Editorial

Responses to Survey Research: Transparency and Representativeness Are Key

Although this will be a far from exhaustive discussion of the topic, the purpose of this editorial is to briefly address the critical nature of response rates in survey research. Survey research is a method of gathering data from a subset or sample of individuals intended to be representative of the population being studied.[1] There are few instances in which data can be obtained from the entire target population; hence, researchers must routinely rely on data from properly selected samples to describe characteristics or attributes of the target population.[2]

The population characteristics or attributes of interest to survey researchers include, but are not limited to, demographic characteristics such as employment and marital status, psychological constructs such as opinions and preferences, and behaviors such as buying and television-viewing habits. In medical care or health services survey research, we are particularly interested in self-reported health status, health-related quality of life, symptom experience, and patient satisfaction, as well as health-related behaviors such as smoking status, physical activity, dietary habits, and medication adherence.

Survey research commonly uses a questionnaire as its primary data collection tool. Questionnaire development is both an art and a science; however, it is approached far too casually by some clinicians and/or researchers. A discussion of questionnaire development is beyond the scope of this editorial, and the topic has been covered thoroughly elsewhere.[3,4] My comments regarding survey response rates assume the administration of a properly designed and psychometrically tested questionnaire. Needless to say, poorly designed questionnaires produce data of poor quality and limited value.

A questionnaire can be administered in a variety of ways at a variety of locations, including in person (eg, interviewer- or self-administered), via the telephone (eg, interviewer- or electronically administered), by mail, or on the Internet. However, regardless of the location or mode of administration, the representativeness of the sample completing the questionnaire is of utmost importance. Representativeness, or generalizability to the target population, first depends on the quality of the sample selection, or sampling, process. Optimally, every member of the target population should have an equal probability of being selected for the study sample. As with questionnaire development, sampling is a topic that deserves much greater attention than is possible here, and it has been addressed in numerous publications.[5,6]

In general, the response rate can be defined as the number of respondents divided by the number of eligible subjects in the sample. However, an operational definition of the response rate in the context of a specific study should be provided in any report of survey results, including a full explanation of the determination of "eligible subjects." A review of survey response rates reported in the professional literature found that over a quarter of the articles audited failed to provide a definition of response rate.[7] The authors of that review stated that "when a 'response rate' is given with no definition, it can mean anything, particularly in the absence of any additional information regarding sample disposition." In addition, there may be a need to distinguish between the overall, or "target unit" (ie, study subject), response rate and item-level response rates. Although an overall response rate may be considered acceptable, very low rates of response to individual questionnaire items can be problematic, particularly if the items represent important study variables. In its statistical standards, the National Center for Education Statistics states that item response rates for each key item should be at least 90%.[8]

The lower the response rate, the higher the likelihood of response bias.[9] Response bias stems from survey respondents differing in some way from nonrespondents and, therefore, not being representative of the target population. Most of the time, response bias is very hard to rule out because of a lack of sufficient information on nonrespondents. Hence, it is imperative that researchers design their survey method to optimize response rates.[10,11] Nonetheless, assuming the selection of an appropriate sample (in terms of both size and representativeness) and use of a properly developed and tested questionnaire, what is an acceptable response rate?

In *Survey Research Methods*, Fowler stated that "There is no agreed-upon standard for a minimum acceptable response rate. The Office of Management and Budget of the federal government, which reviews surveys done under contract to the government, generally asks that procedures be likely to yield a response rate in excess of 75%."[12] Baily, in *Methods of Social Research*, asserted that the minimal acceptable response rate is 75%.[13] Fowler goes on to say that "one occasionally will see reports of mail surveys in which 5% to 20% of the selected sample responded. In such instances, the final sample has little relationship to the original sampling process; those responding are essentially self-selected. It is very unlikely that such procedures will provide any credible statistics about the characteristics of the population as a whole."[12]

However, a reasonable minimum response rate may be somewhere in the middle. In *Investigating the Social World: The Process and Practice of Research*, Schutt indicated that a response rate of <60% was unacceptable,[14] whereas in *Survey Research Methods*, Babbie stated that a 50% response rate was adequate.[15] As a reviewer, I generally believe that if more than half of a sample fails to complete the study questionnaire, the respondents' representativeness of the target population is compromised (unless proved otherwise). Nevertheless, it appears that few professional or scientific journals have an editorial policy that includes a minimum standard for response rates; rather, it seems that reviewers make judgments about the adequacy of response rates on a case-by-case basis.[7] That is a practical and potentially effective approach, as long as response rates are sufficiently considered during the peer-review process.

Of equal importance is transparency in the reporting of response rates. As in the CONSORT guidelines for randomized controlled trials,[16] the flow of study subjects from initial sample selection and contact through study completion and analysis should be provided. Dropouts or exclusions for any reason over the course of the study should be documented, and every individual in the study sample should be accounted for clearly. A well-structured presentation of these data can enhance the credibility and perceived value of the survey results.

Survey research aimed at generalizing the results from the respondent sample to the target population is fraught with challenges. Survey research should neither be taken lightly by researchers[17] nor evaluated less carefully by reviewers of the resulting research reports. With few exceptions, we should expect published survey research to meet acceptable levels of scientific rigor, particularly with regard to the transparency of response rates and the representativeness of the study's results.

Stephen Joel Coons, PhD
Contributing Editor

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doi:10.1016/j.clinthera.2007.03.013