FAMILY INCOME RESPONSE PATTERNS FOR VARYING LEVELS OF INCOME DETAIL: AN ANALYSIS OF THE NATIONAL HEALTH INTERVIEW SURVEY (NHIS)

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Introduction

While income data are central to a number of policy issues, hence their inclusion on all major federal surveys, the privacy concerns they arouse and the often complex recall issues involved in answering make them notorious producers of item nonresponse (Moore et al., 2000). The National Health Interview Survey (NHIS)[1] is no exception. Weighted nonresponse rates (don't know and refusal responses) for an exact amount question on annual total family income grew from 25% in 1997 to 32% in 2000. While income nonresponse has stabilized in recent years (2001 and 2002), the rates remain above 30%.[2] Nonresponse follow-ups designed to elicit an approximate amount have underperformed, reducing overall nonresponse by only three to four percentage points each year.

The high nonresponse rates raise concerns about the quality of NHIS income data, especially considering the strong research interest in and documented association between socioeconomic status (SES) and various health outcomes. The considerable loss of cases due to missing incomes poses problems for multivariate analyses, including a loss of precision in estimates and the introduction of bias if respondents differ from nonrespondents. Both can severely restrict the generalizability of findings to the target population.

In response to these quality concerns, we have undertaken research to better understand income nonresponse on the NHIS. Among the goals are bias assessment and the development of post-collection data adjustments (e.g., imputation), as well as nonresponse reduction through question redesign. Initial analyses addressed nonresponse to the exact amount question on annual total family income. Logistic regression was used to model overall nonresponse (don't knows and refusals combined) and nonresponse type (don't know versus refused). The analyses revealed several correlates of both measures including age, education, current employment status, and number of adults in the family (Pleis and Dahlhamer, 2003).

For this paper we extend previous analytic efforts by focusing on responses to the exact amount question and follow-up items intended to convert initial nonresponders. Through the application of logistic regression methods, we identify factors associated with the reporting of varying levels of total family income detail, including no amount reporting, partial amount (above or below $20,000) reporting, and reporting of an interval or exact amount. Based on 2001-2002 data, results will further inform bias assessment and question redesign activities.

Family Income Questions on the NHIS

The family income section of the NHIS includes items on income source recipiency, annual total family income amount, home ownership, and governmental financial assistance (food). Section questioning flows in this general order. Responses to all items are provided by a knowledgeable family member (family respondent) 18 years of age or older.[3]

The sequence of questions on the amount of total family income utilizes the door-in-the-face technique described by Hippler and Hippler (1986).[4] After responding to questions on income recipiency, the family respondent receives the following exact amount question on total family income:

- "Now I am going to ask about the total combined income {for you/of your family} in {previous calendar year}, including income from all sources we have just talked about such as wages, salaries, Social Security or retirement benefits, help from relatives and so forth. Can you tell me that amount before taxes?"

A valid (amount) response to this question skips the respondent to questions on home ownership. If,

[1] Covering the civilian, noninstitutionalized population of the United States, the NHIS is a face-to-face (in-person), multi-purpose health survey administered annually by the National Center for Health Statistics. It is considered the principal source of information on the health of the household population of the United States. For more information, please visit the NHIS website at www.cdc.gov/nchs/nhis.htm.

[2] Reported rates are based on family respondents. Rates for the six-year period are 24.6% (1997), 28.4% (1998), 30.5% (1999), 31.9% (2000), 31.2% (2001), and 31.1% (2002).

[3] There are exceptions to this rule, including emancipated minors age 14 to 17.

[4] With this approach a survey interviewer begins with an extreme first demand and, if necessary, follows up with a more moderate second request. Based on norms of reciprocity, the technique assumes that "you should make concessions to those who make concessions to you" (Hippler and Hippler, 1986: 28).

however, the family respondent doesn't know or refuses to provide an income amount, he/she receives the following question:

- "You may not be able to give us an exact figure for {your/total combined family} income, but can you tell me if your income in {previous calendar year} was…(1) $20,000 or more or (2) less than $20,000?"

A don't know or refusal response to this item ends the questioning on total family income. Conversely, if the respondent selects one of the two valid responses, he/she receives a question designed to elicit an approximate income.

- "Of those income groups, can you tell me which letter best represents {your/the total combined FAMILY} income during {previous calendar year}?"

If the response to the previous question was "less than $20,000," the respondent is handed a flashcard with incomes listed in thousand dollar intervals. If "$20,000 or more" was selected, the respondent is shown a flashcard with incomes in thousand dollar intervals up to $35,000, and then five thousand dollar intervals up to the final category of "$75,000 and over." Regardless of the response to this item, questioning on total family income ends.

In total, this sequence of questions allows for four outcomes. First, a respondent may report an amount at the initial amount question, the desired outcome. Second, an initial amount nonresponder may refuse or report they don't know if the total family income is $20,000 or more or less than $20,000, resulting in no income amount reporting. Third, an initial nonresponder may report their total family income to be above or below $20,000, but not report an income interval at the next question. Finally, an initial nonresponder may provide valid data at both of the follow-up questions. Since NHIS public use data are released with just an interval measure of total family income, this latter outcome is essentially equivalent to providing an exact amount at the initial question. The value of collecting at least an income interval cannot be overstated. The construction of the poverty ratio, a standardized measure of total family income and an extremely important SES indicator, requires at least an interval amount.

Bias, Question Redesign, and the Level of Income Detail

For the main analysis we created a three-category measure of total family income detail that reflects the above described outcomes. The categories are 1) no income amount information, 2) partial income amount information ($20,000 above/below), and 3) at least an income interval amount (response to the initial exact amount question or valid responses to both of the nonresponse follow-ups). For the two-year period of 2001-2002, 72% of family respondents (weighted) provided an exact or interval amount, while another 19% provided a partial income amount. Nine percent of family respondents failed to report any income amount information.

Of central concern are the "no information" and "partial information" groups. If these two groups differ from the interval/exact amount responders and/or from each other, then bias is present and data adjustments such as imputation are necessary. The effectiveness and ease of use of such procedures will depend on the underlying nonresponse mechanism (see Little and Rubin, 1987, for a thorough discussion).

Additionally, any observed differences in these groups could directly or indirectly aid question redesign efforts. Simple changes to the follow-up items such as broadening the income intervals presented on the flashcards (second follow-up question), or using a series of cascading or unfolding bracket questions[5] would likely improve reporting by the "partial income" respondents. These would be pertinent design changes to explore and results of our analysis could possibly be used as a recruitment and design tool for cognitive and experimental testing. We can speculate, however, that the aforementioned changes would have little to no effect on respondents who fail to report any income amount information, necessitating additional design solutions.[6] Since the NHIS relies on computer-assisted personal interviewing (CAPI), one approach might involve programming the instrument to administer a separate set of questions or specialized probes to the "no information" respondents (Bates and Pedace, 2000).[7] This would require an imbedded model within the CAPI instrument that would predict the likelihood of a respondent failing to report an income amount. The model's applicability would be contingent on the ability to easily distinguish "no information" from other income respondents, and the use of predictive information collected prior to questions on total family income (model variables meet this criteria; see next section).

[5] The unfolding brackets approach involves a series of yes/no questions designed to narrow down the respondent's income range.

[6] If so, these changes would likely shift rather than greatly minimize bias in estimates involving total family income.

[7] For example, the initial exact amount question could be replaced altogether by an interval amount question or a set of unfolding brackets.

Modeling the Level of Income Detail

Consistent with our previous work (Pleis and Dahlhamer, 2003) and the larger literature on income nonresponse, we utilize a three-component model for modeling the level of income detail reported by family respondents.[8] The first component consists of the following respondent characteristics: age (Bell, 1984; Owens et al., 2001; Pleis and Dahlhamer, 2003; Riphahn and Serfling, 2002; Ross and Reynolds, 1996; Smith, 1991; Turrell, 2000); sex (Bell, 1984; Owens et al., 2001; Pleis and Dahlhamer, 2003; Schrapler, 2003; Smith, 1991); race and ethnicity (Bell, 1984; Owens et al., 2001; Pleis and Dahlhamer, 2003; Ross and Reynolds, 1996); education (Bell, 1984; Owens et al., 2001; Pleis and Dahlhamer, 2003; Riphahn and Serfling, 2002; Smith, 1991; Turrell, 2000); marital status (Owens et al., 2001; Pleis and Dahlhamer, 2003; Ross and Reynolds, 1996); current employment status and employment in previous calendar year[9] (Kormendi, 1988; Pleis and Dahlhamer, 2003; Riphahn and Serfling, 2002; Smith, 1991; Turrell, 2000); U.S. versus foreign born (Pleis and Dahlhamer, 2003); and self-reported health status and the presence of an activity limitation (Turrell, 2000).

The second model component is comprised of family and household level covariates, including housing tenure (Pleis and Dahlhamer, 2003; Souza-Posa and Henneberger, 2000); number of adults in the family (Pleis and Dahlhamer, 2003; Ross and Reynolds, 1996; Smith, 1991); presence of children in the family (Pleis and Dahlhamer, 2003; Schrapler, 2003); residence in a multiple-family household (Pleis and Dahlhamer, 2003); and total number of income sources for the family (Pleis and Dahlhamer, 2003; Turrell, 2000).

The final model component includes three geographic indicators: metropolitan statistical area (MSA) status, urban/rural residency, and U.S. Census region (Pleis and Dahlhamer, 2003). The model components and associated measures are presented in Table 1.

Methods

Data used in this study were obtained from the 2001 – 2002 NHIS, a complex, multistage household health survey designed to provide estimates for the U.S. civilian, noninstitutionalized household population. A family respondent provided the NHIS information used in this study. While family respondents may provide proxy reports for other family members, all of the information about the family respondent is self-reported. All family respondents less than 18 years of age were excluded from the analysis (n = 109). The family respondent response rate over the two year study period was 88%.

As previously mentioned, we were interested in exploring the relationship between respondent, family/household, and geographic characteristics and the level of reported income detail. Again, specific information on the model variables is shown in Table 1. Since the categories of the dependent variable can be rank ordered, we tested the proportional odds assumption that the effects of the model variables are the same across the three outcomes. Utilizing the methods of Bender and Grouven (1998), the proportional odds assumption was satisfied when unknowns[10] with regard to the model variables were excluded from the analysis. Consistent with this finding, we present results from a single ordinal logistic regression. While this reduces the complexity of the interpretation, it also has implications for how the results can be applied from a questionnaire design perspective. We discuss this more fully in later sections.

Results, which were weighted to be representative of the U.S. civilian, noninstitutionalized population, are presented as odds ratios (ORs). Due to the relatively large sample size (n = 68,117), the level for detecting statistical significance was chosen to be $\alpha = 0.01$, and 99% confidence intervals (CIs) are presented. Also, since a large sample size can provide statistically significant results when an odds ratio is close to 1.00, we will primarily focus on results for which the odds ratio is significantly different and farther from 1.00. All analyses were performed using SUDAAN (Version 8.0, Research Triangle Institute, Inc., Research Triangle Park, NC), which accounts for the complex sample design of the NHIS.

Results

The ORs and the associated 99% confidence intervals from the ordinal logistic regression analysis are shown in Table 1. Looking at family respondent characteristics, respondents who were 18 – 24, 25 – 54, or 55 – 64 years of age had considerably higher odds of providing more detailed income data than respondents who were at least 75 years of age. Although statistically significant, the difference in income reporting tendencies between those 65 – 74 years of age and those at least 75 years of age was not of an appreciable magnitude. With respect to race and

[8] In the discussion that follows, we include citations of research employing the same or similar measure. Note that some of the cited work failed to produce an association between the listed measure and income nonresponse. Furthermore, when significant effects emerged the results across studies were often contradictory.

[9] Occupation has been extensively explored, but is not included in our model since occupational data were not available for all family respondents.

[10] Unknowns include don't know and refusal responses.

Hispanic ethnicity, we found Hispanic, non-Hispanic white, and non-Hispanic black respondents to have similar income reporting patterns. However, family respondents who indicated they were of a multi-racial background had odds of providing more detailed income information 62% higher than non-Hispanic whites.

Additional respondent characteristics with moderate to strong associations with income reporting patterns include employment in the previous calendar year and marital status. While current employment status (employed/not employed) had no impact, those who worked in the previous calendar year had odds of providing more detailed income information 47% higher than those who did not work in the past year. As for marital status, married respondents had odds of providing more detailed income information 35% to 67% higher than did widowed, divorced, separated, or never married respondents. The difference in the amount of income detail provided between married respondents and those who were cohabiting was not statistically significant.

While statistically significant associations with income reporting tendencies emerged for education, sex, country of birth, and activity limitations, the magnitude of these associations was relatively small. Family respondents with at least some college education had slightly higher odds of providing more detailed income information than did family respondents with less than a high school education. Reporting tendencies appeared to be similar, however, for family respondents with a high school education (or its equivalent) or less. In addition, males, respondents born in the U.S., and those with an activity limitation had slightly higher odds of providing more detailed income information than females, foreign born respondents, and those without an activity limitation, respectively.

Family and household characteristics with an appreciable level of association with the level of income detail included the number of income sources for the family and the number of adults in the family. Families in which the family respondent was the only adult had odds of providing more income detail nearly two-and-one-half times as high as family respondents in families with at least three adults. Additionally, family respondents in these one adult families had substantially higher odds of providing more detailed income information than did family respondents in families with two adults (OR = 1.80; 99% CI = 1.64, 1.98)[11]. Focusing on the number of income sources, family respondents in families with at least two income sources had odds of reporting more detailed income information at least 59% as high as those in families with no income sources. However, the difference between those with one source of income and those with no sources was not statistically significant. When compared with family respondents in families with one source of income, family respondents in families with at least three sources of income had odds of providing more detailed income information 56% higher (OR = 1.56; 99% CI = 1.44, 1.69)[11].

Of the remaining family and household measures, housing tenure and presence of children in the family had statistically significant but minor associations (in magnitude) with the level of income amount detail. Home owners had slightly lower odds of providing more detailed income data than renters, while respondents in families with children had slightly higher odds of reporting more income detail compared to respondents in childless families. Finally, of the three geographic measures included in our model (urban/rural residence, MSA status, region of the country), only region has a statistically significant impact on income reporting patterns. Compared to respondents in the West region, Southern respondents had slightly higher odds of providing more detailed income amounts.

Discussion

Extending our previous work (Pleis and Dahlhamer, 2003), we found several measures to be significantly associated with the reported level of income detail. To summarize, variables with an appreciable impact were age, race/ethnicity, employment in the previous calendar year, marital status, number of income sources for the family, and number of adults in the family. Covariates with a modest to minimal impact were sex, education, country of birth, activity limitation, housing tenure, presence of children in the family, and U.S. Census region of residency. Overall, we found support for all three model components.

From an analytic perspective, the findings indicate that nonresponse bias is likely to be present in analyses involving total family income. This is especially true for more precise (requiring more detailed income information) measures, such as the poverty ratio. This generated measure is the ratio of a family's income to U.S. Census Bureau poverty thresholds, and is a way to standardize a family's income for analysis purposes. However, the poverty ratio is only generated for families who report their family income in at least an interval form, meaning that roughly a quarter of families will not receive a valid value. The extent or magnitude of nonresponse bias on this measure (and other income measures) is contingent upon the relationship between correlates of nonresponse and income itself. Those correlates of reported income detail found to be highly associated with total family

[11] Additional odds ratio not shown in Table 1.

income amount introduce more bias. We are currently extending our analysis to address this issue. Assuming, however, we have accounted for all measures associated with the level of reported income detail, indicating a missing at random (MAR) pattern of nonresponse (see Little and Rubin, 1987), what bias is present can be adjusted through standard weighting or imputation procedures.

For survey developers, the findings suggest that an imbedded model within the NHIS instrument, designed to isolate and route "no income information" respondents to simpler, less threatening questions, may be difficult to implement. The applicability of the model, as we initially conceived, is predicated on the ability to easily distinguish "no information" from other income respondents. However, support for the proportional odds assumption meant that model variables operated consistently across the three outcomes of our dependent variable. For example, while older respondents (75+) were more likely to provide partial income information, they were also more likely to provide no income information compared to their younger counterparts. If the model parameters were relaxed, however, we could implement programming that would route all potential nonresponders (i.e., anyone likely to not respond to the initial exact amount question) to a separate set of questions. While possible, the limitations of a more encompassing approach may include increased programming costs, reductions in computer performance, and the loss of some exact amount reporting used for in-house (NCHS) research and imputation procedures.

To complicate matters, we suspect our model is misspecified, with significant correlates of the reported level of income detail absent from our analysis. While significant variable interactions did not emerge in our previous analyses (Pleis and Dahlhamer, 2003), the introduction of interaction terms with our current outcome measure could prove beneficial. Significant interactions may lead to the rejection of the proportional odds assumption, possibly allowing us to differentiate the partial and no information respondents through the use of other multiple logistic regression techniques.[12] More likely, and troubling in terms of bias and data adjustments, is that the reported level of income detail is related to income itself (or other unobserved phenomena), an assumption warranting further investigation.

Previous discussion aside, there are two additional findings we find worthy of mention. First, and contrary to expectations, we found respondents in multiple income source families to have less difficulty providing detailed income information than respondents in families with just one income source. We initially hypothesized that multiple income sources would increase the complexity of the recall task, leading respondents in these families to report less amount detail. However, the multiple source families may have multiple wage earners who are presumably knowledgeable of the family's finances, an issue we will address in future analyses with a wage earner count measure. It is also possible that the type of income (wages, interest and dividends, welfare assistance, and others) is masking the relationship between number of income sources and the amount of detail reported by family respondents. Again, we will address this issue in future research. And finally, it is plausible that single source families are also lower income families. In these cases, respondents may be less forthcoming due to concerns the data will reflect poorly on them.

The final noteworthy finding involves race and Hispanic ethnicity. Although the income detail reporting patterns were very similar for Hispanic, non-Hispanic black, and non-Hispanic white respondents, non-Hispanic, multi-racial respondents provided more detailed income information. This may be related, in part, to the way in which multi-racial data for non-Hispanic respondents is collected in the NHIS.[13] Respondents are not directly asked if they are multi-racial. Rather, they are asked to report all racial groups with which they identify themselves. Non-Hispanic respondents who indicate more than one racial group are considered multi-racial. Given this question structure, multi-racial reporting may be indicative of a more forthcoming respondent in the interview setting.[14] To confirm or reject this hypothesis, we will explore the larger reporting patterns (index of item missingness across several items in the NHIS) of this and other racial/ethnic subgroups.

Future Directions

While we have expanded our understanding of income nonresponse on the NHIS, a tremendous amount of work remains. Through this analysis we were able to identify a set of respondent, family/household, and geographic indicators associated with the reported level of income detail. We plan to use these indicators as a recruitment tool for cognitive testing of question alternatives. Among the design

[12] Examples include multinomial logistic regression or separate binary logistic regressions. While these procedures may aid in discriminating membership in categories of our dependent variable, we would lose the power and efficiency of an ordered logistic regression.

[13] Hispanic respondents are classified based on Hispanic origin, irrespective if they indicate a multi-racial background.

[14] It is unclear, however, if all respondents who are multi-racial would indicate as such on these surveys.

changes being considered include wider income intervals for our second nonresponse follow-up item, the complete replacement of the current follow-ups with a series of income bracketing questions, and repeating confidentiality pledges when the exact amount question is asked. Beyond this, we would like to field test the design changes that appear successful in the laboratory setting.

As previously discussed, the results provided little support for addressing income nonresponse through an imbedded model within the CAPI instrument. However, we suspect there are measures not included in our model that may better discriminate income reporting groups. As a first step, we will explore interactions among the current model variables to see if separate correlates of "no information" and "partial information" respondents emerge.

Additionally, we illustrated in this and previous analyses (Pleis and Dahlhamer, 2003) the various associations between family respondent characteristics and income reporting. Since total family income is a composite measure involving amounts from multiple sources across multiple family members, we will explore the effects of family-level socio-demographics on income detail reporting. Here again, these measures may aid in further differentiating income reporting outcomes, allowing for more targeted design solutions.

Finally, and consistent with the idea that our model is misspecified, there is a strong possibility that income nonresponse is related to income itself (nonignorable nonresponse). If so, data adjustment procedures, including imputation, become more limited and complex (Little and Rubin, 1987). To determine if nonignorable nonresponse is present, future analyses will include social contextual proxies of family income. Among the measures to be culled from U.S. Census Bureau tract level data are median household income and median housing value.

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TABLE 1: ORDINAL LOGISTIC REGRESSION RESULTS FOR TYPE OF INCOME RESPONSE PROVIDED BY FAMILY RESPONDENTS (at least 18 years of age)

CHARACTERISTIC	ODDS RATIO[δ]	99% CONFIDENCE INTERVAL
Family Respondent Characteristics		
RACE / HISPANIC ORIGIN[Φ]:		
Hispanic	1.04	(0.93, 1.15)
Non-Hispanic white[Ψ]	1.00	-
Non-Hispanic black	0.95	(0.85, 1.06)
Non-Hispanic American Indian / Alaska Native	1.30	(0.90, 1.87)
Non Hispanic Asian or Other Pacific Islander	1.17	(0.98, 1.40)
Non-Hispanic multiple race	1.62	(1.13, 2.32)
SEX:		
Male	1.23	(1.17, 1.30)
Female[Ψ]	1.00	-
EDUCATION[Φ]:		
Less than high school[Ψ]	1.00	-
High school	0.93	(0.86, 1.01)
GED[γ]	1.05	(0.87, 1.26)
Some college	1.17	(1.07, 1.28)
AA degree	1.25	(1.12, 1.40)
Bachelors degree or higher	1.20	(1.09, 1.32)
CURRENT WORK STATUS[Φ]:		
Working (pay)	1.06	(0.97, 1.17)
Working (non-pay)	1.16	(0.85, 1.59)
Not working[Ψ]	1.00	-
WORKED DURING PAST YEAR?[Φ]:		
Yes	1.47	(1.33, 1.62)
No[Ψ]	1.00	-
BORN IN THE UNITED STATES?[Φ]:		
Yes	1.10	(1.00, 1.21)
No[Ψ]	1.00	-
MARITAL STATUS[Φ]:		
Married[Ψ]	1.00	-
Widowed	0.66	(0.59, 0.74)
Divorced	0.74	(0.67, 0.83)
Separated	0.66	(0.55, 0.78)
Never married	0.60	(0.54, 0.67)
Cohabiting	0.89	(0.78, 1.02)
AGE:		
18 - 24 years	1.69	(1.42, 2.00)
25 - 54 years	1.80	(1.59, 2.05)
55 - 64 years	1.48	(1.31, 1.68)
65 - 74 years	1.18	(1.05, 1.32)
75+ years[Ψ]	1.00	-
CURRENT HEALTH STATUS[Φ]:		
Excellent	0.88	(0.74, 1.04)
Very good	0.90	(0.76, 1.06)
Good	0.88	(0.75, 1.03)
Fair	0.94	(0.81, 1.10)
Poor[Ψ]	1.00	-
HEALTH CONDITION CAUSES LIMITATION IN ACTIVITY:		
Yes	1.14	(1.05, 1.24)
No[Ψ]	1.00	-

TABLE 1: ORDINAL LOGISTIC REGRESSION RESULTS FOR TYPE OF INCOME RESPONSE PROVIDED BY FAMILY RESPONDENTS (at least 18 years of age)

CHARACTERISTIC	ODDS RATIO[δ]	99% CONFIDENCE INTERVAL
Family/Household Characteristics		
NUMBER OF INCOME SOURCES[Φ]:		
None[Ψ]	1.00	-
1 source	1.21	(0.96, 1.54)
2 sources	1.59	(1.25, 2.02)
3+ sources	1.90	(1.48, 2.43)
HOUSING STATUS[Φ]:		
Own	0.87	(0.80, 0.94)
Rent[Ψ]	1.00	-
Other	1.07	(0.87, 1.30)
CHILDREN IN FAMILY?:		
Yes	1.17	(1.09, 1.25)
No[Ψ]	1.00	-
NUMBER OF ADULTS IN FAMILY:		
1 adult	2.45	(2.19, 2.74)
2 adults	1.36	(1.26, 1.47)
3+ adults[Ψ]	1.00	-
MULTIPLE FAMILY HOUSEHOLD?:		
Yes	1.19	(0.96, 1.47)
No[Ψ]	1.00	-
Geographic Characteristics		
URBAN / RURAL RESIDENCE:		
Urban	1.04	(0.93, 1.16)
Rural[Ψ]	1.00	-
METROPOLITAN STATISTICAL AREA (MSA)[ζ] STATUS:		
MSA - Central City	0.88	(0.73, 1.04)
MSA - not in Central City	0.88	(0.75, 1.03)
Non-MSA[Ψ]	1.00	-
REGION OF COUNTRY:		
Northeast	1.02	(0.88, 1.17)
Midwest	0.98	(0.84, 1.14)
South	1.20	(1.04, 1.38)
West[Ψ]	1.00	-

[δ] An odds ratio greater than 1.0 indicates providing more detailed income information than the reference category and an odds ratio less than 1.0 indicates providing less detailed income information than the reference category.
[Φ] These variables included an unknown category which was excluded from the analysis.
[Ψ] Reference category for the odds ratio (OR = 1.00)
[γ] General Educational Development high school equivalency diploma.
[ζ] Metropolitan Statistical Area; a measure of population density as defined by the U.S. Census Bureau (http://www.census.gov).

Data source: National Health Interview Survey (NHIS), 2001 - 2002