

## STRATEGIES TO RECRUIT SUBJECTS FOR QUESTIONNAIRE DESIGN LABORATORIES

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The National Laboratory for Collaborative Research in Cognition and Survey Measurement was established at the National Center for Health Statistics (NCHS) in 1986. The National Laboratory's mission is to promote and advance research on the cognitive aspects of survey methodology. The laboratory consists of the Collaborative Research Program and the Questionnaire Design Research Laboratory (QDRL). The QDRL (1) assists in the development and testing of questionnaires for other branches of NCHS and other Federal agencies and (2) designs, conducts, and disseminates the results of research projects that further the art and science of questionnaire design. By focusing on the QDRL, we will discuss some strengths and problems involved in the recruitment of subjects for government-based questionnaire design research.

The QDRL relies on paid volunteers as subjects. Techniques that are used within the laboratory include intensive cognitive interviews, think-alouds, sorting tasks, and focus groups. The QDRL tries to recruit people with a range of backgrounds and demographic characteristics so that the findings can be used to design questionnaires that are understandable to a representative population. In

some cases, subjects with particular health conditions or from special populations are recruited so that we can test special subsets of questions.

Issues related to volunteer subjects for psychological experiments have been examined extensively over the years; less attention has been given to recruitment of subjects for questionnaire design research. The literature about recruiting subjects for psychological experiments suggests relevant directions. In their seminal work, Rosenthal & Rosnow review many studies of volunteers for psychological experiments and illuminate situational and motivational components. Amongst demographic variables, those which carry some significance in the recruitment of volunteers include sex, education, age, marital status, social class, religion, and geographic origin.

For our current purposes, Rosenthal & Rosnow's most salient conclusions are that volunteers: (1) are more likely to be female than male; (2) tend to be younger than nonvolunteers; and (3) tend to be better educated than nonvolunteers. If these conclusions bear up for the task of questionnaire design research, they suggest general limitations of routine recruitment strategies for laboratory-based questionnaire testing methods.

Following an overview of QDRL recruitment methods, we will

## RECRUITMENT PROCESS

focus our discussion on subjects interviewed for at least one of three studies. We will focus on the variables of sex, education, and age; these variables are either unobtrusive measures or are easily obtained from subjects without arousing any sensitivity. We had hoped to examine the role of race and income in our recruitment strategies, but our available database is not adequate at this time for a full consideration of those variables.

Our study-specific data is drawn from three projects conducted over a period of two years. Two of the projects, HIS 91 and HIS 92, were along the lines of production work done for the National Health Interview Survey. The third project, SQR, was a series of small experiments conducted as part of a sensitive questions research study.

In both HIS 91 and HIS 92, the bulk of the QDRL work was conducted one year prior to the actual fielding of the applicable NHIS. In 1990, the QDRL tested the Health Promotion and Disease Prevention<sup>1</sup> supplement for the Office of Disease Prevention and Health Promotion and a supplement sponsored by the National Institute on Drug Abuse to assess drug-use and dependency.<sup>2</sup> In 1991, the QDRL tested sections for the National Cancer Institute-sponsored "Cancer Risk Factors" supplement.<sup>3</sup>

The study "SQR" was a series of four experiments conducted to explore issues related to asking sensitive questions. For purposes of this paper, we will restrict our discussion to interviewing that was conducted in-house.

The methods that the QDRL uses to recruit subjects include newspaper advertisements, flyers, off-site recruitments, and recontacts with previous subjects. Newspaper advertisements are the main source the QDRL uses to recruit a large number of subjects quickly. In newspaper ads, we list any specific requirements for volunteers, such as age, health conditions, or gender; we also specify that we pay an incentive of \$20 to compensate for time and travel costs. The newspaper we use most often is The Washington Post because it has a large circulation, but we also use county newspapers and college papers such as The University of Maryland Diamondback. The Post ads usually yield an average return of about 100 responses in three days while the other newspapers yield fewer responses.

Flyers are another source we use for recruiting subjects. While flyers are less expensive than newspaper ads and can be more effective at targeting specific groups of people, they typically do not yield as many responses as quickly. Also, phone calls from people responding to flyers do not come in as rapidly as responses to newspaper ads; as a result, some volunteers call after the study is completed.

We have found through observations that people who respond to our ads in the Post are likely to be white, single, and highly educated. If we need to recruit subjects from minority backgrounds, it is more useful to use flyers and to place them in places such as Y.M.C.A.s and churches that are in areas that we know have large

minority populations. In the past, the various organizations at which we have interviewed or posted flyers, such as churches and drug clinics, have been very cooperative and receptive to our projects.

Finally, we sometimes use the same subject for more than one project. This enables us to save time and effort. We keep a detailed data base of all subjects who are interviewed along with various demographic information. By reusing the same people, we are assured that they are able to work within our framework and we also have the demographic information needed to bring in subjects who fit the characteristics that we need at the time. Because of the danger of over-educating our subject pool, we limit subjects to three interviews. We do not want subjects to become so familiar with our process that they try too hard to give us suggestions and fail to see the questions as a typical respondent in the field would.

### ANALYSIS

A volunteer is a person who responds to one of our recruitment actions. The volunteer indicates a general willingness to be interviewed in the QDRL. The volunteer may be selected to be interviewed as a subject for a particular project.

Overall, we are concerned with the types of subjects we are able to bring into the QDRL. This requires us to consider our pool of volunteers and the people we actually interview. We are also interested in any trends amongst subjects who do not keep scheduled appointments. For the current

review, we will focus primarily on description of actual subjects.

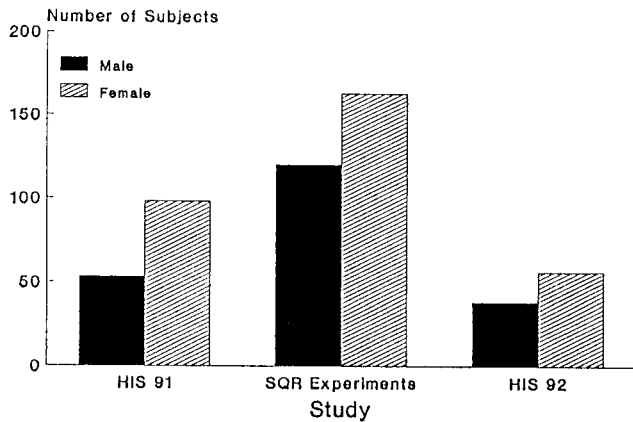
Subject Sex: Amongst people who respond to QDRL recruitment efforts, it is a consistent factor that more women than men volunteer. The ratio of female to male volunteers is as high as 3:1 depending upon the recruitment source. As a result, in order to maintain balance on this key demographic criteria, many women who are potential subjects are never called to the laboratory. In most recruitments oriented towards the general population, a large percentage of female volunteers will not be contacted.

We reviewed the relationship between the three variables and the rate of no-shows amongst volunteers scheduled for the three studies. We found that women were somewhat more likely than men to miss a scheduled appointment; however, the numbers of no-shows were relatively small so we cannot make much of this seeming discrepancy in behavior. Certainly one possibility is that the men who do volunteer tend to be more highly motivated.

Table 1 indicates the combined effect of recruitment and no-shows upon the numbers of completed interviews for the three specific studies. As in our basic recruitment ratios, the number of female subjects outnumbered the number of male subjects in each study. In all cases, however, we were able to bring relatively large numbers of men into the laboratory for interviews. Of course, we controlled the ratio by interviewing a larger percentage of male volunteers than female volunteers. For

purposes of questionnaire design research, the important issue seems to be that we are able to interview enough men so that we can assure that the laboratory development of a questionnaire is not grossly biased in any particular direction.

Table 1  
Sex of subjects for 3 studies



SOURCE: NCHS, 1991

Subject Age: Age distribution for potential QDRL subjects tends to be balanced. The data for HIS 91 and SQR are skewed because of deliberate efforts to interview younger volunteers. For HIS 91, we were testing the drug-use supplement and we wanted to assure a large pool of subjects who would have some knowledge of cocaine and marijuana use. For the SQR experiments, the age range had been limited to people between the ages of 17 and 54, again to better assure familiarity with drug use.

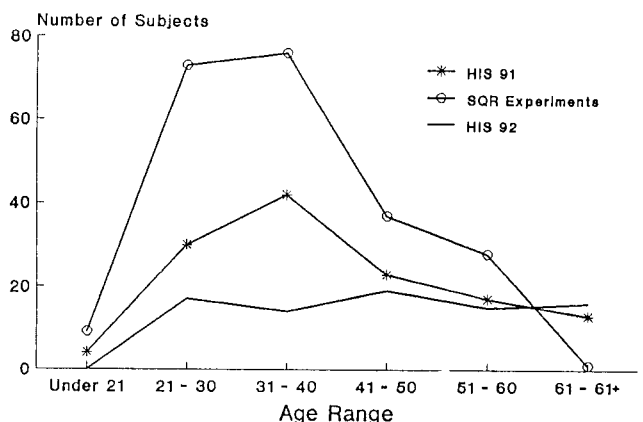
Aside from our special interest in interviewing younger volunteers for the various drug studies, our interviews reflect a balanced age breakdown. When we need younger or older subjects, we target our advertising and other recruitment actions as needed. We have not encountered major

problems in recruiting volunteers across most age ranges. The sole exception has been recruitment of respondents who are into their seventies or eighties; in those cases, we have conducted offsite interviews.

In reviewing our data files, we found that volunteers who were older than 50 years of age were less likely to miss an appointment than were younger volunteers. We have not looked at the possible confounding variables such as employment status; thus, we cannot make any definitive statements about this descriptive finding. Given that older people seem less likely to volunteer at the outset, it is fortunate that the no-show rate is relatively low for this population.

Table 2 indicates the impact of recruitment and no-shows upon the three specific studies. The ages of subjects were relatively evenly distributed. When necessary, we were able to bring relatively large numbers of all age groups into the laboratory for interviews. We could skew the distribution as indicated for specific studies. For purposes of questionnaire design research, the important issue seems to be that we are able to control for age of subjects.

Table 2  
Age ranges for 3 studies



SOURCE: NCHS, 1991

Subject Education: The education level of QDRL subjects is a key variable which differentiates QDRL subjects from the general population. It has been consistently difficult for the QDRL to recruit subjects with lower education levels, especially subjects who have not completed high school. Overall, we have been much more successful in recruiting people with education beyond high school.

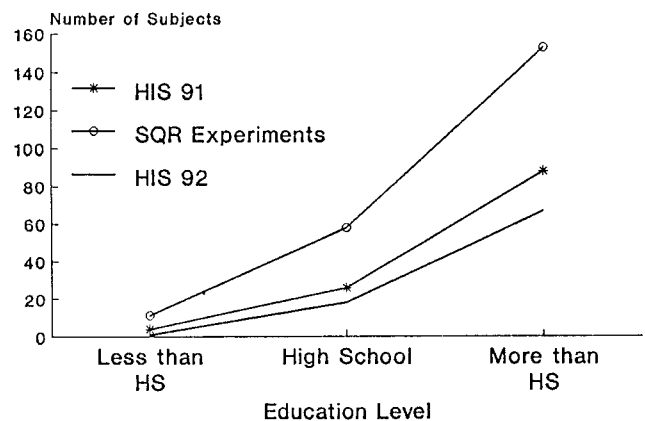
To some degree, the skewed education distribution reflects the recruitment sources, especially the large number of volunteers recruited through The Washington Post and Diamondback newspapers. Insofar as distribution goes, the Prince George's Journal and targeted flyers are our best means of recruiting lower-education volunteers. However, the latter two sources also yield the lowest numbers of volunteers per recruitment action; if we relied on the PG Journal and flyers, we would not be able to recruit enough volunteers to meet our interviewing needs in the QDRL.

The problem in recruiting volunteers with lower-education levels is compounded by the rate of no-shows amongst those volunteers. As before, we need to be cautious in our interpretations given the small numbers involved. Nonetheless, amongst scheduled appointments in which we know the volunteer's education level, almost one-half of volunteers who did not complete high school did not keep the scheduled appointment. The likelihood that a scheduled volunteer will not keep an appointment declines as the level of education increases.

The impact on in-house studies is apparent by reviewing the graph shown in Table 3. In

all three studies, QDRL subjects were likely to have had post-high-school education. By no means does this negate the value of laboratory-based testing. As the graph also indicates, we were able to conduct some interviews with high school graduates and, occasionally, with subjects who did not complete high school.

Table 3  
Education levels for 3 studies



SOURCE: NCHS, 1991

Overall, then, potential QDRL subjects are more likely to be female than male. Subjects also tend to be under 40 years old, although there is adequate variation in age distribution. Perhaps of most significance is the level of education for subjects that were used in the three studies and, generally, of people who volunteer for QDRL research. As with other variables, we need to be cautious in our interpretation given the number of subjects for whom we are missing data. Nonetheless, it seems apparent that our laboratory subjects tend to have higher levels of education than the general population.

We undertook the current study to learn more about the types of subjects we recruit for questionnaire design research.

Many survey organizations in government, academia, and private industry now engage in cognitive testing of survey instruments. Given the recognized strengths of such testing, it is important that we continue to share information about recruitment strategies and outcomes.

#### NOTES

<sup>1</sup>This supplement included sections that contained questions about hearing, pregnancy and smoking, child health, tobacco use, nutrition, immunization and infectious diseases, environmental health, injuries, occupational safety and health, heart disease and stroke, other chronic and disabling conditions, health education and preventive services, physical activity and fitness, alcohol use, mental health and behavioral disorders, and oral health.

<sup>2</sup>As part of the development process for the drug-use supplement, we conducted 12 interviews at a local drug rehabilitation clinic. The subjects for those interviews were guaranteed anonymity; as a result, we did not obtain demographic information. Based upon observation, 6 subjects were male and 6 were female. The ages seemed to range from 18 to late 30's.

<sup>3</sup>The cancer supplement is fielded as a split-sample questionnaire. One half of the national sample will receive the Cancer Control supplement which includes questions about access

to medical care, height and weight, cancer screening knowledge and practice, cancer survivorship, general knowledge and attitudes, smoking habits and tobacco use, and exposure to smoke at the workplace. The other half of the sample will be administered the Epidemiology supplement which includes questions about food intake frequency, vitamin and mineral intake, height and weight, food knowledge, smoking habits, cancer survivorship, and occupational exposure to chemicals or radiation.

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