Applied Research on the Conduct of Surveys of Adolescent Health Behaviors and Characteristics

[October, 1990 - May, 1991]

The University of Michigan

Graham Kalton
Charles Cannell
Donald Camburn
Lois Oksenberg
Lisa Holland

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Submitted to:
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August, 1991
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This report summarizes research conducted by the University of Michigan's School of Public Health and Survey Research Center, working in conjunction with the National Center for Health Statistics (NCHS) and the Division of Adolescent and School Health (DASH) of the Center for Chronic Disease Prevention and Health Promotion (CCDPHP), to develop and test instruments and techniques for collecting survey data on the major risk behaviors that may affect the health of youth. This report covers the project period from October, 1990 through May, 1991, and describes the major research activities conducted under the Cooperative agreement entitled Applied Research on the Conduct of Surveys of Adolescent Health Behaviors and Characteristics. The goal of this research project is to provide NCHS and CCDPHP with survey procedures that will generate data on youth health risk behaviors with a high response rate and low response bias.

One major focus of the research described in this final report was to develop and test techniques for administering the Youth Risk Behavior Surveillance (YRBS) system questionnaire, or YRBS, as a supplement to the 1992 National Health Interview Survey (NHIS) for NCHS. In its original form, the YRBS questionnaire, which asks about the major health risk behaviors that may affect youth, has been administered to thousands of high school age youth (grades 9 through 12) during mass administrations in their schools. In the NHIS interview, respondents 12-21 years old will be asked these questions during an interview conducted in their own home. In addition, the age range of respondents will be somewhat lower than in the school based administrations, and the NHIS sample will include out-of-school youth (and, therefore, include high school drop-outs).

The health threats covered in the YRBS questionnaire include behaviors that result in intentional or unintentional injuries, drug and alcohol use, tobacco use, sexual behaviors that result in sexually transmitted diseases or unintended pregnancies, physical activity, and dietary behaviors and disorders. These general topics demonstrate the highly sensitive nature of the survey and the danger that respondents may not report honestly. In fact, some of the YRBS questions ask respondents to report information that is not only threatening, but illegal. The problems of potential response bias are enhanced since this questionnaire is to be administered in the respondent's own home, where the proximity of parents and other household members may influence respondents' answers.

Because of these issues, much of our work centered on generating procedures to insure respondents of privacy to answer the questions and persuade them that parents or others will never know their answers. The efforts employed to investigate the feasibility of potential interviewing modes included group interviews conducted with both youth and parents, individual interviews that probed the feasibility of using alternative modes of questionnaire administration, and a series of field trials in which YRBS interviews, including a respondent debriefing questionnaire, were administered in respondents' homes. Participants in these various interviews ranged from 12 to 21 years old, and included males and females, and youth from several ethnic groups.

A second major objective of this research was to identify sources of response error in the YRBS instrument and make recommendations to minimize these errors. The types of
response errors investigated included comprehension and recall problems, language difficulties, and coding problems by respondents. The methods employed to explore these cognitive issues included group interviews, individual laboratory interviews, and debriefing interviews conducted during field pretests. The research on cognitive issues progressed from group interviews to individual interviews to explore the basic cognitive problems associated with the instrument being administered to a young population with a wide range of cognitive skills.

Specifically, these research activities have attempted to address...

- the ability of youth to understand and process the complex questions and language of the YRBS
- the effects of asking sensitive questions of youth in a household setting on response validity
- the effect of variability in reading ability among youth on response validity
- problems attendant to obtaining parental consent
- alternative solutions to the privacy concerns of youths
- the use of alternative modes of data collection
- the use of remuneration to increase motivation and participation

Major Recommendations

Across all of the research activities outlined above, more than 230 youth have participated in interviews about the YRBS questionnaire and procedures, with most interviews incorporating a detailed debriefing session. Although this report covers many topics and areas of research, its major recommendations can be summarized in three main areas:

- Because of variability in question comprehension and recall, the YRBS questionnaire should be substantially revised in order to ease the cognitive burden on young respondents and to decrease response errors (see Parts II and III);

- To solve privacy and reading variability problems, it is recommended that the YRBS supplement to the 1992 NHIS be administered using portable audio cassette tape players with no written questionnaire (Part IV);

- In order to potentially improve response quality and to increase respondent participation rates, it is recommended that participants in the YRBS supplemental interview be paid, and that such payment be linked with the effort they make as respondents. The best available evidence indicates that $20 is preferred over other forms of remuneration (Part V).

Collaborative Efforts

A key element of the research conducted as part of this Cooperative Agreement has been the regular collaboration between the University of Michigan and the National Center for Health Statistics. There have been several key meetings, discussions, and presentations that
have occurred as a direct consequence of this collaborative effort. These include meetings among personnel from NCHS, DASH, The University of Michigan, and Census staff. These meetings have occurred at frequent and regular intervals during the period between October, 1990 and May, 1991. In addition, Charles Cannell and Donald Camburn have attended meetings at the National Center for Health Statistics offices in Hyattsville, Maryland, to participate in discussions between NCHS and DASH.

Further evidence of the extent of the collaboration between NCHS and the University of Michigan is provided by the several presentations at professional meetings that have been jointly written by NCHS and University of Michigan personnel. These include:

- *The Use of Audio Tapes and Written Questionnaires to Ask Sensitive Questions During Household Interviews*, Donald Camburn (UM) and Marcie Cynamon (NCHS). Presented at a joint session of the National Field Directors and National Field Technologies Conference in San Diego, California, in May, 1991.


Additionally, papers have been presented by Charles Cannell (co-authored by Donald Camburn), one to the executive group of NCHS, and the second to a major public health conference:


All three of these papers have reported results of the research conducted under this cooperative agreement.

**Format of the Final Report**

This report begins with a review of the major research activities conducted during the course of this research (Part I). The research activities described in Part I provide the data and information used to formulate the recommendations contained in Parts II through V.

Part II describes the theoretical approach to response formulation that guided this research. Part III reviews specific recommendations on the YRBS questionnaire, and a revised questionnaire that incorporates these suggestions is included as Appendix A. The portion of the research that focussed on mode of administration, questionnaire format, and interviewer training is reported in Part IV. Finally, in Part V, the subject of respondent payments is reviewed.

¹ This paper will be published in the conference proceedings (forthcoming).
Part I

Research Procedures

Overview

The research procedures employed evolved across multiple stages, with each stage feeding results and information into the next stage of development (discussed in greater detail below). The first efforts highlighted meetings with persons from NCHS and CDC in order to determine the specific aim of the research agenda. Following an initial set of meetings and other communications, the initial group discussions were held. As these group interviews progressed, the issues that were uncovered were used to set the agenda for subsequent group discussions with additional youth, and with parents.

The information gathered during group interviews was used to develop the agenda for two types of individual interviews that followed during the next stage. One of these types of individual interviews, the In-Depth sessions, focussed on the content of the questionnaire and problems of comprehension and response error. The second type of individual interview, the Audio Tape and Written Questionnaire sessions, focussed more specifically on mode preferences among youth.

The results of the group interviews (both with youth and with parents) and the individual interview stages were evaluated, and revised study procedures were developed. These modified procedures and documents were then field tested by conducting YRBS-type interviews in the homes of youth using full study procedures.

The final stage of the research further refined study procedures and questions and these were in turn used to administer the YRBS questionnaire to youth from the Chicago and Detroit areas who were selected from households participating in the 1991 NHIS. These youth were selected from HIS households by Census Field Representatives using selection parameters similar to those proposed for use in the 1992 NHIS/YRBS supplement.

The following sections describe in greater detail the specific content of each of the stages of the research, including group interviews, individual interviews, field trial interviews, and pretest interviews.

Group interviews

Group interviews were conducted with youth ages 12 to 20 and parents of similarly aged youth. These meetings were held in conference rooms located in public facilities in Detroit or in laboratory facilities in Ann Arbor. In all, seven youth and two parent group

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1 Sections of Part II are excerpted from Innovative Pre-Testing Methods, a paper by Lisa Holland and Gordon Willis presented at a joint session of the National Field Directors and National Field Technologies Conference in San Diego during May, 1991.
sessions were conducted. Altogether 57 youth and 21 parents participated in these sessions.\(^1\) Table I-1 shows the distribution of participants in youth group interviews within age, gender and ethnic strata. Group interview participants were paid $20 for participating in a group discussion and signed parental consent was obtained for minor children, along with the signed consent of the youth.

Table I-1
Distribution of Group Interview Participants

<table>
<thead>
<tr>
<th>Group</th>
<th>12-14 Years Old</th>
<th>15-17 Years Old</th>
<th>18-20 Years Old</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>3</td>
<td>6</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Black</td>
<td>3</td>
<td>10</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>All Males</td>
<td>7</td>
<td>21</td>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>2</td>
<td>6</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Black</td>
<td>2</td>
<td>8</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Hispanic</td>
<td>3</td>
<td>0</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>All Females</td>
<td>7</td>
<td>14</td>
<td>6</td>
<td>27</td>
</tr>
<tr>
<td>Column Total</td>
<td>14</td>
<td>35</td>
<td>8</td>
<td>57</td>
</tr>
</tbody>
</table>

Considerable developmental work was done to create a detailed discussion agenda so that common stimuli were presented to each group, to the extent possible. To set the tone for the discussion, a standard introduction was made to each group. Young people responded positively being told that we wanted their expertise on the survey on topics and their age groups’ experience with these matters; it was essential to convince these groups that their input was important to our work.

Several steps comprised the remaining developmental work necessary for conducting group interviews:

1) the agenda was carefully ordered so as to avoid contamination by prior discussion of related topics;

2) the moderator was familiar enough with the questionnaire to guide the discussion without digression to later topics and to maintain the flow of conversation with minimal reference to the written agenda;

3) the agenda was developed around a common referent, the questionnaire, so that groups shared an experience upon which to base their discussion.
4) the agenda included concrete questions or tasks for the group, since young participants do not respond readily to vague or hypothetical questions.

Participants in group interviews were given a questionnaire for discussion which included a selection of 21 questions representing the different substantive areas covered in the YRBS questionnaire. They were asked to describe how well they thought people their age could answer the questions in terms of comprehension, recall, and willingness to provide truthful information. Due to the sensitive nature of the questions, participants were not asked to answer the questions for themselves. They were encouraged to speak openly about the questions and to offer criticism and suggestions for improvement. This is a distinct use of group interviews for pretesting questions rather than developing new questions.

Audio tapes of the group discussions provided the data for this stage of pretesting; the content of the tapes was summarized by topic area. Because all groups inevitably did not discuss every topic, it was useful to count the number of groups that discussed the topic, and the number of groups that initiated or supported a particular comment, idea, or point of view. These data required subjective evaluation by the researchers. Although comments that occurred in multiple groups merited special attention, the strength of conducting multiple groups is not that they yield quantifiable data, but that they provide an opportunity to examine questions with diverse subsets of the target population. In the developmental stages of this research, some of the most insightful comments came from only one group or even one participant within a group.

Inevitably, group interview data appear rather anecdotal, but the information generated from these groups was useful in learning the problems respondents were experiencing answering the YRBS questions. After the sixth group, it became evident that additional information being propagated from the groups was minimal. The seventh group confirmed this judgment and no further group meetings were held. Two parent group interviews were held in the Detroit area, and while the discussions were productive, it became clear that there were no real worries among parents about participation, the questions, or the provision of privacy that warranted further group discussions.

Individual Interviews

Two types of individual interview sessions were conducted following the completion of the group interviews. In the first individual session type (*In-Depth*), in-depth interviews were conducted during which respondents were given a written questionnaire, were asked to read each question aloud, and were then asked to describe orally (to the interviewer) their thoughts as they formulated an answer to each question. Participants were also asked to describe any problems they have with the questions.

In the second individual interview session type (*Audio Tape and Written Questionnaire*) the YRBS questionnaire was administered to participants in three different modes (see Part IV for further details). Respondents completed the full YRBS questionnaire before discussion occurred. Each respondent experienced all administration modes.
In-Depth Sessions. Within the limited number of selected respondents and time constraints of the research, attempts were made to include youth from a variety of groups in the individual interview sessions. The distribution of In-Depth interview participants within age, gender, and ethnic groups is shown in Table I-2. A total of 21 interviews of this type were conducted.

Table I-2
Distribution of In-Depth Individual Interview Participants

<table>
<thead>
<tr>
<th></th>
<th>12-14 Years Old</th>
<th>15-17 Years Old</th>
<th>18-20 Years Old</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Males</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Black</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>All Males</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td><strong>Females</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Black</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>All Females</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td><strong>Column Total</strong></td>
<td>9</td>
<td>5</td>
<td>7</td>
<td>21</td>
</tr>
</tbody>
</table>

For the In-Depth sessions two forms of the written questionnaire were used that covered two different subsets of the questions. Each respondent used only one of these forms. This design allowed every question to be examined in the In-Depth sessions without making the sessions overly long. The nine sections (each covering different topics) found in the full questionnaire were assigned to the two In-Depth interview forms as shown in Table I-3.
Each In-Depth questionnaire form included at least two sensitive topic areas and the total number of questions in each form was similar. Within each form of the questionnaire, the question order followed that of the school-based YRBS instrument. As shown in Table I-3, In-Depth Form 1 included all the questions on seat belts, fights and weapons, weight, nutrition, and sex, while In-Depth Form 2 included all the questions on smoking, alcohol, drugs, and exercise.

Specific probes were developed for each question covered in the In-Depth sessions. These were given to each interviewer, and the interviewer could then optionally choose to follow up these general questions with more narrowly focussed probing. Each In-Depth session was recorded on audio tape. These audio tapes were reviewed, and written summaries were generated through these reviews of the individual session tapes.

During In-Depth sessions, after the respondent answered each question, the interviewer asked probes relevant to the respondent’s answer. The probes were developed from suggestions made by participants in the group interviews or by the research staff based on prior knowledge and experience studying response error. Structured probes asked for explicit information about how the respondent understood a term or what types of information the respondent included in his or her answers. The unstructured probes asked respondents to describe what they remembered about their reported behaviors or how they arrived at a specific number.

Prior to conducting any individual interviews, group interview data were carefully reviewed, and a set of probes was written for each question in the YRBS questionnaire. One example illustrates the types of probes we used:

<table>
<thead>
<tr>
<th>Question Numbers</th>
<th>Question Topic</th>
<th>Number of Questions</th>
<th>In-Depth Form Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 7</td>
<td>Seat Belts</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>8 - 12</td>
<td>Fights/Weapons</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>13 - 22</td>
<td>Smoking</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>23 - 28</td>
<td>Alcohol</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>29 - 40</td>
<td>Drugs</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>21 - 48</td>
<td>Weight</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>49 - 55</td>
<td>Nutrition</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>56 - 63</td>
<td>Exercise</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>64 - 73</td>
<td>Sex</td>
<td>10</td>
<td>1</td>
</tr>
</tbody>
</table>
During the past 30 days, how many times did you ride in a car or other vehicle driven by someone who had been drinking alcohol?

The following probes were written for this question:

**IF RESPONDENT SAID "0 times":**

Is that because you have never ridden in a car driven by someone who had been drinking, or because you haven't done this in the past 30 days?

**IF RESPONDENT ANSWERED "1 or more times":**

How do you remember this number? Were you thinking of specific incidents?

**ALL RESPONDENTS:**

In answering this question, would you count the times when a person was drinking but wasn't really drunk?

Were you thinking of adults or only people your own age?

What about your parents?

The similar structure of many of the YRBS questions made it possible to include probes on questions not covered in the group discussions. Examples include questions that use the same format to ask about a number of different behaviors, or the same question asked for different reference periods.

In addition to the probes, respondents were encouraged to bring up any other problems or questions that were difficult for them to answer. Encouraging respondents to talk openly about the questions proved interesting in that their comments provided considerable information about how they interpreted the questions. Not all probes were asked of all respondents; interviewers were instructed to choose from a set of probes based on what they felt was most relevant to the respondent's experience. For example, if the respondent reported never having engaged in a particular behavior, a retrieval probe would not be relevant, but a comprehension probe might be. The interviewer was instructed to gain a complete understanding of the respondent's experience, thought processes, and the inferences made when answering the YRBS questions.

These data were analyzed in a manner identical to open-ended question data. Responses to the probes and related comments were aggregated by topic, and frequencies of common responses were tabulated. Although the number of cases was insufficient for rigorous quantitative analyses, trends in responses were examined in order to identify the most problematic sources of response error in the YRBS questionnaire.
Two specific response patterns were examined in order to provide information about each YRBS question. In the first pattern, inconsistent answers to probes across respondents were examined. In the second, consistent answers to probes across respondents was evident, but this content was inconsistent with the goals of the question.

Audio Tape and Written Questionnaire sessions. A total of 29 youth between the ages of 12 and 20 participated in individual Audio Tape and Written Questionnaire sessions. The distribution of these participants within age, gender, and ethnic groups is shown in Table I-4 below.

| Table I-4 |
| Distribution of Audio Tape and Written Questionnaire Interview Participants |
| --- | --- | --- | --- |
| **Males** | **12-14 Years Old** | **15-17 Years Old** | **18-20 Years Old** | **Total** |
| White | 2 | 7 | 1 | 10 |
| Black | 1 | 3 | 1 | 5 |
| Hispanic | 0 | 1 | 0 | 1 |
| All Males | 3 | 11 | 2 | 16 |
| **Females** | **12-14 Years Old** | **15-17 Years Old** | **18-20 Years Old** | **Total** |
| White | 1 | 4 | 1 | 6 |
| Black | 1 | 5 | 0 | 6 |
| Hispanic | 0 | 1 | 0 | 1 |
| All Females | 2 | 10 | 1 | 13 |
| Column Total | 5 | 21 | 3 | 29 |

In each session of this type, the respondent received the full YRBS questionnaire, but it was divided into three segments, each administered in a different mode (Table I-5). In this way each of the 30 respondents was able to experience all three viable modes of administering the YRBS questionnaire:

- **COMBINATION** -- a combination of these two methods during which the respondent followed a written questionnaire while listening to the questions using the headphones (Mode A, Table 1-5).

- **AUDIO TAPE ONLY** -- a version during which respondents listened to a pre-recorded audio tape of the questions played over headphones connected to a portable cassette player (Mode B, Table 1-5);

- **WRITTEN ONLY** -- a written self-administered questionnaire (Mode C, Table 1-5);
Table 1-5
Mode Content of the Audio Tape and Written Questionnaire Session

<table>
<thead>
<tr>
<th>Mode</th>
<th>Tape?</th>
<th>Written Questionnaire</th>
<th>Identification of Answer Categories on Answer Sheet:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode A</td>
<td>YES</td>
<td>YES</td>
<td>Letters Only</td>
</tr>
<tr>
<td>Mode B</td>
<td>YES</td>
<td>NO</td>
<td>Letters Plus Description of Categories</td>
</tr>
<tr>
<td>Mode C</td>
<td>NO</td>
<td>YES</td>
<td>Letters Only</td>
</tr>
</tbody>
</table>

After completing all 73 of the YRBS questions, respondents were asked to rate and discuss each of the three administration modes and to express a preference. Each mode of administration was also individually timed. Although all respondents were given the questions in the same order, the order in which the three modes was presented to respondents varied. There are six ways the three modes can be ordered in a session, corresponding to the six procedures shown in Table 1-6.

Table 1-6
Design of Audio Tape and Written Questionnaire Sessions

<table>
<thead>
<tr>
<th>Procedure</th>
<th>QUESTIONNAIRE SEGMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I</td>
</tr>
<tr>
<td>1</td>
<td>Mode A</td>
</tr>
<tr>
<td>2</td>
<td>Mode B</td>
</tr>
<tr>
<td>3</td>
<td>Mode C</td>
</tr>
<tr>
<td>4</td>
<td>Mode A</td>
</tr>
<tr>
<td>5</td>
<td>Mode B</td>
</tr>
<tr>
<td>6</td>
<td>Mode C</td>
</tr>
</tbody>
</table>

Both male and female voices were used to read the taped questions. Half of the respondents in each procedure heard a male voice reading questions for the first topic on the tape, a female voice reading questions for the second topic on the tape, and so on. For the other half of the respondents, the order of the male and female voices was reversed. This allowed a determination of the effects of the gender of the recorded voice.

Test Interviews

Field Trial Stage. During the Field Trial stage, 53 youth were recruited from the Detroit and Ann Arbor areas and were interviewed in their own homes. The distribution of Field Trial respondents within age, gender, and ethnic groups is shown in Table 1-7 below.
Table 1-7
Distribution of Field Trial Participants

<table>
<thead>
<tr>
<th>Group</th>
<th>12-14 Years Old</th>
<th>15-17 Years Old</th>
<th>18-20 Years Old</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>7</td>
<td>9</td>
<td>8</td>
<td>24</td>
</tr>
<tr>
<td>Black</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>All Males</td>
<td>12</td>
<td>12</td>
<td>8</td>
<td>32</td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>8</td>
<td>4</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td>Black</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>All Females</td>
<td>10</td>
<td>5</td>
<td>6</td>
<td>21</td>
</tr>
<tr>
<td>Column Total</td>
<td>22</td>
<td>17</td>
<td>14</td>
<td>53</td>
</tr>
</tbody>
</table>

During the Field Trial interviews, respondents were asked to begin the task of answering the YRBS questions using the COMBINATION mode described above -- that is, using the audio tape and a written questionnaire. After completing eleven questions in this fashion, respondents were instructed (on the audio tape) to stop the tape player. They were then allowed to complete the questionnaire using any one of the three modes (COMBINATION, AUDIO TAPE ONLY, or WRITTEN ONLY).

In order to evaluate the reaction of respondents to the survey task, a debriefing questionnaire was administered by the interviewer (in a traditional face-to-face interviewing mode) after the respondent completed the YRBS questionnaire. Interviewers were asked to record their observations, comments, and respondent activities while the respondent was completing the YRBS questionnaire. Participants at the Field Trial stage were offered their choice of payment for participation: $20, or the portable audio cassette type player used to conduct the field trial interview.

Pretest Stage. During this next stage, 79 youth were recruited from households in Detroit and Chicago that participated in the 1991 National Health Interview Survey (NHIS). After completing the NHIS interview, Census field representatives were instructed to select up to two youth between the ages of 12 and 20 from the household roster. These 79 youth included 37 males and 42 females, as well as 31 youth ages 12 to 14, 19 ages 15 to 17, and 28 ages 18 to 21. If the household contained more than two eligible youth, Census field representatives were instructed to select the youngest and the oldest.

At the conclusion of the NHIS interview, parents of selected youth under 18 were told that an interviewer from SRC would visit the household in order to conduct an interview with
the selected youth. Parents were asked to review the parental consent form and to provide their consent for the youth interview. If consent was given, the Census field representative signed a parental permission affidavit, certifying that permission had been given by the parents for sample youth to participate in the SRC interview. A completed copy of this affidavit was left with the parents. Census field representatives also obtained cursory recontact information for the selected youth, and this information, along with the parental permission affidavit, was forwarded to the Survey Research Center.

SRC interviewers recontacted the selected youth four to eight weeks after the NHIS interview. During the SRC interview, all respondents used the AUDIO TAPE ONLY mode to complete the full YRBS questionnaire; no written questionnaire was employed. As was done during the Field Trials, Pretest interviewers completed an Interviewer Observation Protocol while the youth was listening to the tape. This protocol noted any unusual problems or difficulties encountered in arranging the interview, and also noted problems or questions raised by the youth.

After the respondent had completed the YRBS questionnaire, the interviewer asked a series of questions designed to determine the reaction of the youth to the audio tape. This form included questions about honesty, privacy, accuracy, voice preferences, and other similar questions. Except for this debriefing interview, the SRC Pretest stage approximated the interviewing conditions that were anticipated to be used for the YRBS in the 1992 NHIS at the time: a follow-back interview with youth paid $20 to participate in the interview using the audio tape by itself.
Question Answering Processes

Introduction

In theory, the process a respondent goes through in formulating a response to a survey question can be categorized under four broad theoretical headings: understanding and comprehension of the question; retrieval, processing and coding of information; affective evaluation of retrieved information; and respondent motivation. These issues are particularly important for studies that interview youth, but they apply across the entire spectrum of survey respondents.

Both the sensitivity of the topics and the age of the respondents pose special challenges for the YRBS supplement. Some younger respondents (12 to 14 years old, for example) do not read well enough to adequately comprehend the survey questions. Also, young people are less proficient in handling abstract concepts and are less skilled in using efficient techniques to conduct memory searches and in organizing the retrieved information. Other factors that influence the development of survey questions for youth are related to the variability in terminologies, language, and concepts among ethnic and socio-economic groups.

The recommendations contained in this report were generated by evaluating the YRBS questionnaire and setting in which it is to be administered in terms of the four steps that respondents in every survey must complete satisfactorily if their responses are to be complete and accurate (Figure II-1). In the present research, these issues were examined with particular attention paid to how these steps apply to issues related to youth. This section of the report discusses each of these steps detail, and uses the YRBS questionnaire to provide illustrations of the issues. Detailed discussion of the YRBS questionnaire and suggested revisions can be found in Part III.

Figure II-1

<table>
<thead>
<tr>
<th>STEP</th>
<th>RESPONDENT PROCESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Understanding and Comprehension of the Question</td>
</tr>
<tr>
<td>II</td>
<td>Retrieval, Processing, and Coding of Information from Memory</td>
</tr>
<tr>
<td>III</td>
<td>Affective Evaluation of Information</td>
</tr>
<tr>
<td>IV</td>
<td>Effects of Respondent Motivation</td>
</tr>
<tr>
<td>OUTCOME</td>
<td>Responses Reflect All of the Previous Steps</td>
</tr>
</tbody>
</table>

Step I: Understanding and Comprehension of the Question

The first task of this research was to ascertain whether the respondents and researcher shared the same meaning and interpretation of concepts. Group interviews were used to explore these issues and to identify questions that were not understood in the same terms by all respondents. Subsequent individual interviews permitted greater specification of issues and defined them in greater detail. In the final stages, the findings from the group and individual interviews were incorporated into the procedures used to administer the questionnaire which were then field tested.

The process respondents go through in formulating answers to survey questions begins with their understanding and comprehension of the question. This issue can be broken down into the three general components outlined in Figure II-2.

Figure II-2

<table>
<thead>
<tr>
<th>STEPS I: UNDERSTANDING AND COMPREHENSION OF THE QUESTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Linguistic and Semantic Understanding</td>
</tr>
<tr>
<td>(Vocabulary Used and Complexity of Sentence Structure)</td>
</tr>
<tr>
<td>• Comprehension of Concepts</td>
</tr>
<tr>
<td>• Shared Understanding of Technical Terms</td>
</tr>
</tbody>
</table>

While there are major substantive problems that must guide the design of questions, Step I concerns the broader issue of question interpretation and what is required of the respondent. When more than one plausible interpretation of a question exists, respondents need to consider and evaluate the various possible interpretations. This often means that the respondents must create and answer their own "internal" question in order to decide how to interpret and answer the question as written by the researcher. Unfortunately, there is no guarantee that the internal question created by respondents matches the question as written and intended by the researcher.

Two examples from the YRBS questionnaire illustrate such problems of understanding. One question that caused some respondents particular difficulty was:

_During the past 30 days, on how many days did you have at least one drink of alcohol?_

Respondents reported that they had to reformulate this question, by resolving for themselves the following definitional issues:

1. What does the phrase "at least one drink" include?
2. Should I include the beers I started but only drank half?
3. What do they mean by "alcohol"? Does that include beer and wine?

4. What about wine coolers? Are they alcohol?

In several other YRBS questions the respondent's and the researcher's concepts did not match. For example, in the question "During the past 12 months, how many times were you in a physical fight?", respondents differed in what constituted a physical fight. For many, a physical fight meant kicking, hitting, or punching, while for others, the use of a weapon was necessary for it to be considered a fight. Others used the criterion of whether or not injuries occurred. Many respondents reported that they did not include fights with family members. In responding to this question and indicated that their answer would have changed had they included fights with family members.

Definitional problems also arose on questions that asked about driving after drinking alcohol. When asked during debriefing interviews if, when answering these questions, they were thinking only about people driving when they were drunk, or people driving after having had any alcohol (no matter how much), nearly one out of four respondents said that they were responding only in terms of someone driving while drunk. Clearly then, a substantial minority of youth are answering this question using a meaning not intended by the researchers. Such ambiguity, if left uncorrected, could generate an underestimate of the risk behavior of interest.

These findings demonstrate the need for systematic developmental work and testing during the process of writing survey questions. Such research is necessary in order to create questions that have the same meaning for all respondents, and to insure that the researcher is indeed measuring the intended behavior or attitude.

Step II: Retrieval, Processing, and Coding of Information

The next step for the respondent is retrieving, processing, and coding the information needed in order to answer the question. This is the stage of information processing that includes an assessment by respondents of what information is needed in order to respond accurately, and a determination of what cues or frames of reference are relevant to guide the search process. The retrieval process concludes when the respondent codes the information into the response categories provided in the questionnaire (Figure II-3).
The process of information retrieval can frequently become complex and require considerable effort to produce accurate and complete responses. Respondents may accept the task only provisionally and may provide accurate responses only as long as little effort is required to understand the question and to provide adequate responses. As this suggests, some information may be inaccessible to the respondent either because it was never in memory storage, or because it was accessible at one time but now cannot be retrieved at all or not with the level of accuracy required.

The time lapse between the event, the storage of the information, and the request for recall, is a major influence on the ability of a respondent to recall the event. Closely allied and interacting with the temporal dimension is the salience or importance of the event and its psychological impact at the time retrieval is attempted.

The ability of respondents to report the frequency of events within a time period is a problem that is ubiquitous in survey research and is one that has potentially negative effects. Especially problematic is asking for relatively important or repetitive events and reporting the frequency within a lengthy reference period.

For example, consider the following YRBS question:

_During your life, on about how many days have you had at least one drink of alcohol?_

Our work on this question (in the context of the YRBS survey) showed that 12 to 14 year old respondents had no real problems in calculating an answer to this question, since their lifetime frequency of alcohol consumption was nearly zero. However, older youth reported considerable difficulty in answering this question, since many of these older youth had been drinking regularly for several years. Because of the frequency of the behavior and the length of the recall period, it was simply impossible for them to answer the question with an acceptable degree of accuracy.

When respondents feel that retrieving information is difficult or impossible, they may shift to other retrieval modes. At this point, respondents may make estimates, or they may simply guess. The problem becomes even more serious when the respondent recognizes that, while true recall was expected, an estimate or guess appears to be satisfactory to the interviewer. This encourages the respondent to continue this easier task performance mode in answering subsequent questions, and is a threat to the response validity of the survey questions. The solution for the researcher is to correct survey questions during the development stages when it becomes clear that a question requires respondents to retrieve episodic information at too complex a level.

The problems respondents encounter in retrieving, processing, and coding information are illustrated by the preliminary results of our attempts to obtain some measure of how accurate and truthful respondents were in answering the YRBS questionnaire. At the end of each field interview, respondents were given a self administered, anonymous form that asked them to provide a rating of the accuracy of their responses to specific survey questions, as well as an overall assessment of the accuracy of their responses. The pattern of responses indicates that the questions that asked about behaviors with the highest incidence yielded the
Part II

Question Answering Processes

lowest rating of accuracy (data not shown). Many respondents reported that their answers were simply guesses.

Step III: Affective Evaluation of the Information Retrieved

After respondents have retrieved the information required to answer a survey question through the processes outlined in Steps I and II, they must next evaluate this information in terms of its affective meaning. Reporting this information in responding to a survey question may threaten their self-image, their self-esteem, or may violate social norms (Figure II-4). On the basis of this perception, responses may be censored. If the information is seen as non-threatening it can be reported, but if seen as threatening or as having no particularly positive value to the respondent, the response may be distorted or the information not reported at all.

Figure II-4

<table>
<thead>
<tr>
<th>STEP III: AFFECTIVE EVALUATION OF THE INFORMATION RETRIEVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Evaluation of Information in Terms of Self-Image, Self-Esteem, Social Desirability, and Embarrassment</td>
</tr>
<tr>
<td>• Censoring of Information to Conform to These Precepts</td>
</tr>
<tr>
<td>• Decision on Whether or Not to Report the Information</td>
</tr>
</tbody>
</table>

The perception of respondents that the information required to answer a survey question is in some way threatening or socially undesirable is a barrier to the accuracy of reporting in all surveys. This problem is particularly likely to affect the accuracy of responses by youth about highly personal or even illegal activities such as illegal drug usage, alcohol consumption, or sexual activity. This threat is especially great when youth are asked to report such behaviors in their own homes.

Closely intertwined with the perceived emotional cost of answering a question is that of privacy. For youth, privacy does not include only the time the interviewer was in the home and the youth was answering the questions. At all stages of our research, youth reported that they were concerned that after the interviewer left the house that their parents would quiz them about their answers to the YRBS questions. Many youth reported that because they feared their parents might ask them how they had answered a particularly sensitive question, they would lie in answering the survey -- that is, underreport the behavior -- so that they could give their parents an answer with which the parents would be satisfied.

We were surprised to find that we could not anticipate which YRBS questions were likely to be sensitive. To some youth, smoking is as sensitive a topic to discuss as would be taking cocaine. For others, their consumption of various foods was as threatening to discuss as was their sexual behavior. Conversely the questions which we considered could be especially threatening often were not perceived so by respondents.
Step IV: Respondent Motivation

Steps I, II, and III cover the various activities or behaviors needed to obtain a valid response. Step IV (Respondent Motivation) is more closely related to an attitude, an affect, or an orientation respondents have towards the response task. It is motivation that activates efforts to comprehend the question, to conduct an effective memory search, and to report potentially embarrassing information (Figure II-5). In laboratory and field experiments, psychologists have found that getting a person to commit him/herself to a particular action significantly raises the probability that the activity will be performed.

Figure II-5

<table>
<thead>
<tr>
<th>STEP IV: RESPONDENT MOTIVATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Level of Effort Expended to Maximize Question Comprehension</td>
</tr>
<tr>
<td>• Level of Effort Given to Memory Searches and Cognitive Organization</td>
</tr>
<tr>
<td>• Level of Willingness to Report Potentially Threatening Information</td>
</tr>
</tbody>
</table>

Most respondents will accurately report information that is readily accessible and non-threatening. As tasks become more demanding, however, respondents may not make the effort to comprehend the reporting task adequately, they may not work hard enough to retrieve information from memory and organize it efficiently, and they may not accept even a minimal risk of embarrassment.

One possible way to increase respondent motivation to provide accurate answers to sensitive or threatening questions is to link a monetary reward with the efforts respondents make in completing the survey. Initially we paid respondents $20 for their study participation as a way to increase the overall response rate. However, as group discussions and interviews proceeded it became clear that further efforts were needed to increase the honesty of respondent reports as well, since in these group discussions participants thought that their peers would not report accurate information on such behaviors as sexual activity and drug use. In an attempt to maximize the truthfulness of reports, the $20 respondents were being given was tied to a commitment to be diligent and accurate in reporting their answers. Each respondent signed a form that was an agreement not only to be a respondent in the survey, but to report information as accurately and completely as possible. The Commitment Statement was:

> It is very important that you answer each question accurately so that the research will be useful. To show our thanks we will give you $20 for the time and effort you make to provide accurate information for our research. Will you agree to answer each question as accurately as you can?

> Please sign here to show that you agree to participate and that you agree to give accurate answers.
How powerful the commitment respondents felt to answering the questions as accurately and honestly as possible cannot be assessed. In post interview debriefings it was instructive to note that comments were made that if $20 was given it must be important information to the researcher. Other statements were made by respondents to the effect that if the person accepted the money he/she felt a responsibility to carry out the commitment to report accurately. In response to debriefing questions, a majority of youth equated the payment with the seriousness with which they took the survey, and indicated that they believed respondents who took the survey more seriously would be more likely to respond accurately and truthfully.

Step V: The Response

In the schema of response outlined in this paper, the quality of the response to the survey question is the net result of the effects of the preceding steps. It is probable that the single major risk to the qualities of survey data depends on the positive and negative focus affecting the respondents’ activities in carrying out these steps. Two statements summarize our ideas about the tasks respondents face in answering questions in survey interviews:

1. *The task demand level is the sum of the cognitive demands imposed by the requirements for information retrieval and processing and the affective demands imposed by the threat of the information requested.*

2. *The quality of respondent performance is a function of the difficulty of the task and the level of effort achieved by the respondent.*

Our developmental work has convinced us anew that careful and thoughtful work is required to develop and test survey questions and procedures that achieve their intended objective. This statement applies equally to adult, as well as youth surveys.
Introduction

In the course of our work with the YRBS questionnaire, it was ascertained that young respondents found it difficult to comprehend or accurately answer some of the YRBS questions. Other problems and inconsistencies also exist in the YRBS questionnaire. In order to address these issues, this section of the report examines proposed modifications to the YRBS questionnaire. These recommendations are based on the results of the group, individual, and field interviews that were conducted as part of the research summarized in this report.

The problems that respondents encounter in understanding the YRBS questions, and in retrieving, processing, and coding the required information (Steps I and II from Figure 11-1) are best illustrated by the results of our attempts to obtain some measure of how accurate and truthful respondents were in answering the YRBS questionnaire. At the end of each Field Trial and Pretest interview, respondents were given a self administered, anonymous form that asked them to rate the accuracy of their response to specific survey questions, and to provide an overall assessment of the accuracy of their responses. Respondents were frank in reporting that they were not accurate in their reports to specific questions and to the survey overall. At the same time these youth consistently described their answers as being truthful.

These issues still remain unresolved, despite the fact that some of the YRBS questions have already been modified as the result of previous revisions endorsed by CDC and NCHS earlier this year. These changes include: rearranging the order of administration to maximize the consistency of time referents; reducing the number of answer categories for some questions; deleting questions asking about school-based activities (for example, physical education, team sports, and self-evaluation of success as a student); splitting single questions which in reality contained multiple questions (for example, the question that asks about both chewing tobacco and snuff); and substituting new questions in the series asking about exercise. Also, the descriptive and introductory material between sections of the questionnaire has been extensively modified and appended.2

In order to demonstrate our recommended solutions to outstanding problems we have developed a revised YRBS questionnaire (Appendix).3 This questionnaire incorporates the additional changes outlined in this report that we believe are necessary to solve the cognitive, recall, and other problems still evident in several of the YRBS questions. These further modifications to the YRBS questions fall under three general headings: time references and recall; the level of specificity of the response categories; and other modifications to individual questions generated as a result of our research activities. This report does not discuss every suggested modification to the YRBS questions, rather, it discusses the more general and pervasive issues. The reader is advised to make a careful comparison of Appendix A with
the original YRBS school-based questionnaire for complete specification of these changes. Each of these three areas is discussed in detail below.

**Time References and Recall**

*Age of first experience.* The wording of various YRBS questions presupposes the ability of young respondents to produce exact answers after retrieving detailed and precise information and conducting a systematic memory search. Examples of questions with such problems are those with long time references coupled with detailed response categories. Consider the question: "How old were you when you smoked a whole cigarette for the first time?". While the behavior is clear, recalling within one or two years the exact date of an event that may have occurred several years ago poses great difficulty for respondents. Respondents may not be able to answer such a question in terms of the detailed response categories that have been used previously in the YRBS ("8 years old or younger", "9 or 10 years old", "11 or 12 years old", . . . "17 years or older"). By using broader response categories, it is easier for respondents to report the behavior accurately ("Under 10 years old", "10 to 13 years old", "14 to 16 years old", "17 years or older").

Because of these kinds of considerations, we propose that several YRBS questions be revised to avoid giving the potential negative cue to respondents that whatever they report will be acceptable to the interviewer, no matter how inaccurate it may be. Our suggested revisions to the following question illustrate such problems:

<table>
<thead>
<tr>
<th>Original</th>
<th>Revised Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example i. How old were you when you had your first drink of alcohol other than a few sips?</td>
<td>About how old were you when you had your first drink of alcohol other than a few sips?</td>
</tr>
<tr>
<td>I have never had a drink of alcohol other than a few sips</td>
<td>I have never done this during my life.</td>
</tr>
<tr>
<td>Less than 9 years old</td>
<td>Under 10 years old</td>
</tr>
<tr>
<td>9 or 10 years old</td>
<td>10 to 13 years old</td>
</tr>
<tr>
<td>11 or 12 years old</td>
<td>14 to 16 years old</td>
</tr>
<tr>
<td>13 or 14 years old</td>
<td>17 years or older</td>
</tr>
<tr>
<td>15 or 16 years old</td>
<td></td>
</tr>
<tr>
<td>17 or more years</td>
<td></td>
</tr>
</tbody>
</table>
Our suggested rewording of this question acknowledges to the respondent that estimates are acceptable by adding the additional word "about" at the beginning of the question. Another modification incorporates response categories that recognize difficulty for respondents in estimating the timing of the behavior, yet define categories useful for analytic purposes. In our opinion, such changes will encourage more thoughtful responses.

**Lifetime experience.** To further illustrate this issue, consider the several YRBS questions that ask for the date of the first event or the number of episodes over one's lifetime. Comments in group discussions demonstrate that these may be the most difficult questions in the YRBS questionnaire for respondents. It is unrealistic to expect an accurate response at the level specified the response categories used in the original questions.

For a twelve year old questions that ask about behaviors over a lifetime may be realistic and pose no significant problems, but consider someone 18 to 21 years old who has been drinking regularly for three or four years and had a first drink at age ten or eleven. The questions "How old were you when you had your first drink of alcohol other than a few sips?" and "During your life, on about how many days have you had at least one drink of alcohol?", may be impossible for older youth to answer.

Participants in group interviews reported that they had a considerable amount of trouble recalling the information asked for in the "During your life" questions. In group sessions, a specific question was asked about the "in your life" issue. 75 percent of the groups found the question impossible to answer, citing the length of the reference period as being too long to remember the information correctly. Group interviews with parents of respondent-aged youth also revealed that they thought this reference period was too long for youthful respondents to handle accurately.

In field trial interviews, where the full YRBS questionnaire and a debriefing interview were administered in the respondent's own home, respondents often mentioned that they found these "lifetime" questions difficult to remember and report accurately. When asked what questions they were thinking of as particularly problematic, two questions were mentioned specifically: "During your life, on how many days have you had at least one drink of alcohol?", and "During your life, about how many times have you used marijuana?".

In order to address these sorts of problems for the lifetime behavior questions, we recommend that the response categories be broadened and reduced in number. These changes are illustrated in the following example:
### Original

**Example ii.** During your life, on about how many days have you had at least one drink of alcohol?

- [ ] 0 days
- [ ] 1 or 2 days
- [ ] 3 to 9 days
- [ ] 10 to 19 days
- [ ] 20 to 39 days
- [ ] 40 to 99 days
- [ ] 100 or more days

### Revised Response Categories

- [ ] You have never done this during your life.
- [ ] 1 or 2 days
- [ ] 3 to 20 days
- [ ] 21 to 40 days
- [ ] 41 to 99 days
- [ ] 100 or more days

Broadening the interval covered by each category will make it easier for respondents to classify their responses without attempting to classify their answer into response categories that are unrealistically gradated. The revised response categories inform respondents that approximations are acceptable responses, while the new categories conform to the behavior patterns one would expect to encounter among older youth.

### Level of Specificity of Response Categories

None of the questions or procedures used in the YRBS questionnaire can be expected to produce a precise estimate of behavior. The analyst can, however, only classify respondents into major groups, such as non-users, low, medium, and high users. The fewer the classes, the less likely is misclassification by respondents, and this encourages the respondent to make a genuine effort to report accurately.

The problem of response categories that are too detailed occurs when respondents feel that retrieving information precisely is difficult or impossible, and they shift to other retrieval modes. At this point respondents begin making estimates, or simply guess. The question is answered and the interviewer, not knowing that strict recall was not used, is satisfied with the response. In self administered questionnaires this shift cannot be identified.

The problem becomes more serious when the respondent recognizes that while true recall was expected, an estimate or guess appears to be satisfactory to the interviewer. This
encourages continuing the easier performance task of guessing when answering subsequent questions and is a serious threat to response validity. The solution is for the analyst to recognize in developmental stages when episode retrieval is likely to be too difficult and change the question.

Even if respondents are able to surmount these obstacles, they still may not be able to answer a question accurately. Once the mental processes required to formulate an answer are complete, the respondent still must convey that answer to the researcher by indicating an appropriate response category. The number of response categories contributes to difficulty in retrieval and may lead to inaccurate reporting. Categories must conform to what is realistic for respondents, both in terms of the level of detail they can recall and the ability of respondents to understand the meaning of the response categories. Too many categories, categories that ask for too much detail, and categories that are overly complex all increase the burden on the respondent.

It is necessary to determine whether the analysis requires such fine detail and what level of response error can be tolerated. However, determining that a fine level of response is desired does not automatically guarantee that the responses obtained are reasonable and accurate. To the contrary, using too finely detailed answer categories in conjunction with questions asking for recall over long periods may actually increase response errors. The following example illustrates how overly detailed response categories not only increase respondent burden, but can lead to misclassification of responses by respondents. Consider the question:

<table>
<thead>
<tr>
<th>Example iii.</th>
<th>How often do you wear a seatbelt when riding in a car driven by someone else?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>____ Never</td>
</tr>
<tr>
<td></td>
<td>____ Rarely</td>
</tr>
<tr>
<td></td>
<td>____ Sometimes</td>
</tr>
<tr>
<td></td>
<td>____ Most of the time</td>
</tr>
<tr>
<td></td>
<td>____ Always</td>
</tr>
</tbody>
</table>

In order to determine how respondents classified their answers to such questions, the following series of probes was asked of youth during in-depth interviews:

You answered _______. How many times out of 10 would you say that is?

If a person were to wear a seatbelt 3 times out of 10, what category do you think they should choose? How about if someone wore a seatbelt 5 times out of 10?
As shown in Figure III-1, there is a great deal of overlap between the answer categories in terms of the frequency attached to them by respondents. The range of respondent’s answers for the "Sometimes" category is totally included within the range of respondent’s answers for the "Rarely" category, and "Rarely" also partially overlaps the responses for "Most of the time". Note also that the range of respondent answers for "Sometimes" does not overlap "Most of the time". This problem can be corrected by deleting "Rarely" and using "Sometimes" in this scale.

It is possible that this problem may be related to the age of the respondents, and the word "rarely" may be unfamiliar to youth. As asked, the question provides respondents with a sequence of response options that the analyst has ordered logically to range from the lowest ("Never") to the highest ("Always") frequency. However, young people who may never have completed a survey task may not be familiar with such classifications and they may not correctly assume that the categories are meant to range from the lowest to the highest frequency. Without such an assumption an unfamiliar word, such as rarely, can pose problems for the uninitiated.

<table>
<thead>
<tr>
<th>Response Category</th>
<th>Range of Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rarely</td>
<td>2 - 7 times out of 10</td>
</tr>
<tr>
<td>Sometimes</td>
<td>3 - 5 times out of 10</td>
</tr>
<tr>
<td>Most of the time</td>
<td>5 - 8 times out of 10</td>
</tr>
</tbody>
</table>

We recommend that YRBS questions using these categories be modified and that "Rarely" be deleted as a response option. The revised answer categories are as follows:

<table>
<thead>
<tr>
<th>Revised Response Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example iii. (revised)</td>
</tr>
<tr>
<td>Never</td>
</tr>
<tr>
<td>Sometimes</td>
</tr>
<tr>
<td>Most of the time</td>
</tr>
<tr>
<td>Always</td>
</tr>
</tbody>
</table>

Another example of how respondents can become overburdened is found in group discussions of the answer categories to the question "During the past 12 months, how many times were you in a physical fight?". Participants in group interviews reported that the large number of detailed response categories confused them. They reported that they could not remember exactly how many fights they had been in during the past 12 months. Their answer was, at best, a very crude estimate. The confusion arose when they attempted to mark an answer category that matched their unrefined answer. Respondents could not decide
Part III

Questionnaire Comments

between "2 or 3 times" and "4 or 5" times since their estimates were too crude to permit such a fine distinction.

To solve this problem, we propose modifying the response categories to this question (and in questions with similar problems) in the following manner:

<table>
<thead>
<tr>
<th>Original</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example iv. During the past 12 months, how many times were you in a physical fight?</td>
</tr>
<tr>
<td>0 times</td>
</tr>
<tr>
<td>1 time</td>
</tr>
<tr>
<td>2 or 3 times</td>
</tr>
<tr>
<td>4 or 5 times</td>
</tr>
<tr>
<td>6 or 7 times</td>
</tr>
<tr>
<td>8 or 9 times</td>
</tr>
<tr>
<td>10 or 11 times</td>
</tr>
<tr>
<td>12 or more times</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Revised Response Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>You have not done this during the past 12 months.</td>
</tr>
<tr>
<td>1 time</td>
</tr>
<tr>
<td>2 to 5 times</td>
</tr>
<tr>
<td>6 or more times</td>
</tr>
</tbody>
</table>

The overall number of categories cannot be used as a guide to determine whether the response categories are appropriate. In group discussions of the following question, well over half of the groups concluded that young respondents would not remember the requested information accurately for the response categories provided--this despite the fact that only five categories were used. We propose this and other similar questions, be changed by increasing the range of each response category and decreasing their number:
Part III  Questionnaire Comments

Original

*Example v.* During the past 12 months, about how many times did you ride a motorcycle?

- None
- 1 to 10 times
- 11 to 20 times
- 21 to 39 times
- 40 or more times

Revised Response Categories

- None
- 1 to 10 times
- 11 to 40 times
- 41 or more times

These examples are given to illustrate the wording for questions asking for 12 months estimation and to show the response categories that will present a task that is feasible for the respondent. The answers to the question in *Example v* will also provide the analyst with a useful frequency distribution of ridership. These same principles apply to other questions that ask about even shorter time periods, such as 30 days. Again, for such questions we recommend that the number of categories be reduced, and that the range covered by each category be broadened.

**Modifications to Other Questions**

Several additional proposed changes to the YRBS questionnaire do not fall under any specific heading. Each of these is dealt with individually in the order in which the questions appear in the revised YRBS questionnaire in the Appendix.

**Physical fights.** During group and individual interviews, participants repeatedly cited the original answer categories to the question "The last time you were in a physical fight with whom did you fight?" as being overly complex, confusing, and overlapping. They also reported that because of the length of verbiage in the answer categories, they would be unlikely to wait until all answer categories had been read before marking an answer—they would mark the first answer that fit their own case. The revised response categories (*Example vi*, below) directly answer these problems by (a) shortening the text, (b) simplifying the concept (e.g., changing "total stranger" to "stranger"), and (c) deleting the last two answer categories ("Someone not listed above" and "More than one of the persons listed above").

28
Example vi. The last time you were in a physical fight, with whom did you fight?

- I have never been in a physical fight
- A total stranger
- A friend or someone I know
- A boyfriend, girlfriend or date
- A parent, brother, sister, or other family member
- Someone not listed above
- More than one of the persons listed above

Revised Response Categories

IN ANSWERING THIS QUESTION, PLEASE MARK ALL OF THE ANSWER CATEGORIES THAT APPLY TO YOU

- You have never been in a physical fight
- A stranger
- A boyfriend, girlfriend, or date
- Some other friend or person you know
- A family member

The other change to these response categories adds an instruction to mark all answers that apply (Example vi). In Field Trial and Pretest interviews, respondents marked multiple response categories in answering this question (without marking the "more than one person ..." category) as often as they marked the last category ("More than one person listed above"). This modification will allow respondents to more easily and consistently indicate physical fights that involve multiple people.

Weapons. Respondents had a great deal of trouble with the question that asked about carrying weapons during the past 30 days (Example vii, below). The major change we are recommending to this question (other than adding the word "about") deletes the specific examples "such as a gun, knife, or club". In discussions with young respondents it became evident that the specific examples at the end of this question limited, rather than expanded, the types of weapons respondents considered in answering the question.

The problems respondents had with this question were discovered only when they answered the next question in the sequence, which lists a greater variety of weapons than "gun, knife, or club". Respondents often asked if these other weapons should have been counted when answering the first question. They often modified their answer to the first question when they uncovered the information contained in the second question, and reported they had only included guns, knives, or clubs when answering the first question. The three examples in this question clearly limit the weapons respondents include and, if left unchanged, will cause a serious underestimate of the extent to which youth carry weapons.
Part III

Questionnaire Comments

<table>
<thead>
<tr>
<th>Original</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example vii.</strong> During the past 30 days, on how many days did you carry a weapon, such as a gun, knife, or club?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Revised Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>During the past 30 days, on about how many days did you carry any kind of a weapon?</td>
</tr>
</tbody>
</table>

**Smoking.** The series of questions that asked about smoking behaviors were problematic. In group discussions youth reported the question that asked about "trying smoking during the next 12 months" was difficult to answer due to its speculative nature (which we propose to correct by adding a "not sure" category), and from the implicit skip pattern buried in the response categories in the original question. This implicit skip made answering the question unnecessarily complex. The question asked prior to this in the current YRBS questionnaire sequence determined if the respondent had ever smoked cigarettes in their life, and the question in **Example viii** was designed only to be asked of those who had never smoked. However, using an implicit skip pattern complicates the answer categories.

<table>
<thead>
<tr>
<th>Original</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example viii.</strong> Do you think you will try cigarette smoking during the next 12 months?</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Revised Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you think you will smoke cigarettes during the next 12 months?</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Even after simplifying the inappropriate category, problems still remained. During Field Trial interviews a "does not apply" category was used for people who had already initiated smoking (from the previous question). Despite having this clearly labelled category available ("You have already tried cigarette smoking"), more than one in five respondents who had smoked before in their life chose either the "Yes" or "No" category instead of the does not apply category on the question about smoking during the next year, indicating that the problem cannot simply be solved by adding an "inappropriate" category.
The simplest solution is to have all respondents (smokers and non-smokers alike) answer the question, which can be accomplished by eliminating the word "try". This makes the task much clearer to respondents, yet the sample can still be stratified during analysis to achieve the desired group of respondents. For those who have smoked previously the revised question becomes a cessation question, while for non-smokers the question still measures initiation of the risk behavior.

**Alcohol.** During group discussions and particularly during Field Trial and Pretast interviews, it became apparent that youth were confused about what constituted at least one drink of alcohol. In the first question in the alcohol series, the level that constitutes a drink is set at "more than a few sips." The next question in this sequence resets the level at "at least one drink." Asking young respondents to make fine distinctions such as this on contiguous questions causes unnecessary difficulty. Our recommendation is to reword the first question and set the minimum level at "at least one drink" consistently throughout the alcohol consumption series (Example ix below).

<table>
<thead>
<tr>
<th>Original</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Example ix.</em> How old were you when you had your first drink of alcohol other than a few sips?</td>
</tr>
<tr>
<td>Revised Version</td>
</tr>
<tr>
<td>About how old were you when you had at least one drink of alcohol for the first time?</td>
</tr>
</tbody>
</table>

Youth were also confused about the definition contained in the alcohol consumption question that asks about the number of days in the past thirty that the respondent has had "5 or more drinks of alcohol in a row, that is, within a couple of hours?". In the Field Trial debriefing questionnaire a number of youth cited this question as being difficult to answer. In order to understand this question the respondent must first determine what is meant by this phrase, then keep this definition in mind while calculating a response in terms of the number of days. Our suggested revision simplifies the process by just asking about the number of days that the youth consumed five or more drinks, regardless of the time period in which the drinks were consumed (Example x below).

<table>
<thead>
<tr>
<th>Original</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Example x.</em> During the past 30 days, on how many days did you have 5 or more drinks of alcohol in a row, that is, within a couple of hours?</td>
</tr>
<tr>
<td>Revised Version</td>
</tr>
<tr>
<td>During the past 30 days, on about how many days did you have 5 or more drinks of alcohol?</td>
</tr>
</tbody>
</table>
The last major recommended revision to the alcohol consumption questions stems from the questions that ask about riding in or driving a car after the consumption of alcohol (Example xi below). During the individual interviews it became apparent that many youth were defining the level of alcohol consumption required to meet the term "had been drinking alcohol" as meaning when someone was drunk. To test this more fully, Field Trial respondents were asked what was meant by this term: driving when they were drunk, or driving after having had any alcohol, no matter how much. Three out of four youth answering this probe said they thought the term meant driving when drunk. Clearly this is not the level of consumption intended by these questions. To solve this problem we propose the following modifications to these two questions:

Original

Example xi.
During the past 30 days, how many times did you ride in a car or other vehicle driven by someone who had been drinking alcohol?

During the past 30 days, how many times did you drive a car or other vehicle when you had been drinking alcohol?

Revised Version

During the past 30 days, about how many times did you ride in a car or other vehicle driven by someone who had any alcohol to drink?

During the past 30 days, about how many times did you drive a car or other vehicle after you had any alcohol to drink?

Exercise. During the course of this collaborative project, DASH, NCHS, and SRC personnel have gone to great lengths to revise and improve the series of questions that ask about exercise. For the most part these efforts have produced results, and the highly modified series of questions does appear to be answerable for respondents. However, one major problem still exists. The final question in this series, which asks about the number of days the respondent participated in vigorous physical activity, still remains complex. Youth find the numerous examples given (seven in all) and the complex terms used (such as "other aerobic activities") to be confusing. For the youngest respondents it appears that their cognitive processes may not be sufficiently developed to allow them to keep all the various pieces of the question, such as the time period (7 days), examples, and level ("sweat and breathe hard") simultaneously in mind when attempting to formulate an answer. We recommend that this question be shortened and simplified in the following way:
Sexual behavior. The final major revision to be discussed here is in the series of questions asked of 14 to 21 year old youth about their sexual activity. Two questions in this sequence, asking about birth control, overlap in their content. The first of these asks specifically about the use of a condom during the last time the respondent had sexual intercourse, while the very next question asks the broader issue of the types of birth control used during the last time the respondent had sexual intercourse. The first proposed modification is to eliminate the first of these two questions (asking about condom usage specifically).

The other proposed modification to Example xiii would allow YRBS respondents to mark all answers that apply. As with other similar questions noted above, several youth marked multiple responses to this question, despite not being asked to do so. The proposed changes are as follows (Example xiii, next page):
Example xiii. The last time you had sexual intercourse, did you or your partner use a condom?

The last time you had sexual intercourse, what one method did you or your partner use to prevent pregnancy? (Select only one response)

- I have never had sexual intercourse
- No method was used to prevent pregnancy
- Birth control pills
- Condoms
- Withdrawal
- Some other method
- Not sure

Revised Version

The last time you had sexual intercourse, what methods did you or your partner use to prevent pregnancy?

IN ANSWERING THIS QUESTION, PLEASE MARK ALL OF THE ANSWER CATEGORIES THAT APPLY TO YOU

- You have never had sexual intercourse
- No method was used to prevent pregnancy
- Birth control pills
- Condoms
- Withdrawal
- Some other method
- Not sure
Part IV

Administering the YRBS Questionnaire in a Household Setting

Background

Asking questions on sensitive or threatening topics during any interview is difficult, but the problem is critical in face-to-face household interviews with youth. This is especially true for the YRBS questionnaire since the health behaviors it covers are highly sensitive and there is danger that respondents may not report honestly. In fact, some of the YRBS questions ask respondents to report information that is not only threatening, but illegal. The problems of potential response bias are enhanced since this questionnaire is to be administered in the respondent’s own home. As noted in Part II, respondents must evaluate their answers to survey questions in terms of their affective meaning (Step III, Figure II-4).

Interviews with youth also entail ensuring that the questions can be read and understood by young respondents. As with the issue of privacy, this issue is especially important for the YRBS questionnaire, given that respondents as young as 12 years old will be interviewed.

The research conducted as part of the Cooperative Agreement investigated the potential of using a self-administered questionnaire that is recorded on an audio cassette tape to address the reading ability and privacy issues related to the YRBS interview. Because of these issues, much of the work centered on generating procedures for administering the YRBS questionnaire that addressed both the reading and privacy issues simultaneously.

Our final research efforts focussed on the three modes of administering the YRBS questionnaire that were viewed as being most capable of handling privacy and reading problems:

- **WRITTEN ONLY** -- a written self-administered questionnaire;
- **AUDIO TAPE ONLY** -- a version during which respondents listened to a pre-recorded audio tape of the questions played over headphones connected to a portable cassette player;
- **COMBINATION** -- a combination of these two methods during which the respondent followed a written questionnaire while listening to the questions using the headphones.

1 Part IV comes from *The Use of Audio Tapes and Written Questionnaires to Ask Sensitive Questions during Household Interviews*, a paper by Donald Camburn and Marcie Cynamon presented at the National Field Directors and National Field Technologies Conference in San Diego, California, during May, 1991.
In all three modes respondents marked their responses on an answer sheet that revealed neither the question nor the answer (more will be said about that later).

Several different procedures were used for evaluating the effectiveness of the audio tape mode of questionnaire administration. During the Individual Interview stage of the research, all respondents experienced each of the three alternative modes. During the Field Trial stage, respondents were asked to begin the survey task using the COMBINATION mode. After completing eleven questions in this fashion, respondents were instructed to stop the tape player, and were then allowed to choose any one of the three modes to complete the questionnaire. During the Pretest stage, all respondents used the AUDIO TAPE ONLY mode to complete the full YRBS questionnaire. In total, 161 interviews were conducted over various stages of the mode trials, with over 80 percent of them occurring in the respondent's home. The balance occurred in laboratory-type settings.

At all three stages (Individual interview, Field Trial, and Pretest) a debriefing questionnaire was administered by the interviewer after the respondent completed the YRBS questionnaire that asked the respondents views about various aspects of the survey task. Interviewers were also asked to record their observations, comments, and respondent activities while the respondent was completing the YRBS questionnaire. Other information about the reactions of youth to being asked sensitive questions in their own home was gathered during the group interview sessions.

This section of the final report first discusses various ways that the YRBS questionnaire might be administered in a household setting, and the reasons for and against each alternative mode. The discussion then focusses on the process of creating the audio tape questionnaire and closes with our recommendation that the audio tape questionnaire by itself be used as the mode of administering the YRBS in the 1992 National Health Interview Survey.

Evaluations of Alternative Interviewing Modes

Interviewer Administered Questionnaires

One possible way to conduct these interviews would be to have an interviewer read the questions aloud and have the respondent answer orally. This mode solves the reading problems of young respondents. However, at all stages of this research, and particularly during group discussions, youth reported that this mode of interviewing would result in youth censoring their answers in order to avoid revealing sensitive information about their own risk behaviors. Respondents feared self-disclosure: to parents; to other family members in the household, such as siblings; and to the interviewer as well. While having an interviewer read the questions aloud might be suitable for some topics, it is not suitable for the sensitive topics covered in the YRBS questionnaire.
As an alternative to the interviewer administered mode, the interviewer could read the questions aloud and respondents could mark their answers on an answer sheet, thus keeping the answers to sensitive questions private. However, such an approach does not alleviate the concerns of youth regarding exposure. Participants in group interviews expressed concern about the questions being heard by others in the household (independently of whether or not their actual answers were overheard). More importantly, youth reported anxiety about the potential reactions of interviewers while the youth were answering the YRBS questions.

Neutral site interviews. The use of neutral site interviews was also considered, discussed during group sessions, and rejected as a potential interviewing mode for conducting the YRBS supplement.\textsuperscript{10} Participants in group interviews reported they would be uncomfortable leaving their own home with an interviewer they viewed as a stranger, even if the interviewer were known to be a representative of a government agency. Further, youth reported that they felt their parents would not allow them to be taken from the home to be interviewed.

Written Self-Administered Questionnaires

We evaluated using a written, self-administered questionnaire for asking the YRBS questions. Using a written questionnaire overcomes the fear of auditory exposure thereby allowing respondents to achieve a reasonable expectation of privacy, and it allows respondents time to think at their own pace about their responses before marking an answer category.

<table>
<thead>
<tr>
<th>Questionnaire Segment</th>
<th>Mode of Administration</th>
<th>Mode of Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Audio Tape Only</td>
<td>Written Only</td>
</tr>
<tr>
<td>Segment I</td>
<td>12.2</td>
<td>6.7</td>
</tr>
<tr>
<td>Segment II</td>
<td>11.6</td>
<td>5.7</td>
</tr>
<tr>
<td>Segment III</td>
<td>10.9</td>
<td>6.1</td>
</tr>
<tr>
<td>Mode Average</td>
<td>11.6</td>
<td>6.2</td>
</tr>
<tr>
<td>n</td>
<td>29</td>
<td>29</td>
</tr>
</tbody>
</table>

Table IV-1
Average Length (in Minutes) Of Individual Interviews by Mode of Administration
We found that respondents can complete the survey task faster using the **WRITTEN ONLY** mode than using either the **AUDIO TAPE ONLY** or the **COMBINATION** modes. This was especially true for respondents in the 18-21 year old age range. Indeed, during the first stage of the research, when respondents were asked to complete the YRBS questionnaire using each of the three alternative modes, respondents completed sections of the questionnaire twice as fast using the only the **WRITTEN ONLY** mode than when they used either the **AUDIO TAPE ONLY** or **COMBINATION** modes (Table IV-1).

The **WRITTEN ONLY** mode was popular with the oldest youth for the wrong reason: they liked it because it was faster. When offered a choice of modes during the second stage of the research, 13 out of 14 of respondents 18 to 20 years old chose the **WRITTEN ONLY** mode. During the debriefing sessions they indicated that they made this choice because using the **WRITTEN ONLY** mode was the fastest of the three modes. Some respondents report being overwhelmed by the **COMBINATION** mode, partly because youths can read faster than the questions are read by the speaker on the tape.

Conversely, many of the youngest respondents did not select the **WRITTEN ONLY** mode when offered a choice, and preferred to use either just the **AUDIO TAPE ONLY** or the **COMBINATION** mode. The reasons they cited for making this selection centered around reading and comprehension: they felt that having the questions read to them made it easier for them to understand the questions. Further, when asked which mode was best for respondents with reading difficulties, only two of the 80 youth asked this question chose the **WRITTEN ONLY** mode as the best solution.

Variability in reading skills and comprehension argues against the use of the written, self-administered questionnaire as the mode of administration for the YRBS questionnaire. These problems are exacerbated by the fact that the age range of the YRBS sample will be 12 to 21 and will include school drop-outs.

### Creation of the Audio Tape Mode

#### Preparing the audio tape

During the early stages of this research efforts were made to determine the best procedures to use in making the audio recording of the YRBS questionnaire. Not knowing any better way to proceed, the first audio recordings made of the YRBS questionnaire attempted to follow standard interviewing practice. Each question was read twice at a moderate pace with two second pauses between each reading. All answer categories were read on the tape. Nearly five seconds were left between each question to allow respondents time to ponder their answers. However, this technique proved to be stupefying to the listener after listening to only a very few questions, and efforts were made to shorten the length of the audio tape.

One significant decrease was accomplished by deleting the reading of almost all answer categories from the audio tape and including as much information as possible, given
privacy concerns, on the answer sheet. A second effort to decrease the length of the tape concentrated on the time left silent on the tape between readings of each question and between the readings of subsequent questions. After having produced a second tape that significantly shortened these intervals, the problem of tape speed was still not solved: nearly one out of two of the youth thought that the length of time between questions was still too long (Table IV-2). When the audio tape was recorded, the time between the questions was reduced even more, to approximately one second.

### Table IV-2

**Satisfaction with Tape Speed (Numbers of Respondents)**

<table>
<thead>
<tr>
<th>Time Between Questions</th>
<th>Too Short</th>
<th>Too Long</th>
<th>About Right</th>
<th>Not Answered</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Interview</td>
<td>1</td>
<td>12</td>
<td>16</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td>Field Trials</td>
<td>3</td>
<td>4</td>
<td>33</td>
<td>13</td>
<td>53</td>
</tr>
<tr>
<td>Pretest</td>
<td>3</td>
<td>6</td>
<td>70</td>
<td>0</td>
<td>79</td>
</tr>
<tr>
<td>Column Total</td>
<td>7</td>
<td>22</td>
<td>119</td>
<td>13</td>
<td>161</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Speed of Voice on Tape</th>
<th>Too Fast</th>
<th>Too Slow</th>
<th>About Right</th>
<th>Not Answered</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Interview</td>
<td>1</td>
<td>4</td>
<td>24</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td>Field Trials</td>
<td>2</td>
<td>7</td>
<td>39</td>
<td>5</td>
<td>53</td>
</tr>
<tr>
<td>Pretest</td>
<td>3</td>
<td>4</td>
<td>72</td>
<td>0</td>
<td>79</td>
</tr>
<tr>
<td>Column Total</td>
<td>6</td>
<td>15</td>
<td>135</td>
<td>5</td>
<td>161</td>
</tr>
</tbody>
</table>

Final efforts to decrease the length of the tape focussed on the space between each word, or speaking pace. Initially, the overall speaking pace was kept moderately slow, in keeping with standard interviewing practice. In the final audio recording sessions, however, the text was read at a more conversational pace.

The total effect of these efforts to decrease the length of the tape reduced the tape length from 45 minutes to less than 30 minutes. This decrease in tape length was
accompanied by a decrease in the proportion of respondents who said the time between questions was too long and no increase in the proportion of respondents who thought the speaking pace was too fast (Table IV-2).

**The Answer Sheet**

Having decided not to read answer categories on the tape, a solution had to be found to the problem of conveying enough information to respondents to allow them to code their responses on the answer sheet without revealing either the question they were answering or the content of that answer. This was done by using on the answer sheet only brief, innocuous indicators of the response category. For example, if a question asked about how many times a respondent had done a particular behavior, the answer sheet displayed category labels of "1 or 2 times", "3 to 9 times", and so forth. This type of minimal information was appropriate for 69 of the 74 YRBS questions.

The remaining five questions required that the answer categories be read on the tape. These questions had exceptionally long or complex answer categories, or answer categories that could not be disguised on the answer sheet.

Study participants were asked at various stages of the testing process how they felt about not having the answer categories read on the tape and only one in twenty cited this as a problem (Table IV-3). Making the decision not to read the answer categories on the tape did necessitate always reading the questions twice, in order to give the respondent enough time to understand the question completely and then formulate an answer. Respondents generally accepted this duplication, but did report that they found it somewhat tiresome.

### Table IV-3

<table>
<thead>
<tr>
<th>Problem Not Having Answer Categories on Tape?</th>
<th>Yes</th>
<th>No</th>
<th>Not Answered</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Interview</td>
<td>3</td>
<td>26</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td>Field Trials</td>
<td>1</td>
<td>47</td>
<td>5</td>
<td>53</td>
</tr>
<tr>
<td>Pretest</td>
<td>3</td>
<td>76</td>
<td>0</td>
<td>79</td>
</tr>
<tr>
<td>Column total</td>
<td>7</td>
<td>149</td>
<td>5</td>
<td>161</td>
</tr>
</tbody>
</table>
Speaker Characteristics

In producing the first tape recordings of the YRBS interview, decisions needed to be made about the characteristics of the speaker used on the tape, in particular about the gender, age, and vocal qualities of the speaker used. Little was found in reviewing previous research about whether or not to match the gender of the speaker on the tape to the gender of the respondent. Therefore, during the first stage of the study, respondents heard both a male and a female speaker who alternated reading sections of the questionnaire, roughly ten questions at a time. It was felt that this pattern of changing speakers would make listening to the audio tapes more interesting. However, respondent reaction to the alternating speakers was generally negative. They felt the change was jarring -- just as they became accustomed to one speaker, another would begin reading.

The audio tapes used in the second stage of the research were matched to the gender of the respondent, having found in the current research some basis for gender matching the speaker on the tape to the respondent. The tapes still included two voices so that more information could be collected about the effects of different vocal characteristics, but each speaker read half of the questionnaire before giving way to the second speaker. This solved the problem of jarring respondents with frequent changes of speakers.

The cumulative evidence for gender matching was more convincing after the Individual Interview stage. If a preference was expressed for a gender of speaker, it was for a same gender speaker (Table IV-4). This same pattern of preferences was found at all three study stages.

| Table IV-4 |
| Preferences for Gender of Speaker on Tape (Numbers of Respondents) |
| --- | --- | --- |
| Gender of Voice Preferred for Self: | Male Respondents | Female Respondents |
| | Male Speaker | Female Speaker | Either Gender | Male Speaker | Female Speaker | Either Gender |
| Individual Interview | 8 | 3 | 1 | 9 | 4 | 2 |
| Field Trials | 10 | 5 | 15 | 2 | 10 | 6 |
| Pretest | 14 | 4 | 19 | 1 | 19 | 22 |
| Column Total | 32 | 12 | 35 | 12 | 33 | 30 |
stages in response to debriefing questions. Tapes made for the final stage of the research were edited versions of the second stage tapes and respondents listened to speakers of their own gender.

Group discussions indicated most participants felt that using younger sounding speakers in recording the audio tapes would generate more interest among younger respondents. During debriefing sessions, respondents were asked to guess the ages of the speakers they heard on the tape. Overall, these guesses averaged somewhat higher than the actual ages of the speakers for male and female respondents. Male respondents guessed somewhat higher ages, on average, than female respondents, and this was the same for both male and female speakers.

As part of the pretest debriefing interview, respondents were asked to guess the age of the voice they heard on the audio tape and they were asked the age of speaker they would have preferred to hear on the tape. On average, respondents guessed the age of the speaker to be between 24 and 29 years old, with younger males guessing the highest ages (Table IV-5). These guesses are all higher than the real age of the speakers that were used (whose age ranged from between 20 and 23). In addition, youth in all gender and age groups shown in Table IV-5 preferred a speaker who's voice sounded somewhat younger than the guessed age of the voice they actually heard. For example, males between the ages of 12 and 14 guessed the speaker on the tape to be 29 years of age, on average (Table IV-5). However, they preferred the voice of a speaker who was four years younger, on average, or 25 years of age. While this gap is largest for younger males, it exists for all but the 18 to 21 year old females.

Pretest respondents were also asked if they preferred an older or younger speaker than the one they heard on the tape. Nearly 3 out of 10 pretest respondents stated that they

<table>
<thead>
<tr>
<th>Speaker Quality</th>
<th>12 to 14 Years Old</th>
<th>15 to 17 Years Old</th>
<th>18 to 21 Years Old</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>All</td>
</tr>
<tr>
<td>Guessed Age of Speaker</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>24</td>
<td>26</td>
<td>29</td>
</tr>
<tr>
<td>Preferred Age of Speaker</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>23</td>
<td>24</td>
<td>27</td>
</tr>
<tr>
<td>n</td>
<td>12</td>
<td>18</td>
<td>30</td>
</tr>
</tbody>
</table>
preferred a younger voice on the tape, while only 1 out of 10 preferred an older voice (results not shown). The remainder expressed no preference in terms of the age of the voice on the tape.

The characteristics of the speakers as perceived by respondents and the reaction of respondents to these characteristics varied greatly among respondents. Several respondents reported "hearing" differing educational characteristics among the speakers, and others had a strong negative reaction to particular speakers. However, all respondents were able to complete the YRBS questionnaire with no apparent lasting effects. Unfortunately no pattern to these reactions has been discerned. We can only note that they occur.

In summary, we learned the following about what speakers to use in making the tape recordings for a survey of youth:

- the selection of the appropriate speaker is critically important and speakers with distinctive accents or characteristics should be avoided as they may produce exaggerated reactions in young respondents;
- respondents prefer to hear a speaker of the same gender, although this preference is less pronounced in older youth;
- multiple speakers should not be used on the tape as respondents report becoming accustomed to a speaker, whether or not they actually prefer that speaker, and do not like switching to another; and, finally,
- respondents prefer younger sounding speakers on the tape but tend to overestimate the actual ages of the speakers they hear.

Technical Issues

A major concern we had was whether respondents would need to rewind the cassette in order to repeat a question. The cassette players did have full rewind and fast forward capabilities, but they did not have an automatic feature that would stop tape movement at the next silent spot on the tape. In addition, the players we used had poorly labelled control buttons. Therefore, to repeat a question, respondents had to first find the correct button, and then guess about how long they should hold down the rewind button. There was no guarantee they would not rewind too far if the button were held down too long.

These worries turned out to be unfounded. During the field tests of the audio tape mode, almost no respondents needed to rewind the tape. There were a few times when respondents who wanted extra thinking time stopped the tape after hearing the repeat of the question. In the few cases where the respondent rewound or fast forwarded the tape, no extraordinary problems were noted by interviewers. Most respondents were able to complete the interview using the audio tape without stopping or rewinding.
We did envision that there would be at least some minor technical difficulties with either the cassette players themselves or with the tapes. This turned out not to be the case. Batteries did fail during interviews, but the difficulty was easily corrected and battery failure was not cited by interviewers as a severe problem. In general, the cassette players turned out to be very durable. During the early stages, interviewers carried two cassette players to each interview, but as the reliability of the machines became clear, they carried only one. No instance was reported of an interview being lost due to malfunctioning equipment.

**Instructions on the tape**

Using cassette tapes allowed us to include assurances of confidentiality, instructions on using the tape player and marking the answer sheet, and a request for honest and accurate reports in the recording itself. During the first stages of the research, these instructions also incorporated example questions in order to familiarize respondents with the process of responding. However, most youth were able to mark their answers to the example questions long before they heard the question being read on the tape. This was possible because the answer sheet contained enough information so that they could guess the question before they heard it. This interfered with them listening to the most important part of the instructions so the example questions were deleted from later versions of the tape.

Most respondent comments about the instructions cited them as being too long, too detailed, or both. As new versions of the tape were made, these instructions were shortened. It seems that most youth are accustomed to doing general tasks of this sort, even if they have never used the cassette tape format, and need little additional training in these matters.

**Evaluation of Audio Tape Questionnaires**

One risk in using only the audio tape is that the enforced, slower pace of the interview will either bore respondents or cause them to lose interest in the questionnaire and not take it seriously. Our research did not confirm this, however. Slightly less boredom and higher interest was expressed by respondents using just the written questionnaire, but almost no respondents reported being very bored at any stage of the research using any of the three modes (Table IV-6). Further, no Pretest respondents chose the category "very bored" when asked how bored they were while answering the questions, and nearly two out of three respondents chose the "not at all bored" category -- and all Pretest respondents used AUDIO TAPE ONLY mode to complete the YRBS questionnaire.

Beyond the reasons respondents have for preferring to use the AUDIO TAPE ONLY mode, the use of this mode has other benefits. It will reduce, if not eliminate, response error due to interviewer errors. Use of a standardized tape also permits the questions to be read exactly as they were written for every respondent in the sample.
### Table IV-6
Least Boring Mode (Numbers of Respondents)

<table>
<thead>
<tr>
<th>Least Boring Mode</th>
<th>COMBINATION</th>
<th>AUDIO TAPE ONLY</th>
<th>WRITTEN ONLY</th>
<th>All Equal</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Interview</td>
<td>7</td>
<td>5</td>
<td>17</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td>Field Trials</td>
<td>5</td>
<td>11</td>
<td>34</td>
<td>2</td>
<td>52</td>
</tr>
<tr>
<td>Column total</td>
<td>12</td>
<td>16</td>
<td>51</td>
<td>2</td>
<td>81</td>
</tr>
</tbody>
</table>

Of concern when a questionnaire is administered using only a tape recording is the reaction of interviewers. They may feel they have been demoted to performing menial tasks. However, in interviewer debriefings, the audio tape mode received universal praise, and interviewers reported that they liked having the responsibility for asking the questions removed from them. They also said they enjoyed the change of pace the audio tape mode represented from the typical interviewing situation they faced.

So what are interviewers supposed to do while the tape player conducts the interview for them? To avoid the situation where the interviewer simply sits and watches the respondent while the tape is running, interviewers were directed to keep their attention diverted from the respondent by completing other tasks associated with the survey, such as editing the coversheet. The interviewers reported that this worked quite well.

Three important findings suggest that the AUDIO TAPE ONLY mode will yield the highest quality self reports by YRBS respondents. First, the AUDIO TAPE ONLY mode is viewed by respondents as being the most private of the three modes we used (Table IV-7). Second, most respondents feel that youth will answer the questions most truthfully when using just an audio tape. Finally, youth clearly see the audio tape as solving problems for those with reading difficulties and using just the audio tape is preferred by younger respondents for this reason.

This is not to say that all questionnaires should be administered by using audio tapes, either with or without a written questionnaire. In some surveys, the inability to use skip patterns cannot be easily overcome. In other cases, asking open-ended questions is a necessity and such questions cannot be handled effectively by the tape mode. However, in the case of the YRBS questionnaire, which asks only fixed response questions, the use of portable audio cassette tape players with a taped questionnaire proved to be an important solution to problems of privacy, truthfulness and comprehension, and provides a viable way for youth to answer questions on sensitive topics in a household setting.
## Table IV-7
Reasons for Mode Preference by Study Stage (Numbers of Respondents)

<table>
<thead>
<tr>
<th>MOST PRIVATE MODE</th>
<th>COMBINATION</th>
<th>AUDIO TAPE ONLY</th>
<th>WRITTEN ONLY</th>
<th>ALL EQUAL</th>
<th>ROW TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Interview</td>
<td>7</td>
<td>10</td>
<td>9</td>
<td>0</td>
<td>26</td>
</tr>
<tr>
<td>Field Trials</td>
<td>9</td>
<td>16</td>
<td>28</td>
<td>0</td>
<td>53</td>
</tr>
<tr>
<td>Pretest</td>
<td>NA</td>
<td>59</td>
<td>2</td>
<td>18</td>
<td>79</td>
</tr>
<tr>
<td>Column total</td>
<td>16</td>
<td>85</td>
<td>39</td>
<td>18</td>
<td>158</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MOST TRUTHFUL MODE</th>
<th>COMBINATION</th>
<th>AUDIO TAPE ONLY</th>
<th>WRITTEN ONLY</th>
<th>ALL EQUAL</th>
<th>ROW TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Interview</td>
<td>8</td>
<td>11</td>
<td>7</td>
<td>0</td>
<td>26</td>
</tr>
<tr>
<td>Field Trials</td>
<td>8</td>
<td>12</td>
<td>16</td>
<td>15</td>
<td>51</td>
</tr>
<tr>
<td>Pretest</td>
<td>NA</td>
<td>62</td>
<td>1</td>
<td>16</td>
<td>79</td>
</tr>
<tr>
<td>Column total</td>
<td>16</td>
<td>85</td>
<td>24</td>
<td>31</td>
<td>156</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BEST MODE: READING PROBLEMS</th>
<th>COMBINATION</th>
<th>AUDIO TAPE ONLY</th>
<th>WRITTEN ONLY</th>
<th>ALL EQUAL</th>
<th>ROW TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Interview</td>
<td>13</td>
<td>14</td>
<td>1</td>
<td>0</td>
<td>28</td>
</tr>
<tr>
<td>Field Trials</td>
<td>25</td>
<td>26</td>
<td>0</td>
<td>1</td>
<td>52</td>
</tr>
<tr>
<td>Column total</td>
<td>38</td>
<td>40</td>
<td>1</td>
<td>1</td>
<td>80</td>
</tr>
</tbody>
</table>
The Effect of Financial Incentives on Respondent Participation

Background

This section of the report summarizes the results of several different types of activities undertaken by the Survey Research Center to investigate the effects of respondent payments on the willingness of youth to participate in the YRBS interview and on their motivation to answer YRBS questions as accurately and truthfully as possible. These efforts are part of a larger project designed to develop and test procedures for administering the YRBS questionnaire in a household setting as a supplement to the 1992 NHIS.

Group discussions and individual interviews conducted as part of this research demonstrated that the young people had low interest in the survey, and saw no compelling reasons for responding honestly or being diligent in the task of answering the survey questions. Paying respondents to participate in the YRBS survey was proposed in order to increase the likelihood that they would cooperate. Since the topics covered in the YRBS questionnaire are sensitive and potentially threatening, overcoming the initial reluctance of respondents to participate can be a major benefit. This effect may also extend to the keeping of appointments.

Respondents who are paid may respond more truthfully and accurately to the YRBS questions. Paid respondents may make greater efforts to recall and formulate answers and may be more likely to provide truthful answers to threatening or sensitive questions. These are important considerations for the YRBS supplement, since respondent payments may produce meaningful gains in data quality by increasing respondent motivation to provide accurate and truthful information (Step IV, Figure II-5).

The results of the experiments conducted as part of this research confirm two important aspects of paying respondents:

- Paying NHIS respondents to participate in the YRBS supplement increased the cooperation rate from 79 percent to 90 percent.
- Further research should be conducted before reducing payments to an amount less than $20.

Results

In order to assess the impact of financial rewards on respondent participation and motivation, several different types of activities were instigated. These efforts included group interviews with both youth and parents that covered the general value of respondent
Part V Respondent Payments

payments, and two stages of test interviews (the Field Trial and Pretest stages) in which youth were interviewed in their own homes and were asked a series of debriefing questions after they had completed the YRBS questionnaire. In addition, a split sample experiment was conducted during the Pretest interviews, in order to more formally assess the effect of payments on respondent participation.

Group Interviews

Youth groups. In group interviews with youth, participants were asked their views on whether or not respondents should be paid for participating in the YRBS study. All groups reached consensus that paying respondents would increase the likelihood that youth would participate in the study.

Four of the seven youth groups thought that respondents would be more likely to answer questions truthfully if they were paid. Group interview participants cited the $20 payment as an indicator of the importance of the study and felt that if they were going to be paid as much as $20, the study must be important and they would therefore participate more completely in the study. Additional reasons mentioned suggested that payment of $20 would persuade youth to answer the survey questions more accurately and honestly.

Doubt that respondent payments would increase truthful reporting was expressed in three group interviews. Of these three groups, all were with youth 15 to 17 years old, and two of these three group sessions were with male respondents.

Parent groups. Participants in both group interviews conducted with parents strongly supported paying youth to participate in the study. Participants in both parent groups also felt that youth would be more likely to provide truthful and complete answers if paid. When asked, parents reported that a cash payment was more appropriate and useful than a gift or other form of incentive.

Field Trial and Pretest Debriefing Questionnaires

Data from Field Trial and Pretest interviews show that youth feel that it is a good idea to pay people to answer the YRBS questions. More than eight out of ten Field Trial and Pretest respondents answered "yes" when asked if it was a good idea to pay people to answer the YRBS questions (Table V-1). However, it must be noted that these responses came from youth who knew they were going to be paid $20 for their interviews.

Respondents were asked a follow-up question that asked their reasons why people should, or should not, be paid to answer the survey questions. Of those youth who thought paying people was a good idea, more than four out of ten stated that paying respondents would be likely to get youth to participate in the YRBS survey (Table V-2). Respondents who mentioned increased participation generally gave no specific reason why people would be more likely to
Table V-1
Is Paying People a Good Idea (Numbers of Respondents)

<table>
<thead>
<tr>
<th>Is it a good idea to pay people to answer these questions?</th>
<th>Yes</th>
<th>No</th>
<th>Difference/Depends</th>
<th>Don't Know</th>
<th>No Answer</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Trials</td>
<td>43</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>53</td>
</tr>
<tr>
<td>Pretest</td>
<td>66</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>79</td>
</tr>
<tr>
<td>Column Total</td>
<td>109</td>
<td>12</td>
<td>2</td>
<td>2</td>
<td>7</td>
<td>132</td>
</tr>
</tbody>
</table>

participate, other than to suggest that offering money would make people more cooperative. Other reasons given why people should be paid included increasing honesty, the general sense that people should be paid for the time they spend answering survey questions, and the sensitive nature of the YRBS questions.

Table V-2
Respondent's Reasons Why Paying People Is a Good Idea (Numbers of Respondents)

<table>
<thead>
<tr>
<th>Respondent's Reasons for Paying People to Answer Questions:</th>
<th>Field Trials</th>
<th>Pretest</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>To get people to participate</td>
<td>23</td>
<td>27</td>
<td>50</td>
</tr>
<tr>
<td>To increase honesty or seriousness</td>
<td>5</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Should pay people for their time</td>
<td>5</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Respondent would have participated even if not paid</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>No reason given</td>
<td>0</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>Other reasons</td>
<td>8</td>
<td>9</td>
<td>17</td>
</tr>
</tbody>
</table>

The Field Trial and Pretest data provide evidence that many respondents link payments with the truthfulness of their answers and with the seriousness with which they treat the YRBS study. More than six out of ten respondents felt that people would answer the questions more honestly if they were paid, while only three out of ten suggested it would not
make a difference (Table V-3, Panel 1). Seven out of ten respondents thought people would take the study more seriously if they were paid (Table V-3, Panel 2).

<table>
<thead>
<tr>
<th>Wordings of Question:</th>
<th>Yes</th>
<th>No Difference/Depends</th>
<th>Don't Know</th>
<th>No Answer</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Trials</td>
<td>28</td>
<td>7</td>
<td>15</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Pretest</td>
<td>56</td>
<td>2</td>
<td>20</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Column Total</td>
<td>84</td>
<td>9</td>
<td>35</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Panel 2

<table>
<thead>
<tr>
<th>Wordings of Question:</th>
<th>Yes</th>
<th>No Difference/Depends</th>
<th>Don't Know</th>
<th>No Answer</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Trials</td>
<td>36</td>
<td>16</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Pretest</td>
<td>59</td>
<td>14</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Column Total</td>
<td>95</td>
<td>30</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Panel 3

<table>
<thead>
<tr>
<th>(IF YES TO ABOVE) If people take the study more seriously, will they answer questions more honestly?</th>
<th>Yes</th>
<th>No Difference/Depends</th>
<th>Don't Know</th>
<th>No Answer</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Trials Only</td>
<td>33</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

In order to investigate the link between how seriously people take the YRBS study and the honesty of their answers, the Field Trial debriefing questionnaire asked those who thought...
paid respondents took the study more seriously if they thought that people who took the study more seriously would be more or less likely to answer the questions honestly. Of the 37 respondents asked this question, 33 said if people took the study more seriously, they would answer questions more honestly (Table V-3, Panel 3).

**Split sample experiment**

At the Pretest stage, a limited experiment on the effects of respondent payment was conducted. The pretest sample was divided into two groups by having Census field representatives alternate each week between mentioning the $20 payment and not mentioning the $20 payment. Two types of parental permission forms were used: one informed parents their child would receive $20 for completing the YRBS interview; the second did not mention that their child would receive $20 for the SRC interview.

Various constraints limited the scope of the split sample experiment. The initial design called for continuation of the experiment by SRC interviewers. However, time limitations imposed by the NCHS schedule, and other administrative constraints, necessitated abandoning the experiment after the initial Census contact. SRC interviewers were allowed to mention the $20 payment to ALL respondents, regardless of which experimental group the case had been assigned originally.

**Special note on recruiting youth 18 to 20 years old.** No parental permission was required for youth ages 18 to 20. While the initial design of the experiment called for randomly assigning youth 18 to 20 to one of the two experimental conditions, Census field representatives did not receive instructions about the experimental status of youth 18 to 20 years old. This oversight was corrected in March, and Census field representatives did not mention the $20 payment to and of the respondents between the ages of 18 and 20 after that time.

Despite this contamination, subsequent discussions revealed that Census field representatives probably did not mention the $20 payment in their efforts to recruit 18 to 20 year old youths. While all results are presented separately for youth 18 to 20 years old because of this problem, we believe that they are more nearly like the group that was not told about the $20 payment.

**SRC efforts.** SRC interviewers attempted to interview all youth selected from NHIS households in Chicago and Detroit, including cases where parental permission for the YRBS interview was not obtained by a Census field representative. SRC interviewers knew whether or not permission to interview the selected youth had been obtained by Census prior to attempting to recontact the household to conduct the YRBS interview.

Signed parental permission was required before youth ages 12 to 17 could participate in the YRBS interview conducted by SRC. In addition, all youth were required to sign a consent
form for themselves. At the conclusion of interviews conducted by the SRC, respondents were paid $20 for their participation, regardless of their original experimental assignment.

Non-sample. Four cases recruited by Census field representatives were deleted from the SRC experiment. Two were deleted because the sample address could not be identified due to sample listing errors. No SRC contact was attempted in the other two non-sample cases because the residence was located well outside the Detroit area.

The results of the split sample experiment are shown in Table V-4. Of the 31 NHIS households that were informed about the $20 payment, 3 refused to grant permission to the Census field representative to interview the selected youth (10 percent). In cases where Census field representatives did not mention the $20 respondent payment, 6 out of 23, or 26 percent, refused to provide parental consent for the YRBS interview (Table V-4).

For 18 to 20 year old youth selected from the NHIS households, 6 of 35 respondents, or 17 percent, refused initially to participate in the SRC call-back interview (Table V-4). Overall, of the 15 NHIS households that refused to provide permission to conduct the YRBS interview, 12 were from households where the $20 respondent payment was not mentioned or it is unlikely the payment was mentioned.

SRC interviewers, when contacting NHIS households that initially had refused permission for the YRBS interview to the Census field representatives, were allowed (and encouraged) to mention the $20 respondent payment in attempting to convert these refusals to completed YRBS interviews. Of the 15 refusals obtained by Census interviewers, SRC interviewers subsequently convinced 13 to complete the YRBS interview (Table V-4). Of the remaining two cases who refused permission to Census personnel, one eventually refused the SRC interviewer also. In the other case, no SRC contact was attempted with the selected youth because the sample household was located well outside the Detroit area.

SRC non-interviews. SRC interviewers were unable to complete interviews with six potential respondents. In one case, the respondent refused due to the recent death of a parent. Another refusal came from a parent when the youth had already agreed to conduct the interview. In two cases the selected youth was never actually contacted by an SRC interviewer within the study period--there was address information available that appeared correct, but the youths (both between the ages of 18 and 20) were never found at home by the SRC interviewer. In only two non-interview cases did an SRC interviewer actually receive a direct, firm final refusal to participate from the selected youth.

Summary of field experiment results. It is important to note that Census field representatives were able to obtain cooperation in 90 percent of the households (28 of 31) where the $20 was mentioned, but in only 79 percent of the remaining households. This 90 percent rate achieved by Census field representatives when they were allowed to mention the $20 is similar to the response rate of 93 percent achieved at follow-back by SRC interviewers, when the $20 was mentioned to all potential respondents (79 interviews out of 85 attempts). Additionally, SRC interviewers successfully obtained interviews with 13 of 15 youth who initially refused Census interviewers, again suggesting that the $20 had a substantial influence on youth considering participating in a YRBS interview.

The success of respondent payments in obtaining YRBS interviews may be partly due to the reaction of interviewers to the payments. At an interviewer debriefing conference held at the conclusion of the Pretest stage, SRC interviewers unambiguously agreed that their
success in obtaining YRBS interviews and in converting Census refusals was mainly the result of mentioning the $20 respondent payment. Even though interviewers attributed their success directly to the influence of the $20 payment on respondents, their comments suggest that respondent payments also have a forceful, positive influence on the attitudes and expectations of interviewers. Interviewers with such a positive outlook may feel they are likely to obtain an interview, rather than expecting a refusal, prior to contacting a potential respondent and subconsciously may convey to potential respondents a more positive view of the YRBS study. Thus, the total impact of respondent payments on participation rates is the sum of their positive, direct effect on respondents and the indirect effect they have on the attitudes of interviewers.

Recontact efforts

As stated above, we were unable to continue the split sample experiment to its logical conclusion, due to time and administrative constraints. There is some limited data available, however. There was no distinct relationship between mentioning the $20 and the number of contacts necessary to complete an interview (results not shown). It took approximately 3.5 contacts to reach the households in each group, regardless of whether or not the $20 payment was mentioned.12

However, the lack of any notable effect may stem from the fact that SRC interviewers were allowed to use the $20 payment in their initial contacts with all recruited NHIS households. At the moment of SRC contact, all households essentially became part of the same cell of the experimental design ("$20 mentioned") and any effect the $20 may have had to reduce the number of contacts required to obtain an interview may have been negated.

Amount and type of remuneration

Our efforts were not specifically designed to investigate how respondent motivation varies with the amount of payment and this discussion will not be able to fully address this issue. However, some subjective information was obtained during the course of our efforts.

The issue of how much respondents should be paid was raised in only one of the two group interviews with parents and was not discussed in group interviews with youth. Parents expressed concern that $5 or $10 would be too little to achieve a positive effect on the motivation of youth to participate in the YRBS supplement and that offering youth an amount higher than $20 would be viewed as bribery and might have a negative effect on data quality (causing over reporting). Parents also felt that cash was preferable to a gift or check.

During the Field Trial interviews, youth were asked whether they would prefer receiving $20 or the portable audio cassette tape player as payment for participating in the YRBS interview.13 Of the 53 youths who participated in the Field Trial, only 13 expressed a preference for keeping the tape player in lieu of the $20 payment. When offered the chance at the end of the interview to actually keep the tape player instead of receiving $20, 2 of the 13 who originally said they would prefer the tape player changed their minds and took the $20 instead. All of the 40 youth who said initially that they would prefer cash ultimately selected the cash payment.
### Table V-4
Disposition of Pretest Cases Recruited by Census Field Representatives

<table>
<thead>
<tr>
<th></th>
<th>Census Mentioned $20 (12-17 Years Old)</th>
<th>Census Did Not Mention $20 (12-17 Years Old)</th>
<th>18-20 Year Old Respondents</th>
<th>Row Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Permission Given</td>
<td>Permission Denied</td>
<td>Permission Given</td>
<td>Permission Denied</td>
</tr>
<tr>
<td>Number of Cases Received by SRC</td>
<td>28</td>
<td>3</td>
<td>17</td>
<td>6</td>
</tr>
<tr>
<td>SRC Status:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interviewed</td>
<td>25</td>
<td>2</td>
<td>17</td>
<td>5</td>
</tr>
<tr>
<td>Non-Interview</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Non-Sample</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

54
Conclusions

The results of the group interviews and the field test interviews provide evidence that paying respondents $20 to participate in the YRBS supplement to the 1992 NHIS is likely to have major benefits. These conclusions can be summarized as follows:

- The most notable finding is that youth who are aware they will be paid $20 for completing an interview are more likely to agree to participate in the YRBS supplement (90 percent for paid youth to 79 percent for unpaid youth).

- We can offer little evidence about what level of respondent payment is most appropriate. Our limited results suggest that caution should be exercised in increasing or reducing respondent payments from the $20 level used in the current research.

- There seems to be no negative impact on the response rate of making the YRBS a follow-back interview, given that youth will be paid $20.

- Youth clearly feel that paying respondents increases the seriousness with which they approach the task of answering the YRBS questions and increases the accuracy and truthfulness of their responses. This point is particularly germane, given the sensitive and threatening nature of the YRBS questionnaire, and the fact that it will be administered to a young sample in a household setting.

- We found no evidence that paying YRBS respondents will make it easier to schedule call-back interviews by reducing the number of calls to the household required to arrange an appointment, or by increasing the likelihood that sample youth will keep appointments.

Respondent Payments and Commitment

A preponderance of youth reported in group sessions and in individual interviews that they and their peers probably would not give accurate answers to questions they perceived as being socially undesirable or threatening to their self image. As might be expected, such threats included questions on the use of alcohol, drugs, and sexual activity. However, other types of questions were threatening as well. These tend to concern matters on which the respondent perceives him/herself as deviating from group norms in a negative direction—for example, being over- or underweight, or not engaging in exercise programs.

Our research findings indicate that unwillingness to report events or behaviors is only partially caused by concerns over privacy or confidentiality of the answers. During the current research it became apparent that in addition to privacy concerns, respondents could see no overriding reason to be diligent in answering survey questions. Participants in group interviews voiced skepticism about any benefits that may accrue from participating in surveys. Therefore, techniques typically used with adult respondents to encourage participation and
more accurate reporting, such as appealing to their obligations as citizens or emphasizing the societal benefits likely to come from the survey, may be unproductive with youthful respondents. Thus, some different ways of motivating respondent participation and accurate reporting are needed.

Reluctance of youth to provide complete and accurate answers to survey questions will be detrimental to the quality of the YRBS survey data. Response rates may be negatively affected, either through refusals to be interviewed or through failures to keep appointments. Inaccurate and incomplete reporting may increase due to a lack of effort on the part of respondents to achieve complete and accurate recall. Finally, youthful respondents may censor their responses when the answers appear to be even slightly threatening.

During group interviews with youth, it became apparent that respondent payments might successfully be linked to the level of effort and truthfulness the youth exhibited in answering the YRBS questionnaire. During later interviews, it was decided to take advantage of the consent form youth were being asked to sign prior to the interview by inserting language that linked the $20 payment to the efforts of the youth to answer the YRBS questions. This effort builds upon research that has shown respondents are more likely to report increased amounts of information and to report other information more accurately if they sign a commitment form agreeing to work hard in answering survey questions.

The new section of the youth consent form was worded as follows:

*It is very important that you answer each question accurately so that the research will be useful. To show our thanks we will give you $20 for the time and effort you make to provide accurate information for our research. Will you agree to answer each question as accurately as you can?*

*Please sign here to show that you agree to participate and that you agree to give accurate answers.*

While we have no data that would determine the effect that signing this commitment form had on the accuracy of the self-reports, it is our feeling that such a commitment form, linked to respondent payments, can only serve to increase the accuracy of reporting. Such considerations are critical in surveys such as the YRBS, where potentially threatening and sensitive questions are included.

According to the reports of the youth and parents participating in the group interviews conducted during this research, youth between the ages of 12 and 20 recognize the obligation that signing a commitment agreement represents and acknowledge that signing such an agreement, when it is linked to the $20 payment they will receive, has a positive impact on their motivation to provide accurate and truthful answers to the YRBS questions. Given that youth do not respond to the same pleas to social conscience as do adults, such additional efforts are necessary in order to obtain accurate information from youthful respondents.

Finally, the youth participating in the current research, after having signed a form that linked the $20 payment to their providing accurate answers, reported that paid respondents were more likely to (a) take the study more seriously; and (b) answer more honestly. These findings demonstrate that it is may be possible to increase respondent motivation to respond accurately and honestly by linking respondent payments to this commitment.
Notes

1. Since parental consent is not required for youth 18 to 20 years old to participate in the YRBS interview, no group interviews were conducted with parents of 18 to 20 year old youth.

2. Some examples of these kinds of changes can be found by comparing the SRC questionnaire to the original DASH questionnaire on the following questions:

<table>
<thead>
<tr>
<th>SRC Version</th>
<th>DASH Version</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question #</td>
<td>Question #</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>27</td>
<td>Parentheses to &quot;that is&quot;</td>
</tr>
<tr>
<td>37</td>
<td>45</td>
<td>Parentheses to &quot;or&quot;</td>
</tr>
<tr>
<td>38</td>
<td>46</td>
<td>&quot;/&quot; changed to &quot;or&quot;</td>
</tr>
<tr>
<td>39</td>
<td>47</td>
<td>&quot;/&quot; changed to &quot;or&quot;</td>
</tr>
</tbody>
</table>

3. The revised questionnaire in the Appendix represents the script proposed for the audio tape. All questions WILL BE read twice on the tape. Except where noted by an *, answer categories WILL NOT BE read on the audio tape.

   The answer categories appear in the Appendix questionnaire as we propose they appear on the answer sheets that will be used in conjunction with the audio tapes. Respondents will not use a written questionnaire.

4. These changes apply to the following questions:

<table>
<thead>
<tr>
<th>Topic</th>
<th>SRC Version</th>
<th>DASH Version</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Question #</td>
<td>Question #</td>
</tr>
<tr>
<td>Age first smoked</td>
<td>14</td>
<td>25</td>
</tr>
<tr>
<td>Age smoked regularly</td>
<td>16</td>
<td>27</td>
</tr>
<tr>
<td>Age of first drink</td>
<td>22</td>
<td>32</td>
</tr>
<tr>
<td>Age first used marijuana</td>
<td>28</td>
<td>36</td>
</tr>
<tr>
<td>Age first used cocaine</td>
<td>31</td>
<td>39</td>
</tr>
<tr>
<td>Age first intercourse</td>
<td>67</td>
<td>49</td>
</tr>
</tbody>
</table>

5. For this reason, we recommend adding "about" to questions that ask for the first age of a behavior or the frequency of a behavior over a period of 30 days or longer. These are listed below:

<table>
<thead>
<tr>
<th>SRC Version</th>
<th>DASH Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question #</td>
<td>Question #</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>7</td>
</tr>
</tbody>
</table>
For similar reasons we recommend adding the word "any" to the series of questions asking about dietary habits (SRC question numbers 48 through 54).

6. These changes generally apply to following other types of lifetime questions:

<table>
<thead>
<tr>
<th>Topic</th>
<th>SRC Version</th>
<th>DASH Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol use</td>
<td>23</td>
<td>33</td>
</tr>
<tr>
<td>Marijuana use</td>
<td>29</td>
<td>37</td>
</tr>
<tr>
<td>Cocaine use</td>
<td>32</td>
<td>40</td>
</tr>
<tr>
<td>Crack</td>
<td>34</td>
<td>42</td>
</tr>
<tr>
<td>Other drugs</td>
<td>35</td>
<td>43</td>
</tr>
<tr>
<td>Steroids</td>
<td>36</td>
<td>44</td>
</tr>
<tr>
<td>Shot up</td>
<td>37</td>
<td>45</td>
</tr>
</tbody>
</table>

7. These changes also affect the following questions:

- About how often do you wear a seat belt when riding in a car driven by someone else?
During the past 12 months, about how many times did you ride a motorcycle?

During the past 12 months, about how many times did you ride a bicycle?

During the past 12 months, when you went swimming in places such as a pool, lake, or ocean, about how often was an adult or a lifeguard watching you?

These kinds of changes apply to the following questions with a 12 month referent:

<table>
<thead>
<tr>
<th>Topic</th>
<th>SRC Version</th>
<th>DASH Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motorcycle riding</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Bicycle riding</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Physical fights</td>
<td>7</td>
<td>16</td>
</tr>
<tr>
<td>Injuries from fights</td>
<td>9</td>
<td>18</td>
</tr>
</tbody>
</table>

See the Appendix questionnaire for the exact wording of these modified categories. Listed below are the questions with shorter time referents that we specifically recommend be modified in this fashion:

<table>
<thead>
<tr>
<th>SRC Version</th>
<th>DASH Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question #</td>
<td>Question #</td>
</tr>
<tr>
<td>17</td>
<td>28</td>
</tr>
<tr>
<td>18</td>
<td>29</td>
</tr>
<tr>
<td>24</td>
<td>34</td>
</tr>
<tr>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>26</td>
<td>11</td>
</tr>
<tr>
<td>27</td>
<td>12</td>
</tr>
<tr>
<td>30</td>
<td>28</td>
</tr>
<tr>
<td>33</td>
<td>41</td>
</tr>
</tbody>
</table>

The reasons for rejecting neutral site interviews are independent of the logistical and cost problems that such an effort would entail in a large national survey such as the NHIS.

There were differences in the wording of some questions between the field trial and pretest debriefing questionnaires. However, any differences are slight, and it is unlikely that these would have a major impact on the results obtained. As can be seen from Tables 1, 2, and 3, very similar patterns of responses were obtained from both debriefing questionnaires.

The minimum number of contacts required was two: (1) a telephone call to arrange an appointment; and (2) the interview itself.

The model used for these tests was an Aiwa brand that in addition to the cassette feature also included an AM/FM stereo radio.
Notes and References

14. The youth consent form was used because of the human subjects regulations of the University of Michigan's School of Public Health. These required youth participating in YRBS interviews to sign a participant consent form before an interview could be conducted.

Audio Tape Introduction

Thank you for agreeing to participate in the United States Public Health Service's study of the health activities of young people. This questionnaire will be given to several thousand young people to get a picture of behaviors which are good or bad for their health. Before I begin, please take a few seconds to adjust the VOLUME so my voice is loud enough.

Let's begin. Please remember that your answers will be kept confidential and your responses will in no way be identified with you. So that you can answer all of the questions honestly, without worrying about anyone seeing your answers, the questions will be read on this tape.

It is important that you answer each question accurately so that the information you give us will be useful for developing programs to protect the health of young people throughout the U.S.

I will always read the question two times. On some questions, where there are several answers to choose from, I will read the question and the answer choices two times. There will be a short pause after I read each question so that you can mark your answer on the answer sheets. To indicate your answer, make a mark in the square. Before you mark an answer, please look at the question number on the answer sheet to be sure it matches the number of the question that you heard on the tape.

If you have any questions, lose your place, or need help, you can stop the tape by pushing the STOP button on the side of the tape player and ask the interviewer for help. Push the PLAY button to start the tape again.

If you would like more time to think about your answer to a question, push the STOP button on the side of the tape player. When you are ready, push the PLAY button to continue.

If you need to have a question repeated, push the Rewind button on the side of the tape player for just a few seconds. To start the tape again, push the PLAY button.

Take a moment right now and find these buttons on the side of the tape player. If you have any questions about how to run the tape player, please stop the tape and ask the interviewer for help.

---

1 This questionnaire represents the script proposed for the audio tape. All questions WILL BE read twice on the tape. Except where noted by an *, answer categories WILL NOT BE read on the audio tape. Answer categories appear in this questionnaire as we propose they appear on the answer sheets to be used in conjunction with the audio tapes. Respondents will not use a written questionnaire.
Appendix A

Proposed Questionnaire Revisions

The first questions ask about some things that may affect health and safety.

1. About how often do you wear a seat belt when riding in a car driven by someone else?
   - Never
   - Sometimes
   - Most of the time
   - Always

2. During the past 12 months, about how many times did you ride a motorcycle?
   - None
   - 1 to 10 times
   - 11 to 40 times
   - 41 or more times

3. When you rode a motorcycle during the past 12 months, about how often did you wear a helmet?
   - You have not done this during the past 12 months
   - Never wore a helmet
   - Sometimes wore a helmet
   - Most of the time wore a helmet
   - Always wore a helmet

4. During the past 12 months, about how many times did you ride a bicycle?
   - None
   - 1 to 10 times
   - 11 to 40 times
   - 41 or more times

5. When you rode a bicycle during the past 12 months, about how often did you wear a helmet?
   - You have not done this during the past 12 months
   - Never wore a helmet
   - Sometimes wore a helmet
   - Most of the time wore a helmet
   - Always wore a helmet
6. During the past 12 months, when you went swimming in places such as a pool, lake, or ocean, about how often was an adult or a lifeguard watching you?

   _ You did not go during the past 12 months
   _ Never
   _ Sometimes
   _ Most of the time
   _ Always

These next questions ask about things young people sometimes do that may lead to injuries.

7. During the past 12 months, about how many times were you in a physical fight?

   _ None
   _ 1 time
   _ 2 to 5 times
   _ 6 or more times

8. The last time you were in a physical fight, with whom did you fight?

   IN ANSWERING THIS QUESTION PLEASE MARK ALL OF THE ANSWER CATEGORIES THAT APPLY TO YOU

   _ You have never been in a physical fight
   _ A stranger
   _ A boyfriend, girlfriend, or date
   _ Some other friend or person you know
   _ A family member

9. During the past 12 months, about how many times were you in a physical fight in which you were injured and had to be treated by a doctor or nurse?

   _ You have not done this during the past 12 months
   _ None
   _ 1 time
   _ 2 to 5 times
   _ 6 or more times
10. During the past 30 days, on about how many days did you carry any kind of a weapon?
   - None
   - 1 day
   - 2 to 5 days
   - 6 or more days

*11. During the past 30 days, what one kind of weapon did you carry most often?
   - You did not carry a weapon during the past 30 days
   - A handgun
   - Other guns, such as a rifle or shotgun
   - A knife or razor
   - A club, stick, bat, or pipe
   - Some other weapon

The next few questions ask about cigarette smoking and use of tobacco.

12. Have you ever tried cigarette smoking, even one or two puffs?
   - Yes
   - No

13. Do you think you will smoke cigarettes during the next 12 months?
   - Yes
   - No
   - Not sure

14. About how old were you when you smoked a whole cigarette for the first time?
   - You have never done this during your life
   - Under 10 years old
   - 10 to 13 years old
   - 14 to 16 years old
   - 17 years or older
15. Have you ever smoked cigarettes regularly, that is, at least one cigarette every day for 30 days?
   ___ Yes
   ___ No

16. About how old were you when you first started smoking cigarettes regularly, that is, at least one cigarette every day for 30 days?
   ___ You have not done this regularly
   ___ Under 10 years old
   ___ 10 to 13 years old
   ___ 14 to 16 years old
   ___ 17 years or older

17. During the past 30 days, on about how many days did you smoke cigarettes?
   ___ None
   ___ 1 or 2 days
   ___ 3 to 10 days
   ___ 11 to 29 days
   ___ All 30 days

18. During the past 30 days, on the days you smoked, about how many cigarettes did you smoke per day?
   ___ You have not done this during the past 30 days
   ___ 1 or fewer cigarettes per day
   ___ 2 to 10 cigarettes per day
   ___ 11 to 20 cigarettes per day
   ___ 21 or more cigarettes per day

19. During the past 6 months, did you try to quit smoking cigarettes?
   ___ You have never done this during your life
   ___ Yes
   ___ No
20. During the past 30 days, did you use chewing tobacco, such as Redman, Levi Garrett, or Beechnut?
   _ Yes
   _ No

21. During the past 30 days, did you use snuff, such as Skoal, Skoal Bandits, or Copenhagen?
   _ Yes
   _ No

The next questions ask about drinking alcohol. This includes beer, wine, wine coolers, and liquor such as rum, gin, vodka, or whiskey.

22. About how old were you when you had at least one drink of alcohol for the first time?
   _ You have never done this during your life
   _ Under 10 years old
   _ 10 to 13 years old
   _ 14 to 16 years old
   _ 17 years or older

23. During your life, on about how many days have you had at least one drink of alcohol?
   _ You have never done this during your life
   _ 1 or 2 days
   _ 3 to 20 days
   _ 21 to 40 days
   _ 41 to 99 days
   _ 100 or more days

24. During the past 30 days, on about how many days did you have at least one drink of alcohol?
   _ You have never done this during your life
   None
   _ 1 or 2 days
   _ 3 to 10 days
   _ 11 to 29 days
   _ All 30 days
Appendix A

Proposed Questionnaire Revisions

25. During the **past 30 days**, on about how many **days** did you have 5 or more drinks of alcohol?

   - You have never done this during your life
   - None
   - 1 or 2 days
   - 3 to 10 days
   - 11 to 20 days
   - 21 or more days

26. During the **past 30 days**, about how many **times** did you ride in a car or other vehicle driven by someone who had any alcohol to drink?

   - None
   - 1 time
   - 2 to 5 times
   - 6 or more times

27. During the **past 30 days**, about how many **times** did you drive a car or other vehicle after you had any alcohol to drink?

   - None
   - 1 time
   - 2 to 5 times
   - 6 or more times

*The next questions ask about the use of marijuana, grass, or pot.*

28. About how old were you when you tried marijuana for the first time?

   - You have never done this during your life
   - Under 10 years old
   - 10 to 13 years old
   - 14 to 16 years old
   - 17 years or older
29. **During your life, about how many times have you used marijuana?**

   - You have never done this during your life
   - 1 or 2 times
   - 3 to 20 times
   - 21 to 40 times
   - 41 to 99 times
   - 100 or more times

30. **During the past 30 days, about how many times did you use marijuana?**

   - You have never done this during your life
   - None
   - 1 or 2 times
   - 3 to 9 times
   - 10 to 19 times
   - 20 or more times

The next questions ask about other drugs. These questions may be sensitive but it is important for us to get accurate information.

31. **About how old were you when you tried any form of cocaine, including powder, crack, or freebase, for the first time?**

   - You have never done this during your life
   - Under 10 years old
   - 10 to 13 years old
   - 14 to 16 years old
   - 17 years or older

32. **During your life, about how many times have you used any form of cocaine, including powder, crack, or freebase?**

   - You have never done this during your life
   - 1 or 2 times
   - 3 to 9 times
   - 10 to 19 times
   - 20 or more times
Appendix A

Proposed Questionnaire Revisions

33. During the past 30 days, about how many times did you use any form of cocaine, including powder, crack, or freebase?

- You have never done this during your life
- None
- 1 or 2 times
- 3 to 9 times
- 10 to 19 times
- 20 or more times

34. During your life, about how many times have you used the crack or freebase forms of cocaine?

- You have never done this during your life
- None
- 1 of 2 times
- 3 to 9 times
- 10 to 19 times
- 20 or more times

35. During your life, about how many times have you used any other type of illegal drug, such as LSD, PCP, ecstasy, mushrooms, speed, ice, heroin, or pills without a doctor’s prescription?

- You have never done this during your life
- 1 or 2 times
- 3 to 9 times
- 10 to 19 times
- 20 or more times

36. During your life, about how many times have you taken steroid pills or shots without a doctor’s prescription?

- You have never done this during your life
- 1 or 2 times
- 3 to 9 times
- 10 to 19 times
- 20 or more times

37. During your life, have you ever injected or shot up any illegal drug?

- Yes
- No
Appendix A

Proposed Questionnaire Revisions

38. Have you ever been taught about AIDS or HIV infection in school?
   _ Yes
   _ No
   _ Not sure

39. Have you ever talked about AIDS or HIV infection with your parents or other adults in your family?
   _ Yes
   _ No
   _ Not sure

The next few questions ask about your weight.

*40. How do you think of yourself?
   _ Very underweight
   _ Somewhat underweight
   _ About the right weight
   _ Somewhat overweight
   _ Very overweight

*41. Are you trying to do anything about your weight?
   _ Yes, lose weight
   _ Yes, gain weight
   _ No, not trying to do anything

42. During the past 7 days, did you diet to lose weight or keep from gaining weight?
   _ Yes
   _ No

43. During the past 7 days, did you exercise to lose weight or keep from gaining weight?
   _ Yes
   _ No
Appendix A

Proposed Questionnaire Revisions

44. During the past 7 days, did you use some other method besides diet or exercise to lose weight or keep from gaining weight?
   - Yes
   - No

45. During the past 7 days, did you make yourself vomit to lose weight or keep from gaining weight?
   - Yes
   - No

46. During the past 7 days, did you take diet pills to lose weight or keep from gaining weight?
   - Yes
   - No

47. During the past 7 days, did you use some other method besides making yourself vomit or taking diet pills to lose weight or keep from gaining weight?
   - Yes
   - No

The next questions ask about food you ate yesterday. Think about all meals and snacks you ate yesterday from the time you got up until you went to bed. Be sure to include food you ate at home, at school, at restaurants, or anywhere else.

48. Yesterday, did you drink any fruit juice?
   - Yes, once only
   - Yes, twice or more
   - No

49. Yesterday, did you eat any fruit?
   - Yes, once only
   - Yes, twice or more
   - No
50. Yesterday, did you eat any green salad?
   - Yes, once only
   - Yes, twice or more
   - No

51. Yesterday, did you eat any cooked vegetables?
   - Yes, once only
   - Yes, twice or more
   - No

52. Yesterday, did you eat any hamburger, hot dogs, or sausage?
   - Yes, once only
   - Yes, twice or more
   - No

53. Yesterday, did you eat any french fries or potato chips?
   - Yes, once only
   - Yes, twice or more
   - No

54. Yesterday, did you eat any cookies, doughnuts, pie, or cake?
   - Yes, once only
   - Yes, twice or more
   - No

The next questions ask about physical activities that you did in the past 7 days.

55. On how many of the past 7 days did you do stretching exercises, such as toe touching, knee bending or leg stretching?
   - None
   - 1 day
   - 2 days
   - 3 days
   - 4 days
   - 5 days
   - 6 days
   - 7 days
56. On how many of the past 7 days did you do exercises to strengthen or tone your muscles, such as push-ups, sit-ups, or weight lifting?

- None
- 1 day
- 2 days
- 3 days
- 4 days
- 5 days
- 6 days
- 7 days

57. On how many of the past 7 days did you do any house cleaning or yardwork for at least 30 minutes at a time?

- None
- 1 day
- 2 days
- 3 days
- 4 days
- 5 days
- 6 days
- 7 days

58. On how many of the past 7 days did you walk or bicycle for at least 30 minutes at a time? Include walking or bicycling to or from school or work.

- None
- 1 day
- 2 days
- 3 days
- 4 days
- 5 days
- 6 days
- 7 days
59. On how many of the past 7 days did you play baseball, softball, or frisbee?

- None
- 1 day
- 2 days
- 3 days
- 4 days
- 5 days
- 6 days
- 7 days

60. On how many of the past 7 days did you play basketball, football, or soccer?

- None
- 1 day
- 2 days
- 3 days
- 4 days
- 5 days
- 6 days
- 7 days

61. On how many of the past 7 days did you roller skate, ice skate, ski, or skateboard?

- None
- 1 day
- 2 days
- 3 days
- 4 days
- 5 days
- 6 days
- 7 days

62. On how many of the past 7 days did you run, jog, or swim for exercise?

- None
- 1 day
- 2 days
- 3 days
- 4 days
- 5 days
- 6 days
- 7 days
63. On how many of the past 7 days did you play tennis, racquetball, or squash?

- None
- 1 day
- 2 days
- 3 days
- 4 days
- 5 days
- 6 days
- 7 days

64. On how many of the past 7 days did you do aerobics or dance?

- None
- 1 day
- 2 days
- 3 days
- 4 days
- 5 days
- 6 days
- 7 days

65. On how many of the past 7 days did you take part in sports or exercise so that you sweated and breathed hard?

- None
- 1 day
- 2 days
- 3 days
- 4 days
- 5 days
- 6 days
- 7 days

*If you are 12 or 13 years old, please stop the tape and tell the interviewer you are done.*

*If you are 14 years of age or older, please continue.*
The next questions ask about sexual relations you may have had.

66. Have you ever had sexual intercourse?
   _ Yes
   _ No

67. About how old were you when you had sexual intercourse for the first time?
   _ You have never done this during your life
   _ Under 10 years old
   _ 10 to 13 years old
   _ 14 to 16 years old
   _ 17 years or older

68. During your life, with how many people have you had sexual intercourse?
   _ You have never done this during your life
   _ 1 person
   _ 2 people
   _ 3 people
   _ 4 people
   _ 5 people
   _ 6 or more people

69. During the past 3 months, with how many people did you have sexual intercourse?
   _ You have never done this during your life
   _ None
   _ 1 person
   _ 2 people
   _ 3 people
   _ 4 people
   _ 5 people
   _ 6 or more people
The next questions ask about the last time you had sexual intercourse.

70. Did you drink alcohol or use drugs before you had sexual intercourse the last time?

   __ You have never done this during your life
   __ Yes
   __ No

*71. The last time you had sexual intercourse, what one method did you or your partner use to prevent pregnancy?

   IN ANSWERING THIS QUESTION PLEASE MARK ALL OF THE ANSWER CATEGORIES THAT APPLY TO YOU

   __ You have never had sexual intercourse
   __ No method was used to prevent pregnancy
   __ Birth control pills
   __ Condoms
   __ Withdrawal
   __ Some other method
   __ Not sure what method was used

73. How many times have you been pregnant or gotten someone pregnant?

   __ None
   __ 1 time
   __ 2 or more times
   __ Not sure

74. Have you ever been told by a doctor or nurse that you had a sexually transmitted disease such as genital herpes, genital warts, chlamydia, syphilis, AIDS, or HIV infection?

   __ Yes
   __ No

These are all the questions we have. Thanks very much for your cooperation in answering these questions. Please stop and tell the interviewer you are done.