Continued

Home tenure	Grade of child	Control total
Own or other arrangement*	Not enrolled	2,495,670
Own or other arrangement	Nursery/Pre-K/Head Start	2,792,077
Own or other arrangement	Kindergarten/Pre-1st/Trans. K	2,370,035
Own or other arrangement	1st grade	2,842,532
Own or other arrangement	2nd grade	2,673,160
Own or other arrangement	3rd grade	2,524,209
Own or other arrangement	4th grade	2,708,292
Own or other arrangement	5th grade	2,685,612
Own or other arrangement	6th grade	2,768,756
Own or other arrangement	7th grade	2,685,640
Own or other arrangement	8th grade	2,659,339
Own or other arrangement	9th grade	2,771,198
Own or other arrangement	10th grade	2,610,603
Own or other arrangement	11th grade	2,567,775
Own or other arrangement	12th grade	2,562,572
		Control total
TOTAL		58,996,686

*Other arrangements include any living arrangement other than owning or renting.

SOURCE: Independent estimates from the October 1994 and March 1995 Current Population Survey.

Table 5.—NHES:96 Youth CI interview nonresponse adjustment cells

Explanatory variable: Grade/equivalent from Parent PFI/CI interview	Number of respondents in cell	Completion rate (%)
6th grade or equivalent	1,277	83.6
7th grade or equivalent	1,251	84.5
8th grade or equivalent	1,240	88.1
9th grade or equivalent	1,165	87.1
10th grade or equivalent	1,110	86.7
11th grade or equivalent	1,056	83.8
12th grade or equivalent	944	84.6

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1996.

Table 6.—Control totals for raking the NHES:96 person-level Youth CI interview weights

Race/ethnicity of child	Household income	Control total
Black, non-Hispanic	$10,000 or less	1,266,248
Black, non-Hispanic	$10,001-$25,000	1,198,280
Black, non-Hispanic	$25,001 or more	1,654,690
Hispanic	$10,000 or less	696,561
Hispanic	$10,001-$25,000	1,241,464
Hispanic	$25,001 or more	1,380,511
Other	$10,000 or less	1,344,961
Other	$10,001-$25,000	3,252,496
Other	$25,001 or more	14,030,810

Census region	Urbanicity	Control total
Northeast	Urban	4,202,108
Northeast	Rural	1,122,949
South	Urban	6,147,526
South	Rural	2,807,629
Midwest	Urban	4,482,545
Midwest	Rural	1,771,022
West	Urban	4,771,745
West	Rural	760,497

Home tenure	Grade of child	Control total
Rent	6th grade	1,218,508
Rent	7th grade	1,240,326
Rent	8th grade	1,081,010
Rent	9th grade	1,047,672
Rent	10th grade	1,124,227
Rent	11th grade	858,250
Rent	12th grade	870,136
Owner or other	6th grade	2,768,759
Owner or other	7th grade	2,685,634
Owner or other	8th grade	2,659,334
Owner or other	9th grade	2,771,209
Owner or other	10th grade	2,610,590
Owner or other	11th grade	2,567,764
Owner or other	12th grade	2,562,602

		Control total
TOTAL		26,066,021

SOURCE: Independent estimates from the October 1994 and March 1995 Current Population Survey.

Table 7.—NHES:96 Adult CI interview nonresponse adjustment cells

Explanatory variables: Sex/marital status/educational attainment from Screener	Number of respondents in cell	Completion rate (%)
Female/Currently married/Through 12th grade, no H.S. diploma	84	86.0
Female/Currently married/H.S. diploma or some college	414	86.0
Female/Currently married/College graduate	152	86.6
Female/Not currently married/Through 12th grade, no H.S. diploma	98	78.7
Female/Not currently married/H.S. diploma or some college	385	85.0
Female/Not currently married/College graduate	158	90.5
Male/Currently married/Through 12th grade, no H.S. diploma	63	74.4
Male/Currently married/H.S. diploma or some college	328	81.0
Male/Currently married/College graduate	186	86.5
Male/Not currently married/Through 12th grade, no H.S. diploma	41	90.7
Male/Not currently married/H.S. diploma or some college	245	79.7
Male/Not currently married/College graduate	96	88.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey (NHES), spring 1996.

Table 8.—Control totals for raking the NHES:96 person-level Adult CI interview weights

Race/ethnicity	Household income	Control total
Black, non-Hispanic	$10,000 or less	5,715,930
Black, non-Hispanic	$10,001-25,000	6,330,147
Black, non-Hispanic	$25,001 or more	9,114,913
Hispanic	$10,000 or less	3,892,398
Hispanic	$10,001-25,000	6,226,797
Hispanic	$25,001 or more	7,049,163
Other	$10,000 or less	15,279,447
Other	$10,001-25,000	35,488,082
Other	$25,001 or more	99,135,859

Age	Sex	Control total
18-29 years	Male	20,554,624
18-29 years	Female	21,201,285
30-49 years	Male	39,863,289
30-49 years	Female	41,235,922
50 years or more	Male	29,377,548
50 years or more	Female	36,000,068

Census region	Urbanicity	Control total
Northeast	Urban	30,345,037
Northeast	Rural	8,109,248
South	Urban	44,393,641
South	Rural	20,274,967
Midwest	Urban	32,370,174
Midwest	Rural	12,789,231
West	Urban	34,458,603
West	Rural	5,491,835

Home tenure		Control total
Rent		55,049,448
Own or other		133,183,288

		Control total
TOTAL		188,232,736

SOURCE: Independent estimates from the October 1994 and March 1995 Current Population Survey.

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References

Brick, J. M., Waksberg, J., Kulp, D., and Starer, A. 1995. "Bias in List-Assisted Telephone Samples", paper presented at American Association of Public Opinion Research.

Kalton, G., and Kasprzyk, D. (1986). The treatment of missing data. *Survey Methodology*, 12:1-16.

Massey, J. T. and Botman, S. L. 1988. Weighting Adjustments for Random Digit Dialed Surveys. In Groves, R.M., Biemer, P.P., Lyberg, L.E., Massey, J.T., Nicholas II, W.L., and Waksberg, J. (eds.). *Telephone Survey Methodology*. New York: John Wiley & Sons.

Montaquila, J., Brick, J. M., and Brock, S. P. 1997a. *Reinterview Results for the Parent and Youth Components of the 1996 National Household Education Survey*. NCES Working Paper 97-38. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Montaquila, J., Brick, J. M., and Brock, S. P. 1997b. *Undercoverage Bias in Estimates of Characteristics of Households and Adults in the 1996 National Household Education Survey*. NCES Working Paper 97-39. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Nolin, M. J., Collins, M. A., Vaden-Kiernan, N., and Davies, E. 1997. *Comparison of Estimates in the 1996 National Household Education Survey*. NCES Working Paper 97-28. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

Vaden-Kiernan, N., Nicchitta, P. G., Montaquila, J., and Collins, M. A. 1997. *Design, Data Collection, Interview Administration Time, and Data Editing in the 1996 National Household Education Survey*. NCES Working Paper 97-35. Washington, D.C.: U.S. Department of Education, National Center for Education Statistics, National Household Education Survey.

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Listing of NCES Working Papers to Date

Please contact Ruth R. Harris at (202) 219-1831
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<u>Number</u>	<u>Title</u>	<u>Contact</u>
94-01 (July)	Schools and Staffing Survey (SASS) Papers Presented at Meetings of the American Statistical Association	Dan Kasprzyk
94-02 (July)	Generalized Variance Estimate for Schools and Staffing Survey (SASS)	Dan Kasprzyk
94-03 (July)	1991 Schools and Staffing Survey (SASS) Reinterview Response Variance Report	Dan Kasprzyk
94-04 (July)	The Accuracy of Teachers' Self-reports on their Postsecondary Education: Teacher Transcript Study, Schools and Staffing Survey	Dan Kasprzyk
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97-23 (July)	Further Cognitive Research on the Schools and Staffing Survey (SASS) Teacher Listing Form	Dan Kasprzyk
97-24 (Aug.)	Formulating a Design for the ECLS: A Review of Longitudinal Studies	Jerry West
97-25 (Aug.)	1996 National Household Education Survey (NHES:96) Questionnaires: Screener/Household and Library, Parent and Family Involvement in Education and Civic Involvement, Youth Civic Involvement, and Adult Civic Involvement	Kathryn Chandler
97-26 (Oct.)	Strategies for Improving Accuracy of Postsecondary Faculty Lists	Linda Zimbler
97-27 (Oct.)	Pilot Test of IPEDS Finance Survey	Peter Stowe
97-28 (Oct.)	Comparison of Estimates in the 1996 National Household Education Survey	Kathryn Chandler
97-29 (Oct.)	Can State Assessment Data be Used to Reduce State NAEP Sample Sizes?	Steven Gorman
97-30 (Oct.)	ACT's NAEP Redesign Project: Assessment Design is the Key to Useful and Stable Assessment Results	Steven Gorman
97-31 (Oct.)	NAEP Reconfigured: An Integrated Redesign of the National Assessment of Educational Progress	Steven Gorman
97-32 (Oct.)	Innovative Solutions to Intractable Large Scale Assessment (Problem 2: Background Questionnaires)	Steven Gorman
97-33 (Oct.)	Adult Literacy: An International Perspective	Marilyn Binkley
97-34 (Oct.)	Comparison of Estimates from the 1993 National Household Education Survey	Kathryn Chandler
97-35 (Oct.)	Design, Data Collection, Interview Administration Time, and Data Editing in the 1996 National Household Education Survey	Kathryn Chandler
97-36 (Oct.)	Measuring the Quality of Program Environments in Head Start and Other Early Childhood Programs: A Review and Recommendations for Future Research	Jerry West

Listing of NCES Working Papers to Date--Continued

Number	Title	Contact
97-37 (Nov.)	Optimal Rating Procedures and Methodology for NAEP Open-ended Items	Steven Gorman
97-38 (Nov.)	Reinterview Results for the Parent and Youth Components of the 1996 National Household Education Survey	Kathryn Chandler
97-39 (Nov.)	Undercoverage Bias in Estimates of Characteristics of Households and Adults in the 1996 National Household Education Survey	Kathryn Chandler
97-40 (Nov.)	Unit and Item Response Rates, Weighting, and Imputation Procedures in the 1996 National Household Education Survey	Kathryn Chandler