

Unbiased Sampling Methods for Sexual and Gender Minorities

Developed in Women, Gender and Health 207:
Advanced Topics of Women, Gender, and Health,
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Course Instructed by Jerel P. Calzo and Sabra L. Katz-Wise

Teaching Example Authored by Jowanna Malone

Appropriate HSPH Core Courses:

This teaching example can be used in courses such as EPI 201/202, EPI 203 or EPI 204 when discussing the purpose of using sampling weights for research on sexual and gender minorities.

Brief Background:

Students should read Chapter 2 (Randomized Experiments) of the Causal Inference textbook focusing in on section 2.4 on Inverse Probability Weighting. The lecture incorporating the teaching example will explain the rationale behind using inverse probability weighting (IPW) so that the sampling is unbiased and represents the overarching population. In this example, we will emphasize how this method should still be used in purposive sampling (i.e. sampling method in which you are looking for a specific population). Researchers may see certain populations as a monolith (e.g., gender minorities, sexual minorities, racial minorities, etc.). However, even when restricting a sample to a certain population, IPW should still be used to adjust for sampling biases in that population (i.e. if there are more whites than racial minorities in a sample of transgender women).

Students will be shown an example of this in researching HIV prevention methods among sexual and gender minorities using the case of the iPrEx study. This study, which was restricted to those who were assigned a male sex at birth, showed that adhering to the pre-exposure prophylaxis chemotherapy medication Truvada could reduce one's risk of HIV by over 95%. The study included both cisgender men (assigned a male sex, identify as men) and transgender women (assigned a male sex, identify as women), but was mainly meant to examine HIV risks in cisgender men who have sex with men, as results reported from the study typically do not mention the transgender women who were included in the sample.

Learning Objectives for Students:

- To recognize best practices for dealing with bias in purposively sampled study populations.
- To understand the purpose of using sample weighting for sexual and gender minority populations in order to reinforce the point that minority populations are not a monolith.

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Teaching Methods:

A discussion prompt will follow a detailed lecture on different sampling methods (see Supplementary Materials for slides). The purpose of the discussion will be to apply what students have learned to forming best practices to sampling sexual and gender minorities in studies using the example of HIV prevention.

Discussion Prompt:

How can sampling weights improve research with sexual and gender minorities?

Desired Answer:

Since purposive sampling is typically used when studying marginalized populations (e.g., sexual minorities, gender minorities, racial minorities, etc.), researchers tend to treat these study populations as a monolith (i.e. that these study populations are representative of their respective overarching populations). Thus, using sample weights can adjust for bias in purposively sampled study populations. For example, if a study purposively sampled transgender women, resulting in a primarily White sample, the use of sample weights could better represent the racial makeup of the transgender women population in a given area by weighting women of color more and weighting White women less. This allows for more analytic opportunities such as looking at how race and gender identity interact in said study population in the risk of HIV.