

**SAMPLING METHODS IN HIV  
PREVENTION FOR SEXUAL AND  
GENDER MINORITIES**  
WGH 2016 TEACHING EXAMPLE

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# TEACHING PURPOSE AND OUTLINE

- **Sampling methodology**
  - Review of methods researchers use to make study samples representative of overarching populations
- **Best practices for sampling among gender and sexual minorities**
  - Learn how to apply such methods to study samples that are purposively sampled (i.e. usually marginalized populations)
  - These methods will allow for study results to be more generalizable to respective minority populations of interest
- **Discussion example**
  - Critique a study that used purposive sampling

# SAMPLING METHODOLOGY

# SAMPLING

- **Ideal**
  - Study sample is a representation of the overarching population you are trying to study
- **How best to achieve this?**
  - Sample at random from said population
  - Sometimes this is not possible, especially if interested in a very specific population

## SAMPLING WEIGHTS

- **P=probability** you are in the study given you are in a given strata
- Sampling weight=  $1/p$
- **Result**
  - Sample that represents a “random” sample of the overarching population
  - Those with low probabilities of being in the study will count more and those with higher probabilities of being in the study will count less

# SAMPLING WEIGHTS

- **Original sample**
  - 60 cisgender men, 20 cisgender women, and 20 transgender individuals
- **Probabilities of being sampled:**
  - 60% of sample are cisgender men, 20% of sample are cisgender women, 20% of sample are transgender
- **Weights**
  - Cisgender men:  $1/.60$
  - Cisgender women:  $1/0.20$
  - Transgender:  $1/0.20$
- **New units for each participant**
  - Cisgender men: 1.67
  - Cisgender women: 5
  - Transgender: 5

# PURPOSIVE SAMPLING

- **Purposive/Selective sampling**
  - Not everyone in a given population has an equal probability of being included in the sample
  - Used when researchers want to restrict to a certain demographic
    - Ex: Studying a group of men who have sex with men
      - Not everyone has an equal probability of being included in the study
      - Does not reflect overarching population

# SAMPLING AMONG GENDER AND SEXUAL MINORITIES



## HOW DOES THIS CONCERN GENDER AND SEXUAL MINORITIES?

- Just as researchers use sampling weights to match the diverse demographics of large populations (e.g. U.S. population), they should be mindful of diversity within marginalized populations as well
- When using purposive sampling for gender and/or sexual minorities, sampling weights should be considered in order to more accurately match the respective population

# *The* NEW ENGLAND JOURNAL *of* MEDICINE

ESTABLISHED IN 1812

DECEMBER 30, 2010

VOL. 363 NO. 27

## Preexposure Chemoprophylaxis for HIV Prevention in Men Who Have Sex with Men

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# IPREX STUDY SAMPLE

## Inclusion criteria

- Male sex at birth
- 18 years or older
- HIV-seronegative status

## Sample characteristics

- 4905 subjects who were screened, 2499 were enrolled in the study
- All subjects were assigned a male sex, although 29 (1%) reported their current gender identity as women

## ISSUES WITH IPREX SAMPLING

- This was a casual inclusion of transgender women, although the primary and sub analyses of the study treat the results to only apply to men who have sex with men, this neglects the inclusion of transgender women
  - Does this imply that “MSM” refers to any person assigned male at birth who currently has sex with men, despite gender identity?
  - What are we losing from this study with this casual inclusion of transgender women?
  - How could this have been improved via alternative sampling methods, different rhetoric surrounding analysis, etc.?

# DISCUSSION

# **BEST SAMPLING RESEARCH PRACTICES**

- Discussion question: How can sampling weights improve research for sexual and gender minorities?

# BEST SAMPLING RESEARCH PRACTICES

- 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.