

Partials and Break-offs in the National Health Interview Survey, 2002¹

Barbara J. Stussman, Beth L. Taylor, and Howard Riddick

National Center for Health Statistics, Centers for Disease Control and Prevention
3311 Toledo Rd., Hyattsville, MD 20782/bjs6@cdc.gov/bft8@cdc.gov/hcr8@cdc.gov

Abstract

Research on nonresponse in surveys has largely focused on how nonrespondents differ from respondents, item nonresponse, and the use of incentives to increase response rates. Partially completed interviews and break-offs have not been studied in-depth. This dimension of nonresponse, between a hard refusal and complete participation, is of particular importance to the National Health Interview Survey (NHIS). The NHIS is a nationally representative annual household survey of health, often lasting over an hour and often involving two or more respondents. Because of the modular nature of the NHIS, partials and break-offs often result in whole subject matter sections and supplements not being completed. This paper will explore reasons for partials and break-offs in the 2002 NHIS, using quantitative and qualitative data collected from NHIS interviewers. Exploring reasons for partials and break-offs in the NHIS will enhance the development of strategies for reducing nonresponse in similar surveys.

Introduction

The decline in completion rates for Federal surveys has been a major concern for Federal statistical agencies (Atrostic, et al., 2001). A variety of reasons for refusals in Federal surveys have been explored. Harris-Kojetin and Tucker (1999) posited that unemployment and inflation rates affected the refusal rate of the Current Population Survey, indicating that respondents' political and economic positions can relate to refusal rates. Groves and Couper (1996) state that the decision to cooperate or refuse is shaped in large part by the interactions between householders and interviewers, such that interviewers can act to change the tendency of a potential respondent to participate.

Groves and Couper (1998) go on to describe a wide range of issues related to nonresponse, including the influence of household characteristics, environmental issues, interviewer characteristics, and interviewer/householder interaction on survey cooperation. Other possible reasons for refusals in Federal surveys include a busy public and mistrust for the government on the part of some respondents.

An interview is a "partial" when all modules are not completed. Partials can be due to many reasons, such as the unavailability of a needed respondent or the interviewer running out of time. One reason for a partial is a "break-off", which occurs when a respondent stops the interview in-progress before completion. The partial rate is the percent of all acceptable interviews that are not complete, meaning that they count towards the completion rate. Partials that are not far enough along in the interview (not reaching the educational attainment variable in the Family Socio-demographic section), known as insufficient partials, are included in the refusal rate. Reasons for partially completed interviews and break-offs, however, have not been studied as thoroughly as overall nonresponse. Because of increases in partially completed interviews in the NHIS in the late 1990's, questions for interviewers were added in the NHIS in 2000 to provide more information about reasons for partial interviews.

Methodology

Data Source:

¹ Paper presented at the 2003 Federal Committee on Statistical Methodology Research Conference, Arlington, Virginia, November.

The NHIS is conducted by the Census Bureau for the National Center for Health Statistics, part of the Centers for Disease Control and Prevention. The NHIS is a nationally representative annual household survey of general health of the civilian, non-institutionalized household population of the United States. The NHIS is comprised of four major modules: the Household, Family, Sample Child, and Sample Adult questionnaires. Each of these modules is made up of various smaller sections. The Household Composition module collects basic demographic information on members of the household through a Household Respondent. Through a knowledgeable adult in the family, the Family Module collects general health information. From each family, one Sample Adult and one Sample Child (if applicable) are selected randomly, and health information is collected on each module from the Sample Adult (self-reported) and Sample Child respondents. Supplemental modules that are placed at the end of a major module or interspersed in the survey are added on a yearly basis. The NHIS often lasts for more than an hour, and involves two or more respondents in 40 percent of interviews.

This study is based on information from two questions in a section of the NHIS where interviewers answer questions about the interview

. Starting in 2000, questions were added to the survey that ask about reasons for partials and break-offs. Data from the 2002 NHIS were analyzed for this study because they were the most recent available. The first question (PARTIAL variable) asks, “*Indicate the main reason why the case cannot be completed*” and provides the following response categories: (1) Break-off/Respondent terminated interview, (2) Sample Adult refused or unavailable, (3) Sample Child respondent refused or unavailable, (4) No one home, repeated calls, (5) Language problem, (6) Other: Specify. The second question (BREAKOFF variable) is asked for responses of 1,2,3 to the PARTIAL variable, and asks, “*Indicate the main reason why the respondent terminated the interview*”. The following categories are provided: (1) Questions too personal, (2) Interview too long, (3) Respondent didn’t have time to complete, (4) Respondent didn’t feel well, (5) Abrupt end, respondent didn’t give reason, (6) Other: Specify.

Analysis:

The goal of the analysis is to describe the occurrence of partials and break-offs. There are two sources of data: the pre-defined categories (quantitative) and the textual data typed into the other specify categories (qualitative). Although the pre-defined categories make up most of the data (91 percent of the PARTIAL variable and 73 percent of the BREAKOFF variable), they may be too general to get a good picture as to what is actually taking place in the field.

The quantitative analysis was carried out using SAS software. In addition to calculation of overall response rates for 2002, response rates for completed and partially completed interviews were calculated based on whether the Household Respondent and Sample Adult was the same person. For partially completed interviews, frequencies of PARTIAL and BREAKOFF variables, as well as their accompanying “Other: specify” categories, were calculated.

Open-ended responses from approximately 2000 cases were analyzed using the constant comparative method (Strauss and Corbin, 1990). The constant comparative method is the process of generating conceptual categories from uncategorized data. This involves comparing each piece of data so that similar pieces of data are labeled and grouped to form categories. Every new piece of data is then compared to this categorical structure, and the structure is reconstructed in an iterative manner until no new piece of data challenges its ability to account for all pieces of data.

Results

Response and Partial Rates in the NHIS:

Tables 1, 2, and 3 represent the findings based on the pre-existing categories. Approximately 1 in 6 NHIS interviews were partial completions in 2002; this percent was consistent over four quarters of data (Table 1).

Table 1: Household Response Rates and Partial Rates, 2002 NHIS

<i>Quarter (sample size=36,745)</i>	<i>Response Rate</i>	<i>Partial Rate</i>
Quarter 1	90.1%	17.2%
Quarter 2	90.4%	15.6%
Quarter 3	91.0%	16.2%
Quarter 4	89.7%	16.6%

Table 2: Percent of NHIS Interviews in which the Household Respondent and Sample Adult Respondent were the Same or Different By Outcome of Interview, 2002 NHIS

<i>Outcome of Interview (sample size=36,745)</i>	<i>HH Resp. and SA Same</i>	<i>HH Resp. and SA Different</i>	<i>Total</i>
Completed interview	69.0%	31.0%	100%
Partial interview	12.0%	88.0%	100%

Households where the Household Respondent was not the Sample Adult accounted for only 31 percent of completed interviews versus 88 percent of partial interviews (Table 2). Clearly, the need to interview a second respondent is a major factor in interviews not being complete.

Reasons for Partial:

Table 3: Reasons Given By Interviewers for Partial, 2002 NHIS

<i>Reason (sample size=6,560)</i>	<i>Percent</i>
Break-off/Respondent terminated interview	33.4%
Sample Adult refused or unavailable	51.6%
Sample Child respondent refused or unavailable	2.1%
No one home, repeated calls	2.9%
Language problem	1.2%
Other	8.9%

Analyses of the pre-existing categories reveal that more than half (52 percent) of all partials are due to the Sample Adult respondent not finishing the interview (Table 3). One-third of partial cases fell into the “Break-off/Respondent terminated interview” category, and 9 percent ended-up in the “Other: specify” category. The categories are somewhat vague and only one category can be chosen, even if multiple reasons for partials apply. Therefore, it is unclear whether the pre-existing categories are capturing a true picture of partial interviews in the field.

Tables 4 and 6 show data from the open-ended responses. Table 4 shows the most common responses listed in the “Other: specify” category for the PARTIAL variable.

Table 4: Other Specify Categories in PARTIAL Variable, 2002 NHIS

<i>PARTIAL – Other Specify (sample size=519)</i>	<i>Number</i>
Second family in household did not respond	118
Instrument problem	75
Respondent busy	57
Respondent not physically able	55
Respondent unavailable or out of town	38
Immunization section incomplete	34
No reason given	27
Respondent does not trust government	24
Another relative did not allow respondent to participate	17
Interviewer ran out of time	17
Miscellaneous	57

These are cases for which the interviewer did not select any of the pre-defined categories. A frequent number of these cases are not complete because the interviewer did not finish with the additional family or roommate. Instrument error is another common reason in the “Other: specify” category. The respondent was busy, not physically able to finish the interview, or unavailable in other cases.

Reasons for Break-offs:

Table 5: Reasons for Break-offs, 2002 NHIS

<i>Reason (sample size=5,713)</i>	<i>Percent</i>
Questions too personal	17.9%
Interview too long	20.1%
Respondent didn’t have time to complete	22.5%
Respondent didn’t feel well	3.1%
Abrupt end, respondent didn’t give reason	9.2%
Other	27.3%

Table 5 shows data from the pre-existing categories of the BREAKOFF variable. It shows that “Questions too personal”, “Interview too long”, and “Respondent didn’t have time to complete” made up 60 percent of the responses, split nearly evenly among the three categories. An additional 27 percent fell into the “Other: specify” category. Because the pre-existing categories are not very specific, analysis of the “Other: specify” responses may provide more detail that can be used to expand the precodes in subsequent surveys.

Table 6: Other Specify Categories in BREAKOFF variable, 2002 NHIS

<i>BREAKOFF – Other Specify (sample size=1,546)</i>	<i>Number</i>
Respondent unavailable	578
Respondent out of town	206
No reason given	176
Respondent does not trust government	165
Respondent busy	100
Another relative did not allow respondent to participate	79
Respondent not physically able	70
Respondent just did not want to participate	56
Respondent spoke another language and did not	

understand English very well	31
Instrument problem	25
Interviewer ran out of time	12
Miscellaneous	48

Table 6 shows the breakdown of the 27 percent of cases that were not captured in the pre-defined categories under the BREAKOFF variable. Frequently, the interviews were incomplete because the respondent was either unavailable or out of town. It appears from this and the precoded data that interviewers are facing an extremely busy public, which spends a great deal of time away from home. Additional reasons for breakoffs include mistrust of the Federal government, the respondent's spouse, parent, or child counseling them not to participate, instrument problems, and the interviewer running out of time.

Conclusions

Chiu, Riddick, and Hardy (2001) found that "late" or "difficult" interviews are more likely than non-late/difficult ones to be partially completed. Our finding that a substantial group of respondents are just difficult to reach is consistent with this report. They are either out of town or very rarely at home due to work or social occasions. This begs the question - what can we do to catch this busy group of people? For example, perhaps interviews can be performed at the respondent's workplace or a location other than home. Also, it may make sense to expand the use of telephone interviews, particularly for respondents who are away on business trips, or who may have more time to interview over the phone than in person at home.

Another interesting finding is that besides being too busy or unavailable, or physically or linguistically unable to participate, some respondents refuse to participate due to a mistrust of the Federal government. Adding this category to the precodes will give more information about whether or not this is a common reason for lack of participation. If so, strategies should be developed to address this. Interviewers should be given tools such as public relations materials to demonstrate how the NHIS helps the public. Obviously, the issue of completion with a respondent who stops the interview is very different from obtaining an interview from a respondent who has not participated at all. Both of these situations should be addressed in interviewer training.

Methodologically, this research demonstrates that the analysis of textual data can provide valuable information to redesign precoded questions. By adding additional categories to the precoded questions, we will learn if the categories that emerged from the "Other: specify" are common. By using the open-ended responses to redesign the questions, we will likely gain a more complete and detailed account of reasons for partials and break-offs in the future.

Next Steps

The next step is to redesign the questions so that they more closely match what happens in the field. This redesign is targeted for the 2004 NHIS. Also beginning in 2004, the questions about reasons for partials and break-offs will be programmed on a family rather than household level, thereby eliminating the problem of partially completed cases being due to additional families not being available before closeout. Further analysis should focus on demographic characteristics of partial respondents as well as a more thorough analysis of the open-ended responses. For example, the "unavailable" category will be further broken down to pinpoint exact reasons why respondents are not available.

Finally, we should provide feedback to interviewers and provide training tools to help them combat these obstacles. Purdon, et al., (1999) separated factors that interviewers can control (e.g., time of interview attempt) from those that are out of the interviewer's control (e.g., seasonal effects). Focusing on these controllable factors in interviewer training, in conjunction with changes in field procedures, will help improve the overall quality of NHIS data.

References

- Atrostic, B.K., Bates, N., Burt, G., and Silberstein, A. (2001). Nonresponse in U.S. Government Household Surveys: Consistent Measures, Recent Trends, and New Insights. *Journal of Official Statistics*, 17(2), 209-226.
- Chiu, P., H. Riddick, A. Hardy, A Comparison of Characteristics Between Late/Difficult and Non-Late/Difficult Interviews in the National Health Interview Survey, 2001 Proceedings of the Section on

- Survey Research Methods [CD-ROM], Alexandria, VA: American Statistical Association.
- Couper, M.P. and Groves, R. (1990). An Exploration of Nonresponse in the 1990 National Election Study. Paper presented at the International Workshop on Household Survey Nonresponse, Helsinki, Finland.
- Groves, R.M. and Couper, M.P. (1996). Contact-Level Influences on Cooperation in Face-to-Face Surveys. *Journal of Official Statistics*, 12(1), 63-83.
- Groves, R.M. and Couper, M.P. (1998). *Nonresponse in Household Interview Surveys*. New York: John Wiley and Sons.
- Harris-Kojetin, B. and Tucker, C. (1999). Exploring the Relation of Economic and Political Conditions with Refusal Rates to a Government Survey. *Journal of Official Statistics*, 15(2), 167-184.
- Purdon, S., Campanelli, S., and Sturgis, P. (1999). Interviewers' Calling Strategies on Face-to-Face Interview Surveys. *Journal of Official Statistics*, 15(2), 199-216.
- Strauss, A. and Corbin, J. (1990). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Newbury Park: Sage Publications.