

CHAPTER 3

QUESTIONNAIRE METHODOLOGY

This chapter discusses the development and the implementation of the participant questionnaires used in the 1987 followup: the 1987 interval questionnaire and the 1982 Baseline questionnaire.

The 1987 participant interval questionnaire was designed to capture the participant's health history in the interval since his participation in the 1985 followup. Data collection was comparable to the Baseline and 1985 followup efforts: The questionnaire was very similar, and it was administered using the same face-to-face methodology to virtually the same population. In the Baseline study, interviews were conducted in the participants' homes, and the 1985 and 1987 followup interviews were conducted at the physical examination site. The revised methodology was more efficient and better subject to quality control.

Since some study subjects refused to participate in 1982 and 1985 and other participants were new to the study, the Baseline questionnaire used during the Baseline phase was administered to these new participants. For the convenience of these participants, the Baseline questionnaires were administered in the homes of these individuals or at the physical examination site, at the discretion of the participant.

Questionnaire development and administration and scheduling of participants were conducted by the National Opinion Research Center (NORC), a social science research center at the University of Chicago.

QUESTIONNAIRE DEVELOPMENT

The goal of questionnaire development was to maintain to the maximum extent possible the question wordings, context, and procedures that were used in the 1982 Baseline study and 1985 followup. The largest task of questionnaire development was asking for interval histories on crucial questionnaire items to update the information provided by the 1985 questionnaires. The 1982 Baseline questionnaire captured information on demographics, education, occupation, medical history, study compliance, toxic exposures, and reproductive experience. In general, histories and one-time questions (where the response does not change over time) were obtained in the Baseline questionnaire, which is completed for each participant the first time he participates in the study. For the 1985 interval questionnaire, new questions on risk factors for skin cancer and personality type were added. In addition, enhancements were made to improve data collection for birth defects and drinking habits, and questions to capture a more detailed smoking history were added.

In general, the 1987 interval questionnaire built upon the changes made in the 1985 interval questionnaire and was expanded to include detailed drinking history and sleep disorder questions. Since some of the study subjects did not participate in the 1985 followup, the 1987 interval questionnaire was structured to capture one-time questions, such as ethnic

background, and histories, such as smoking history, which were first asked in the 1985 followup, on the new and rejoining (those who completed the Baseline questionnaire but did not complete the 1985 interval questionnaire) participants only. Questions that updated the histories were asked of the participants who attended the 1985 followup.

A copy of the 1987 participant interval questionnaire is provided in Appendix A.

Even when given a precise "starting date," respondents frequently repeat information given earlier, neglect to report new information because they thought they had previously reported it, and otherwise misplace events in time or forget them completely. The best means of preventing such errors is through the use of bounded recall, in which the respondent is reminded of information he has already reported and new information is sought with reference to an updated information sheet. An information sheet containing a computer-generated summary of key respondent answers to the Baseline and 1985 surveys was used to provide bounded recall for participants. Among the data elements included were date of birth, highest educational degree, military status at last interview, marital status at last interview, and name of spouse.

The questionnaire was pretested on 11 men who participated in the pretest examination.

INTERVIEWER TRAINING

Twelve interviewers were recruited and trained to administer the interval questionnaires by NORC's field management and Chicago office staffs in April 1987. Six of the interviewers had administered interval questionnaires in the 1985 followup. The onsite NORC interview staff was not informed of the exposure status of any study participant either before or after contract completion. The site supervisor reported to the Project Director in Chicago on a weekly basis, and quarterly visits were made to the site by the Director. The site supervisor observed a sample of interviews for each interviewer and reviewed and edited questionnaires for completeness.

In July 1987, personal interviewers were recruited to conduct Baseline interviews for new participants and previous refusals. The interviewers were trained in the Chicago NORC office, using questionnaires and procedures established for the Baseline survey. They were supervised by an assistant survey director in the NORC office, who edited each completed questionnaire and talked with each interviewer regularly.

SCHEDULING OF PARTICIPANTS

NORC recruited and trained four schedulers to perform the initial contacts with study subjects. Their training included background information on the details and purpose of the study, simulation of the actual scheduling of calls, documentation of results, and conversion of refusals. An initial letter was sent by the Air Force to each study subject, informing him of the upcoming 1985 followup. The NORC scheduler then followed this letter with a call to attempt to schedule the participant.

Refusals occurred at a number of steps in the scheduling process. As in the 1985 followup, a team of conversion specialists was assigned to contact refusing study subjects and attempt conversion of them to full compliance. Help in conversion was also received from individuals at the U.S. Air Force School of Aerospace Medicine.

The Air Force Health Study (AFHS) Protocol¹ specifies the replacement strategy for noncompliant Comparisons. Basically a noncompliant Comparison was replaced by a new Comparison from a matched set of up to 10 candidate Comparisons whose self-perception of health matches that of the noncompliant Comparison, if one was found. In 1985, a telephone survey of uncontacted Comparisons was conducted to gather data on the general health status of the 7,963 replacement candidates for the active Comparison group. The sample consisted of men who served in C-130 units in Southeast Asia between 1962 and 1971, but who did not participate actively in the Baseline phase of the study. The key question was, "Compared to other people your age, would you say that your health is...excellent, good, fair, poor?" The data from the 1985 telephone survey of uncontacted Comparisons were used to select a replacement whose self-reported health status matched that of the noncompliant Comparison. If a willing replacement was not found in the refusal's matched set by this method, the perception of health status variable was dichotomized into excellent/good versus fair/poor, and a new replacement was selected from the Comparison set. If this second attempt at identifying a suitable replacement failed, no replacement was made. The selection procedure is illustrated in Figure 3-1. In this example, the first randomly ordered Comparison was contacted but refused to participate. In the second attempt, the Comparison was deceased. The third Comparison volunteered to participate in the morbidity study.

The Baseline interviewer contacted the potential new study participant by telephone for scheduling the Baseline interview. The Baseline questionnaire was administered in the home or at the examination site by one of the interviewers who had been trained in administering that questionnaire. Of the 74 participant Baseline questionnaires administered during the 1987 followup, 37 were conducted at the examination site.

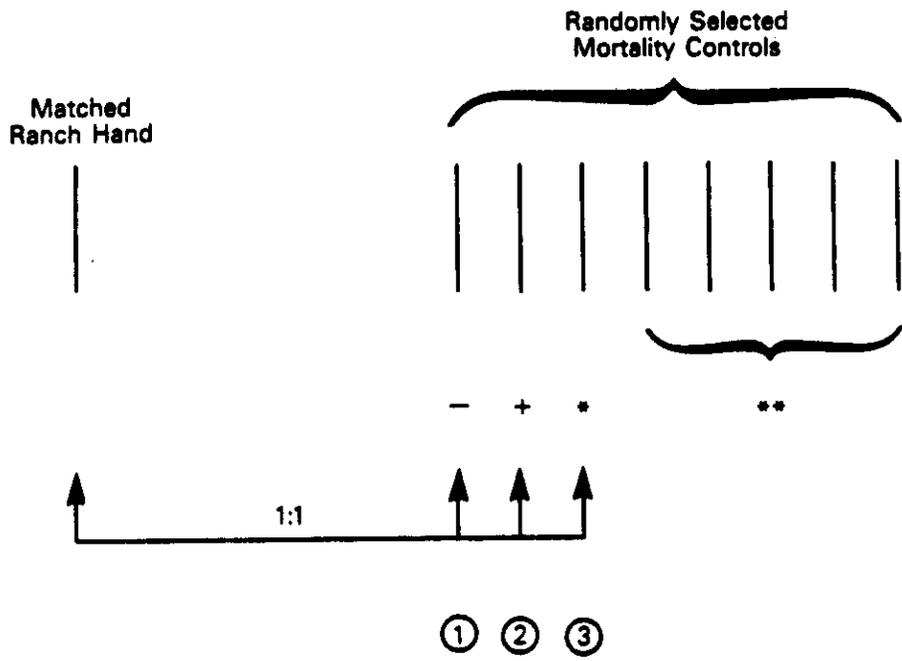
The supervisors of the Baseline interviewers and schedulers conducted the locating efforts for new and interval participants. Procedures similar to those used in 1982 and 1985 were followed: a postal search, followed by a local telephone directory search, a motor vehicle registration search, and personal locating efforts in the area of last known residence when appropriate. The Air Force also provided locating support through its records.

DATA COLLECTION

Upon arrival at the Scripps Clinic and Research Foundation, the participant received a schedule including the time and place for the 1987 interval interview, and an interviewer was appointed to conduct the interview.

As in all of the personal interviews for the AFHS, interviewers were required to ask questions exactly as written, were not allowed to interpret questions or inject personal commentary, and were not allowed to skip between

Comparison Individuals (Randomly Ordered)



- Unwilling
- + Deceased
- * Volunteered
- ** Replacement Candidates

Figure 3-1.
Selection Procedure for the Questionnaire,
Physical Examination, and Followup Study

sections of the questionnaire. They were also instructed to probe "don't know" answers at least once. During the interview, medical record release forms were signed; if the participant did not have all of the information with him to complete the form during the interview, the participant was given blank forms and instructions to take with him to complete the forms at home and return them to the Air Force.

One box of completed questionnaires was broken during shipment prior to the automation of the data, and two questionnaires were lost. After repeated unsuccessful attempts to locate the missing questionnaires, the two participants were reinterviewed by telephone.

DATA PROCESSING

All questionnaires completed at the examination site were reviewed and edited by the interviewer site supervisor. In addition, a second review for completeness to ensure that there were no blanks except for logical branching was conducted. These reviews were conducted prior to the participant's departure from the examination site so that any missing information could be retrieved from the participant onsite. The information sheets, completed questionnaires, medical records, and copies of the physical examination forms were organized by participant and sent to the Air Force for medical coding.

After completion of the medical coding, the questionnaires were forwarded to the NORC Chicago office for data processing. Upon receipt, the questionnaires were logged into the receipt and control system and batched for processing. Responses to the open-ended questions were coded and the data were automated. During data entry, the data were checked against valid values and ranges, and missing critical items were flagged. Any further data retrieval was conducted by telephone contacts. In addition, 10 percent of the items in each questionnaire were verified. In the next step, an editing program was executed, which checked for a wide range of errors through single column and intercolumn specifications for valid ranges; interitem consistency; and logic, date, and arithmetic checks. The editing program produced an error sheet for each questionnaire where a discrepancy was identified. The questionnaires were reviewed to resolve the discrepancies on a case-by-case basis. No changes were ever made to the hard copy data; corrections were entered into the data base, and the editing program was rerun. This process was repeated until no errors were detected.

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REFERENCES

1. Lathrop, G.D., W.H. Wolfe, R.A. Albanese, and P.M. Moynahan. 1982. Epidemiologic investigation of health effects in Air Force personnel following exposure to herbicides: Study protocol, NTIS: AD A 122 250. USAF School of Aerospace Medicine, Brooks Air Force Base, Texas.