

# Editorial

## Samples and Generalizations

This issue contains articles and reviews which raise issues concerning the extent to which generalization can be made from limited samples. These issues are important to both readers and authors, as consumers and producers of scholarly reports.

In their study of physical fitness in older Ontario dairy farmers, in this issue, Moore and Pfeiffer note that their participation rate and resulting sample size was “disappointing”, and they exhort the reader to interpret results cautiously because the sample is small and non-random. Enough information is provided for the reader to understand how an initial list of the total population of all 517 dairy farmers in a county yielded only 36 respondents. Some non-respondents were “refusals,” others were never contacted, and many were deemed ineligible for the study because they were not at least 50 years old. The Health Sciences Editor and I feel that the study merits publication because the authors are careful to state the risks to generalization. Despite these risks, the findings contribute to our knowledge base and can certainly inspire future research efforts.

Gold’s paper on siblings is a good example of theoretically-innovative research based on a small, specialized sample. People with certain characteristics (no living sibling, twin, never married, or childless) were excluded to control variability resulting from these factors. Gold sought out respondents from settings which likely attract older people more able to participate and more interested in participating in social contact. She carefully alerts the reader to the potential for bias and provides data showing the degree of representativeness of her sample. As Gold notes, this approach is suitable for exploratory research and the generation of theory.

Marshall’s paper on response and completion rates recommends the adoption of standard terminology to describe survey research sampling procedures, and reports the experience of three Canadian studies. The fourth paper, by Rosenthal, is based on one of these studies, and her text and first footnote provide a clear example of how sampling information should be conveyed in journal articles.

The Book Review section also refers to the importance of accurate reporting of sample data. Reviewing an important research report from the Ontario Association of Registered Nursing Assistants, French notes that the response rate to a mailed questionnaire was a meagre 29%, and that the ability to interpret the findings is hampered by failure of the report authors to describe the number of institutions in their sample, or the number of individuals per institution.

Idler reviews a book by Wan which is based on a large, U.S. national sample frequently used by social gerontologists for their analyses. Because the

study was based on a sample of "heads of household," it fails to represent married women. Idler points out that many of the book's generalizations are flawed as a result and further, that insufficient attention is given by the author to alerting readers to the implications of sample limitations for analysis.

In my view, we should be highly tolerant of small and unsystematic samples. Some of the most important scholarship in gerontology has come from studies with small or unrepresentative samples. One need think only of the original Duke Longitudinal Study, which generated a wealth of information. It began in 1955, with just 260 respondents, and was reduced by the second wave, in 1961, to just 183 respondents. Moreover, it was essentially a quota sample, with volunteers sought in age, sex, racial and socio-economic categories to reflect the characteristics of the three North Carolina study counties. The initial panel, as acknowledged by the investigators, was biased towards higher socio-economic status, higher activity levels and better health (Busse, Maddox and Associates, 1985, pp. 18-20). These biases did not prevent the investigators from developing and testing theories such as the activity theory of aging (even though these sample characteristics are important variables in that theory), but they did rule out generalizations to a larger population.

Some studies are based on such haphazardly selected respondents that the respondents cannot be called a sample at all. Still, such studies can often be highly useful. Accurate and detailed descriptions of sampling approaches are required in order for the reader to understand the extent to which findings are reliable and generalizable. However, generalizability from sample to population is often not the intent of researchers, who wish rather to explore causal patterns linking variables, or to develop meaningful concepts to understand phenomena. In causal analysis, so long as variability in the sample exists on the variables being analyzed, theory can be tested.

It is important for investigators to be clear about what they want of a sample, and for readers to be clear what they can infer from the samples from which research reports are developed. Clear and detailed descriptions, not only of the sample but of the process by which the sample was obtained, are essential if these purposes are to be met.

Source cited:

Busse, Ewald W., and Maddox, George L., with Associates. (1985). *The Duke Longitudinal Studies of Normal Aging 1955-1980*. New York: Springer.