

A Question of Response Rate

Investigators discuss with a statistician a survey of patients being treated or monitored for high blood pressure. The survey aims to ascertain the patients' knowledge of hypertension and its management in general, and of their own condition specifically. The survey is initially sent out by mail (two mailings), and the response rate is a little under 50%. The investigators are now doing phone interviews with a random sample of nonrespondents to bring the response rate up. Is a 60% response rate sufficient for the type of survey described, or must the response rate be at least 70% for publication in a medical journal?

Solutions

The percentage of responses necessary would probably differ according to the type of study. In this survey of a population with a particular disease or a survey of a general population which aims to describe knowledge or behaviors, a 60% response rate might be acceptable, although 70% would be preferable. If this were a study looking at implementation of quality-of-care guidelines for diabetics or a follow-up study of people enrolled in a behavioral-intervention program, a 70% to 80% response rate would be desirable. If in this case there were both an intervention and a comparison group, it would be important for both groups to have a similar follow-up response rate. For a randomized clinical trial to demonstrate the comparative efficacy of a procedure or drug, a 90% response rate might be required, again with the proviso that both the intervention and control groups have similar follow-up response rates. If an author has data showing that the responses from a random sample of initial nonrespondents are very similar to those of initial respondents, this can increase the credibility of results of a survey or study with a response rate lower than desirable. In general, the higher the response rate, the more secure the reader will feel that the results are representative of the population being studied.

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There's no magic figure on response rates. Higher is better: 60% would be marginal, 70% is reasonable, 80% would be good, 90% would be excellent. The reason that lower response rates are problematic is, of course, that people who don't respond may well be different from those who do. Low response rates therefore can create sampling bias; the lower the rate, the greater the risk of such bias.

Various techniques are available for dealing with low response rates. The intensive follow-up of a sample of nonrespondents, as the researchers described in the question are doing, is one such technique; another is comparison of the demographic and other characteristics of nonrespondents with those of respondents to see whether the two groups are different. Comparison of the responses from "early responders" with those of "late responders" is a way of detecting differences between those who were eager to respond and those who held back.

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Any data are better than no data, so in my book there is no reason to reject a 60% response rate by itself. Instead, the error due to the lower response rate should be quantified as far as is possible. This can be done in at least two ways. First, you can put upper bounds on the errors of the averages by assuming that the remaining 10% all pick extreme answers. Second, you can study how the responses change with time—for example, how they change between the first and second follow-up—and arrive at an estimate of the error from that.

And if your boss tells you it has to be 70% or no deal, ask her or him what is so special about 70%. Why not 80% or 90%?

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How high a response rate is high enough depends on the questions being asked, the state of knowledge of the subject at the time of the survey, and how valuable the information is; we recognize that the nonrespondents may differ from the respondents. For example, a 50% response rate with respondents being ignorant of facts that the investigators thought the patients should know is useful information. Conversely, if the respondents are knowledgeable, one cannot assume that the nonrespondents are also knowledgeable. Thus, the answer to your question depends on why the investigators want to do this survey, how the results of the survey will be interpreted, and what will be done with the information after it is obtained. The question you ask is related to some aspects of the generalizability of the data obtained. With that as a given, determining the value of the data is a very different question.

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My old rule of thumb on response rates is 70%. The concern has to do with sampling bias; the “self-selected” sample (“respondents”) may differ in some systematic way that is related to the research topic. I’m not sure that there is one correct answer, and in this regard I am referencing an article I found on a Web search.¹ I checked the literature citations in it, and these sources seem to be from across disciplines, so I am led to believe that the information presented is of some quality. The primary source suggests a lack of consensus on the question that is not countered at the conclusion of the article.

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Reference

1. Roth PL, BeVier CA. Response rates in HRM/OB survey research: norms and correlates, 1990-1994. *J Management* 1998;24(1):97-117.

New Question: A Question of Permission

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The situations described as new questions in this column are not necessarily based on actual situations, and the ones that are may have been modified to focus the question. Send your responses to the new question to Della Mundy, Department of Medical Editing, Kaiser Foundation Research Institute, 1800 Harrison Street, 16th Floor, Oakland CA 94712-3429. Telephone 510-987-3573; fax 510-873-5131; e-mail della.mundy@kp.org.