

Preparing for a Successful Product Launch: Minimize Survey Sample Bias, the Silent Killer

Jack R. Gallagher, Ed.D., M.S., Clarity Pharma Research

Jessica Santos, Ph.D., WorldOne

Hypertension is often called the silent killer because its symptoms are not always noticeable. But it's not the only silent killer:

- Biased samples that go unnoticed can be just as deadly to your brand over time.
- Eliminating or at least reducing sampling bias in your prelaunch research pays off in a big way by providing accurate data to help you make the right strategic decisions.



Careful planning by you and your research supplier is necessary to avoid the potentially damaging pitfalls of sample bias.

- A seriously biased prelaunch research sample is like:

A lamppost without a light:
It provides no illumination, but you may not notice this until it gets dark.

A company might not notice the “darkness” until sales of its new drug are less than predicted from its prelaunch market research.

The prospect of faulty decisions resulting from invalid or non-representative survey samples has caused distress to researchers for more than 180 years.^{1,2} Historically, the pharmaceutical industry has paid insufficient attention to avoiding or correcting bias in marketing research samples.

We believe survey samples should minimize sample coverage bias and non-response bias, major types of sampling bias.

An important goal of prelaunch surveys is to:

- make inferences beyond a survey's participants to a total population in order to make correct strategic decisions.

Correct survey-derived inferences require:

- a probability sample;

- high survey participation rate by those selected.

A probability sample:

- requires each element to have a known non-zero probability of selection;
- permits the use of statistics to make inferences about a population.³

Why is a high survey participation rate important?

- Selection bias occurs because non-participation is rarely random (e.g., it does not occur equally across subgroups).
- A sample may not mirror the study population if survey participants and non-participants differ on important characteristics.

Non-probability survey samples are on the increase

The European Survey Research Association (ESRA) has noted that non-representative survey samples are becoming more common due in part to the increasing use of convenience samples. ESRA concluded that:

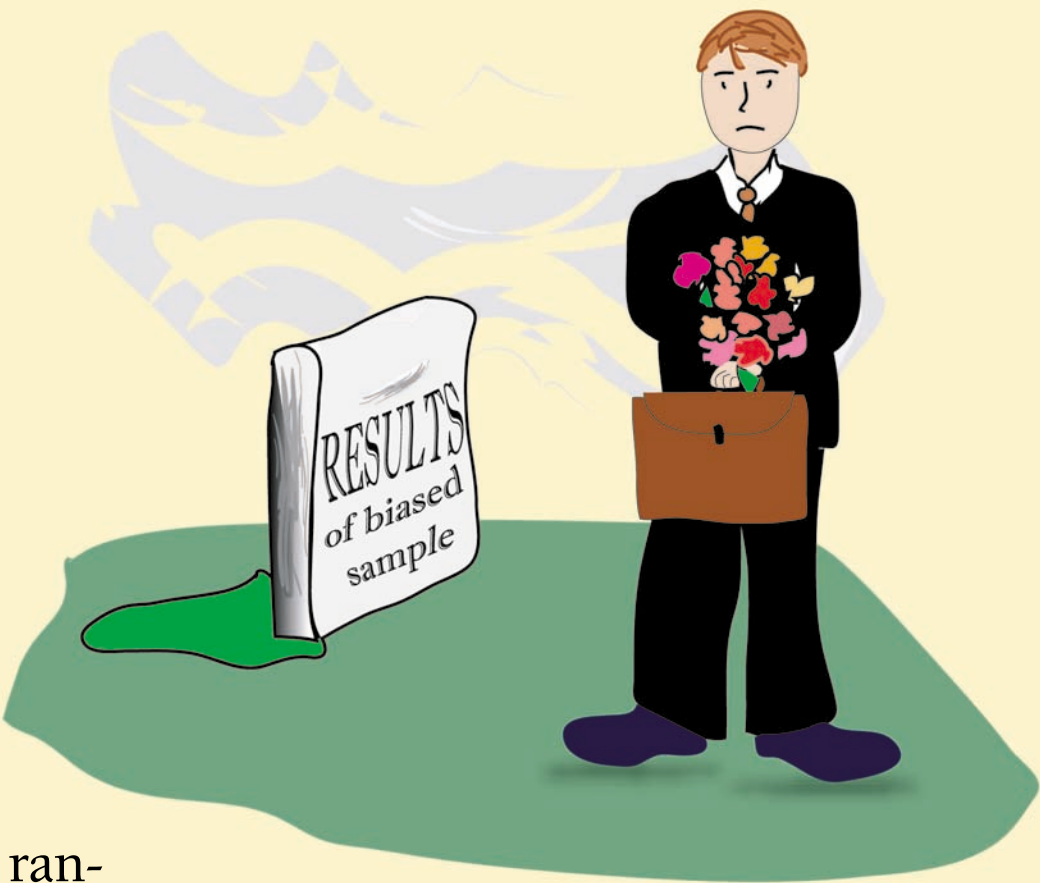
*“When under coverage of certain groups results in non-random missingness (non-MAR), the validity of the results could be seriously corrupted and selection bias will become apparent. It is not yet known how to deal with selection bias in non-random samples...”*⁴



Obstacles to representative survey samples

Unknown universe

Medical researchers enjoy the advantage that some samples are available in the public domain. However, data on the size of a target universe contained in official statistical



sources (WHO, EphMRA, census, etc.) are often:

- missing;
- outdated;
- inaccurate.

Target HCPs have unknown characteristics

Distribution of target health care providers (HCPs) by geography, target patient volume, and other important characteristics is often unknown or inaccurate.

Sample frame is hard to construct

- The distribution of HCPs might not be evenly spread across a nation, e.g.:
- Specialists may be concentrated in some large hospitals/treatment centers or concentrated in urban areas and not in rural regions.
 - High prescribers might be skewed toward one gender, age, or practice setting.
- Without knowledge of the distribution of a target segment in the universe, the sample frame is likely to contain too few participants in some target segments.

Some HCPs are hard to reach

- Office managers and other “gatekeepers” often make it difficult to contact target HCPs directly.

Some HCPs refuse to participate in the study

The following physician types are hard to recruit for survey participation and thus tend to be underrepresented:

- “marketing research study resisting” physicians;
- “heavily burdened” physicians.

Representative samples particularly challenging for:

- surveys in an emerging market;
- multinational surveys.

Practical solutions to detecting & correcting bias

We argue that although pure representative sampling that precisely mirrors the target universe might be rare in prelaunch pharmaceutical research, researchers can make a sample as representative as possible within the constraints of the survey environment. Some practical solutions to improve representativeness and help overcome obstacles:

- ▶ Actively build and maintain a sample database that mirrors the target universe as closely as possible.
- ▶ Always aim to reach the whole universe in selecting the sample frame.
- ▶ If a panel is used, representation in the sample should be proportionate to its size.
- ▶ Use stratified sampling when target respondents are not the entire universe and set strata sensibly according to the research objectives and sample characteristics.
- ▶ Use an incentive ladder and multiple research channels to encourage “overly burdened” and “market research resisting” physicians to participate.
- ▶ Weight sample data to adjust for differences in patient probability of being selected for a study and for detected biases when the correction factor is knowable.
- ▶ Help the client to adjust study time expectations: Representative sampling requires more time, more effort than panel or other convenience sampling.

References

¹ Gallagher, JR, “Invalid patient studies: Not a bargain at any price,” Journal of Health Care Marketing, March 1989; 9(1) 69-71.
² Goodstadt, M; Chung, L; Kronitz, R; Cook, G; “Mail survey response rates: Their manipulation and impact,” Journal of Marketing Research, August 1977; 14 491-5.
³ Kish, L, Survey sampling, New York: John Wiley & Sons, Inc.; 1965.
⁴ “New challenges in sampling,” 3rd ESRA conference, Warsaw, July 2009, <http://survey methodology.eu/conferences/warsaw-2009/sessions/>.

ILLUSTRATIONS: Lamppost: © SUSAN CARROLL/CPR, Cone: © DREAMSTIME.COM, Gravestone: © SUSAN CARROLL/CPR

