



COLLABORATIVE OF  
**GENDER & SEXUAL  
HEALTH EQUITY**

RESEARCH EDUCATION RESOURCES


# Gender & Sex in Methods & Measurement

## Research Equity Toolkit

*Tool #3: Sampling Plans & Data Analyses*



THE UNIVERSITY  
OF BRITISH COLUMBIA



---

When we recruit participants to our research studies, they become a part of our *sample* – the group of people from whom we will collect data (or with whom we will generate data, depending on our theoretical framework) to answer our research questions or test our hypotheses. There are several points to consider about sampling in relationship to gender, sex, and sexuality. Here, we offer questions for researchers to ask themselves, issues to carefully consider and balance, and some illustrative example situations to walk through as they consider their research samples.

# Is the sample representative? Does it need to be?

A sample is a smaller group of people, drawing from a full population; the sample is representative when it reflects the larger population of interest. A key feature of representative sampling is *evaluating representativeness*, to ensure that the sample is an accurate reflection of that larger population.


## Consider

We might recruit 4000 participants to our study, to build a representative sample of Canadians. We could use Statistics Canada census data to determine how best to achieve representativeness, with particular focus on gender representativeness.

## However

Following a period of community and expert feedback, Statistics Canada modernized its questionnaire in time for the 2021 Census, allowing respondents to differentiate between sex assignment at birth and current gender identity for the very first time. Based on the *Survey of Safety in Public and Private Spaces* study conducted by Statistics Canada in 2018, and the 2019 Census Test that tested the new measurements, trans men, trans women and nonbinary people make up approximately 0.35% of the Canadian population – roughly 133,000 people out of 38.01 million. With this statistic in mind, a 4000-person sample of Canadians could be evaluated as representative if 14 of the participants identified as trans and/or nonbinary (0.35% of 4000). Whether or not this sample is truly representative is contentious for a number of reasons. For example, the method for evaluating representativeness depends on a newly updated national census, and limited reliable data exist on how many trans and nonbinary people there are in any given country, province, territory or region. Moreover, there are many gender and sex identities that may not be represented in the census.





But, beyond these contentious issues, even if 14 participants is representative according to national frequencies, this sample size may present statistical and interpretive challenges when it comes time for data analysis. Representativeness is thus one issue that needs to be balanced against others when considering gender, sex and sexuality in research.

## Remember

We are frequently without accurate benchmarks against which to measure and assess representativeness, especially when it comes to estimating the prevalence of intersex, trans, nonbinary, Two-Spirit, queer and other identities in the population. Representativeness may not be achievable – or desirable! Moreover, whether representativeness is a requirement for “validity” (lack of bias) in quantitative research is a matter of debate, with some experts asserting that representativeness is an “overrated principle,” particularly if the aim is to compare relationships between two variables rather than estimate the prevalence of some thing (Nohr & Olsen, 2013).

### On the collection of sex assignments

That sex is classified and assigned in binary ways is not without contention. In addition, the legal requirement of a binary birth certificate sex ignores the reality of intersex bodies, and this legal erasure is facilitated by doctors’ acceptance of a role as arbiter of a binary sex assignment decision for intersex children, and presumption that they should impose interventions to change the apparent sex characteristics of intersex children’s bodies so that they will visually conform to their assigned binary sexes. Sex assignment is then measured in binary ways, including on the census, which does not attend to this complexity.

# Is the sample large enough to ensure statistical power?


If our goal is to compare participant groups to find statistically significant differences between groups or explore effects within a single group that has some feature of their identity in common, we need to ensure that the sample size for each participant group is sufficiently large to achieve statistical power. A power analysis can be performed before data collection for planned comparisons, or afterwards with groups that emerge, to estimate minimal sample size requirements for each of the groups. An *underpowered* group can undermine statistical analyses, their outcomes and their interpretations. However, when power analyses are done a priori, researchers can purposively sample and even oversample participants with specific identities or experiences according to their research questions or hypotheses, to ensure sufficient sample size. Oversampling involves intentionally including more participants who identify in a particular way than would be representative of the general population or which we could recruit by random chance, even with the most thoughtful and inclusive recruitment strategies.

## Consider

Sometimes, we know in advance that we are going to compare participants grouped in particular ways (e.g., comparing trans and nonbinary participants to cisgender ones; comparing sexual majority participants to sexual minority ones). Where a priori planned analyses are known, researchers can determine sample size needs to achieve power and can recruit participants accordingly. They can also consider whether to *oversample*.

Sometimes, researchers engage in post hoc, emergent analyses and do not know in advance how they will group participants for the purposes of analyses. This can occur when we are collecting data ourselves, and when we are conducting secondary analyses of already existing data. We may find that we are unable to run analyses because there are “too few” participants who identify in a particular way, or who have a particular experience. We may find that groups are emergent and unknown to researchers in advance.





We might therefore consider aggregating the data differently – for example, instead of comparing trans and nonbinary participants to cisgender ones, it may ultimately be appropriate to include all trans and cis women into a single group, and all trans and cis men into a single group, if we were going to be using current gender identity as a key or covariable. This may mean that the nonbinary participants would be underrepresented and perhaps also excluded from analyses, having been separated them from participants who identify as trans women and men. We might, when possible, continue or renew sampling, to address an underpowered power by additional, targeted recruitment and oversampling.

### However

We need to balance oversampling with the potential of *exhausting the sample*. We can exhaust the sample by exacerbating research fatigue among over-studied communities, and when there are few people who identify in particular ways. For example, it may be challenging to oversample and recruit sufficient numbers of trans and nonbinary participants, if we are limiting eligibility to only one small geographic region, or only to participants of a particular age. Oversampling may require that we expand other elements of our eligibility criteria in order to not exhaust the sample.

### Remember

Oversampling to achieve statistical power is a strategy that requires careful consideration. Where the research findings have important implications for the daily lives and wellbeing of marginalized people, oversampling can be a critical and justifiable strategy, despite associated challenges. The benefits and drawbacks of oversampling will need to be weighed against the alternatives – either leaving the data of marginalized people who are insufficiently represented unanalyzed or collapsing categories and aggregating the data after the fact to achieve power (see a discussion of these strategies on [page 14](#)).

# Can I ensure the anonymity & confidentiality of participants?

Where people of marginalized and minoritized genders, sexes and sexualities are included in our samples, we may need to pay special attention to concerns regarding anonymity and confidentiality – *especially* when these individuals are few.


## Consider

There may be undue, negative consequences of being identifiable as a participant in research, and therefore confidentiality is paramount for many – being able to guarantee anonymity will foster trust and facilitate disclosures. Even if we have achieved representativeness, or groups of sufficient size to run adequately-powered analyses, there may still be ethical concerns about individual participants being identifiable, especially where data are disaggregated and viewable by participant (e.g., individual responses, even without names, as opposed to averages among variables). When our sample only includes a handful of participants who identify in a particular way, we may want to report on their data separately from our primary or key analyses – in another paper, a footnote, or a supplemental file. This allows these participants' data to be analyzed and considered, rather than excluded; it also allows for future meta- and systematic analyses to be run using this data, when combined with data from other studies. However, it may be ethically inappropriate to report on that data, if there is a risk of participant identities being deduced.

## However

Threats to anonymity and confidentiality are only ethical concerns if they are concerns *for the participants*. There are many reasons why participants may prefer to be identified and identifiable within research outputs. For example, participants may be concerned over the loss of ownership over their stories and experiences when data are anonymized. There is an ethical dimension to researchers deciding that concealing identities is of primary importance, especially when that decision may result in data being left unanalyzed or aggregated in ways that are not reflective of participants' unique identities, or which erase important inter-group differences.





Within the context of research as a colonial tool, claims of confidentiality concern have been used as a strategy to ensure that smaller communities, including Two-Spirit people, are silenced and erased. Where confidentiality is privileged, those who are underrepresented within a sample and/or minoritized within society will have their visibility or viability in the data undermined or erased – their concerns and experiences will be left unexplored; their needs will be left unmet in the research and its impacts. For example, Two-Spirit people may be absorbed into the “LGBTQ” acronym and collapsed with other, Western gender and sexual minority populations for the purposes of analysis. This may be done to protect against the threat of identification when samples of Two-Spirit people are deemed too small. However, this decision represents and reinforces the problematic practice of equating Two-Spirit with Western identities. Further, the resulting analysis will be insufficient to attend to the nuances and specifics of Two-Spirit experiences. In this way, confidentiality can serve as a mechanism that silences Two-Spirit participants.

### **Remember**

We can empower participants to decide for themselves to what extent they value confidentiality or anonymity. This is especially important due to research fatigue and considering the historical and ongoing harms done by the pervasive erasure of certain people from the research landscape. Consent forms can speak to this tension. Participants can be invited to reflect on and sign off on how their data can be used if researchers are concerned that data will need to be excluded from analyses to guarantee confidentiality. Researchers are also responsible for ensuring that they are effectively recruiting enough participants who identify in diverse ways to alleviate this risk. Researchers must also deidentify participants so that the sociodemographic descriptors used cannot, alone or in combination, render any single participant identifiable. Deidentification may be important no matter how many participants in the sample identify similarly.



# Will a convenience sample introduce problematic bias?

Using a non-probability sampling strategy called convenience sampling selects participants based on accessibility and availability, trading these benefits with some detractions. For example, convenience sampling may introduce bias into samples and, in most cases, the sample will not be representative of the population of interest. In designing research studies with the intent of including people who are marginalized and minoritized based on their genders, sexes and sexualities, we need to be aware of some sampling biases that occur due to common convenience sampling techniques.

## Consider

As part of our recruitment and associated oversampling strategies, we might, for pragmatic reasons, circulate our recruitment materials among local universities' and colleges' Pride clubs. We will need to consider, however, that participants recruited in this way may be younger, more formally educated and from higher socioeconomic statuses than the rest of our sample. Additionally, we may utilize facility-based sampling and attempt to recruit additional trans, nonbinary, gay, lesbian, bisexual and queer participants who have accessed a local sexual health clinic. In this case, we may discover that these participants are different from those who were not recruited as patients at a particular facility in fundamental ways – perhaps they have more sexual partners on average, more instances of HIV/STBBI testing, more skill at STBBI protection practices, or are simply more likely to have a family practitioner than the rest of our sample.

## However

Whether these targeted recruitment strategies introduce sampling bias into our study will depend on several factors that can be better elucidated with clear reporting of sampling strategies and approaches.

## Remember

Transparency in reporting is key. If we are aware that our recruitment strategies have introduced bias into our samples, it is prudent to acknowledge those biases, make visible to readers their impact on validity, and highlight their limits to the generalizability and transferability of our findings. A common convenience sampling technique is to recruit trans, queer and Two-Spirit participants from physical health and mental health clinics. It would thereafter be inappropriate, invalid and harmful to argue that these populations have increased rates of mental health diagnoses compared to cisgender, heterosexual participants recruited primarily through other strategies. Acknowledging sampling bias is especially important for how we report findings associated with people who are already marginalized and minoritized, where the reification of stereotypes can have profound, negative impacts on health, wellness and quality of life. There are a range of quantitative bias analysis methods that can be used to try to quantify these biases in transparent ways.

# What happens when certain types of participants are underrepresented in our samples?

Intersex, trans, nonbinary, Two-Spirit, queer and other people who are marginalized and minoritized based on gender, sex and sexuality are more likely to be underrepresented in our samples as compared to cisgender, heterosexual participants. This is because people with these experiences or who identify in these ways are at once minorities and minoritized (see Sotto-Santiago, 2019, for a discussion of how these framings differ and how this difference matters). This means that the world presents them with more barriers, and that they are fewer in numbers. We may find that these participants are “too few” within our samples - too few to ensure confidentiality and/or too few to achieve statistical power for the purposes of running analyses. Apart from purposively recruiting in advance, there are three primary strategies for addressing the “too few” problem once the sample has been collected: (a) excluding underrepresented participants, (b) aggregating/clustering/collapsing data into larger groups or (c) thinking of *other* ways to group participants, along other shared axes so that resulting groups are sufficiently sized. In general, the decision of which strategy to utilize needs to be determined thoughtfully, critically and transparently.

## Be thoughtful

Oftentimes, researchers exclude underrepresented participant data because that is what they have always done, or because doing so is easy or makes for ostensibly cleaner data sets. Or researchers collapse certain types of underrepresented participants into larger groups because that is what other researchers have done and it seems that it can be justified by the extant literature, even if those other researchers were not transparent in their explanations and justifications of their choice.

## Be critical

Excluding or collapsing underrepresented participant data will have consequences – to the participants, to the research findings and to secondary, meta and systematic analyses that can be conducted using the data in the future. For example, although a single study may have reduced statistical power, data from this study may be systematically reviewed and meta-analyzed alongside small samples from other studies. The impacts of the decision to exclude or collapse participant data must be weighed against the potential benefits. This includes impacts and benefits in terms of data quality for the present and future research, but also to the participants and the communities from which data are drawn.



## Be transparent

No matter what is decided, researchers need to be transparent in their research outputs about what they did, why they did it, and what they see as the impacts of their decision. This will allow readers to assess for themselves whether the decision was justified. Transparency will also allow other researchers to learn by example, rather than replicating approaches that may be problematic simply because that is how things have generally been done.

## On excluding underrepresented participants

When participants are deemed “too few” within a sample, these participants’ data may be removed from the data set, excluded from analyses or otherwise ignored. It is important to remember that, just as there are psychological costs associated with being excluded from research at the stage of recruitment, there are also psychological costs of having participated in research only to have your data ignored or to seeing people like you excluded from or not represented in analysis.

We need to carefully consider the impacts of exclusion at various stages of the research process, considering the wellbeing of prospective and actual participants as individuals, as well as the potential impacts of exclusion on the generalizability and transferability of our findings. We also need to consider whether that exclusion is justified at which or any stage and explain that justification in our research outputs. It could be that we are deeming the participants as “too few” because we are aggregating the data in a way that does not follow from our research questions or hypotheses – that there are, in fact, sufficient numbers of these participants to run analyses if we were to approach the data, and groups within the data, in a slightly different way (see the section below on aggregating data!).

## Example 1: Where membership in a marginalized group is not being used a key, control or covariable

Drs. Smith, Wang and Singh are researchers at Imaginary University. They are conducting a retrospective chart review to better understand the relationship between fibroid size, location and quantity, and intrauterine device (IUD) expulsion among patients of different ages. While reviewing the 279 charts that noted IUD expulsion, they find five patients with an “M” on their health care card, and two with an “X”. A further two charts with an “F” on their health care card included provider notes that indicated that the patients were trans and nonbinary people.

### Decision

Since none of their planned analyses pertain to gender identity and they are not using gender as a covariate, the researchers include all participants in their data set, regardless of gender/sex marker. In their report, the researchers mention the gender markers of all participants, and state that, given the diversity of gender markers, their findings may be generalizable to people of various genders and legal sexes. Their literature review found that while IUD use among trans and nonbinary people is increasing, little is known about their IUD experiences, side effects and expulsion rates. The researchers were surprised to find that 3.25% of their sample were trans and nonbinary people; they therefore suggest future research to determine whether trans and nonbinary people with fibroids are more likely to expel IUDs as compared to cisgender women.

### Remember

While there may be participants whose presence was unexpected in your research related to gender, sex or sexuality, excluding them from the research just because of that or because there are few of them is rarely justifiable, especially if that variable is not part of your planned analysis.



## Example 2: Where participant identity is key to your analysis

PhD candidate Ravi Das is conducting a study that explores the relationships between gender, sexual orientation and the sexualized use of substances. She develops a survey instrument that allows her to classify each respondent based on gender identity and sexual orientation.

When analyzing her data, she discovers that she has relatively equal numbers of participants by some genders – cisgender men, cisgender women, trans men and trans women – as well as some sexualities – heterosexual/straight or queer/bi/gay/lesbian. However, she finds that there only a small handful of nonbinary people, an insufficient number for statistical analysis.

### Decision

In her dissertation, she explains why the nonbinary participants were excluded from the analysis, explores why her recruitment strategy may have been ineffective at soliciting nonbinary participants, and explains that her findings are not generalizable to nonbinary people of any sexuality. She explains that it did not feel appropriate to collapse trans men, trans women, and nonbinary people into a single category – which would have been necessary to achieve power. She writes about how this might not have honoured the identities of these participants and would not have been in keeping with her research question, which was about whether and why people of *different* gender and sexual identities engage in sexualized substance use. Though the collapsing would have facilitated the inclusion of the nonbinary participants, it would have also meant overlooking the inter-group differences among trans people of different genders. Ravi identifies this as a limitation of her project and in her subsequent work she endeavours to ensure that this limitation is not replicated; to do so, she purposively oversamples nonbinary participants of diverse sexualities in her next study.

### Remember

There is no one-size-fits-all approach or list of circumstances, where excluding underrepresented data is justified or not. Thoughtfully, critically, and transparently disclosing the factors that contributed to the decision and reflecting on the impacts of that decision are key.

## On aggregating/clustering/collapsing data

When participants are deemed “too few” within a sample, these participants’ data may be aggregated, clustered or collapsed, in order to create groups that are large enough to analyze on their own and/or to be compared with other groups. How best to aggregate variables will depend on your research questions, hypotheses and theoretical framework as well as the potential impacts if data is not aggregated (e.g., whether data will be excluded). When collapsing data categories in this way, we need to do so based on *likeness*, where participants that are understood as the same, or as sharing something important in common are grouped together. There are some common approaches to aggregating the data of participants who are marginalized and minoritized based on their genders, sexes and sexualities.

### Example 1: Gender and sexual minorities

Dr. Brown has been involved in a longitudinal cohort study of women in Urban City for 10 years. In previous years, the survey was focused on the experiences of cisgender, heterosexual women.

Two years ago, the survey was updated to be more attentive to the experiences of women who are minoritized based on axes of sexuality (specifically queer, bisexual and lesbian women) and based on axes of gender (specifically trans and nonbinary women). The project’s recruitment strategy has been updated to target these women. Dr. Brown intends to analyze gender, sexuality and access to sexual health services by comparing trans women and cisgender women, and then straight women and queer/bi/lesbian women. She runs two parallel analyses and creates two tables. She finds statistically significant differences between the queer/bi/lesbian women and the straight women, where marginalized and minoritized sexual identity is found to be associated with sexual health service access. She finds a similar trend when comparing the trans women and cisgender women in the sample – trans women are less likely to access sexual health services and more likely to experience discrimination when accessing these services. However, the trend is not statistically significant. She is cautious about how to interpret this association and worries that publishing these results would imply that gender minority women do not experience barriers to sexual health care in significant ways. She runs the analysis again, this time comparing all gender and sexual minority women to the gender and sexual majority women. The direction of the association remains the same, and association is now stronger – cisgender, heterosexual women experience fewer barriers and instances of discrimination as compared to the trans, queer, bisexual, and lesbian women.



## Decision

Dr. Brown produces a manuscript of her findings – she provides a detailed rationale of her first analysis, why she is collapsing gender and sexual minority women together, and details the limitations of this decision, including that the important differences between these two groups of women are left unclear and in need of further exploration.

## Remember

Sexual and gender minorities (SGM), a commonly used phrase in research and community, also represents a common approach to collapsing and categorizing participant data. These groups are often stigmatized on some shared bases including presumptions around proscriptive gender norms, so there can also be some “likeness” as articulated above. But, collapsing them is not always appropriate or justified. When data are aggregated in this way, it suggests to readers that these distinct groups of people are *fundamentally the same* for the purposes of the analysis and findings. This may represent a conflation between gender and sexuality and a failure to consider the unique differences between these groups. Research that looks at sexual and gender minorities must be done thoughtfully, critically and transparently, acknowledging the assumptions, limits and impacts of this classification.

## Example 2: The ‘Everybody-but-Cis-Men’ Approach

Masters student Romesh de Silva is working as an RA at the Fictious Centre for Studying People and Stuff. They are working with an existing data set, where the participants are described as men, women and trans people – with the fewest participants representing this latter group. They have been asked by their PI to run a correlational analysis to explore the relationship between gender and daily incidents of sexualized street harassment.



Romesh is not sure whether they should exclude data from the trans group from the analysis or recode these participants' data as belonging either the men's group or the women's group. They cannot now determine precisely how these participants identified as they did not collect this data, nor do they know what the survey instrument looked like. Accordingly, they ask the centre's statistician for advice on what to do with the trans group. The statistician recommends that the trans participants get collapsed with the women, and thereafter described as two groups – cis men and everybody else.

## Decision

The statistician's suggestion was based on data utility rather than a nuanced understanding of the relationship between gender, gender expression and sexualized street harassment. Romesh nevertheless moves forward with this plan and recodes the data accordingly. In their report to the PI, Romesh explains their choice – that it was more appropriate to compare cisgender men to all other participants than to exclude the trans participants from the analysis, even if this means that the few trans men in the sample are not included in the “men” category. Romesh relabels the “men” group as “cisgender men,” accordingly. They suggest to the PI that future data collection more carefully attend to the complexity of gender identity as well as to gender expression, which the research shows is also an important contributing factor to sexualized street violence, even among cisgender men.

## Remember

Collapsing all trans participants, regardless of gender identity, into the same category as cisgender women may erase important differences between these diverse people, and as such is typically inappropriate and inadvisable. We always need to ask ourselves whether doing so is appropriate and justifiable based on our research question, hypothesis or theoretical framework. In Romesh's case, the participants do not share gender in common, but the PI's interest is in the relationship between gender and sexualized street harassment. However, the participant group may share some experiences of gender oppression in common, even if not the same kind, which may be a reasonable justification for their being collapsed in this way given the limitations of the data set and the costs associated with other approaches.



### Example 3: Trans women and MSM

Dr. Summers is a researcher at Greendale Community College studying HIV. He is particularly interested in understanding HIV vulnerabilities among marginalized and precarious people – people who are undocumented, incarcerated and/or unhoused. He has noticed a trend in his field, where researchers explore HIV among men who have sex with men (MSM) and trans women, as though there is a commonality between these two groups that justifies their being discussed as one group. Dr. Summers is aware that his work has contributed to this trend.

#### Decision

Dr. Summers returns to data that his lab collected two years ago, and the manuscripts that were developed where MSM and trans women were collapsed together as a single group. He realizes that this decision was likely the result of too few trans women in the sample such that the team could not reach meaningful conclusions. He also reflects on his own false assumption – he had assumed that the trans women were all people with penises, who were having sex with other people with penises and, as such, that their sexual behaviours and practices meant that they would be indistinguishable from the cisgender men in the sample who have sex with other cisgender men. The more he digs into his own data, the more he realizes the error behind his assumptions around gender and sexuality – not only are some of the trans women in his sample having sex with women (some of whom may have penises and many of whom likely do not), but some of the men in the sample are trans, who have a variety of body parts that they use sexually in a variety of ways!

#### Remember

We may find approaches to collapsing data in the literature that are repeatedly replicated – but that doesn't mean that they are justified. Some of these approaches – like the conflation of trans women and MSM in the HIV literature – are based on assumptions about who these people are, what body parts they have, and how they use those body parts for the purposes of sex or reproduction. When we start to dig into these common approaches to collapsing data and find that they not only do not make sense, but may cause harm, our research and communities will benefit from new directions in grouping our participants.

## **A note on qualitative research, recruitment & sampling**

Much of this tool focuses on quantitative research with relatively large sample sizes, and the challenges associated with recruiting participants, collecting, coding, aggregating and collapsing data. Sampling in qualitative research is likely to be non-probabilistic, including purposeful, selective, quota, snowball or convenience based. Here, the focus is on recruiting a relatively small number of participants who can offer insights into the topic, phenomenon or experience that is being studied. But many of the same principles hold, including how themes are analyzed within groups and subgroups, how to treat insights that are derived from social locations that have only one participant represented, etc. Importantly, people who are marginalized and minoritized based on their genders, sexes and sexualities are also underrepresented in qualitative research and failure to include participants of all types in qualitative research is no less serious.



## Additional readings

- Anderssen, N., & Malterud, K. (2017). Oversampling as a methodological strategy for the study of self-reported health among lesbian, gay and bisexual populations. *Scandinavian Journal of Public Health, 45*(6), 637-646.
- Bauer, G. R., & Scheim, A. I. (2013). Sampling bias in transgender studies. *The Lancet: Infectious Diseases, 13*(10), 832.
- Beischel, W. J., Schudson, Z. C., Hoskin, R. A., & van Anders, S. M. (2022). The gender/sex 3x3: Measuring and categorizing gender/sex beyond binaries. *Psychology of Sexual Orientation and Gender Diversity*. Advance online publication.
- Henderson, E. R., Blosnich, J. R., Herman, J. L., & Meyer, I. H. (2019). Considerations on sampling in transgender health disparities research. *LGBT Health, 6*(6), 267-270.
- Hottes, T. S., Ferlatte, O., & Gilbert, M. (2015). Misclassification and undersampling of sexual minorities in population surveys. *American Journal of Public Health, 105*(1), e5.
- Krause, H. (2020, Jan 17). Keeping data inclusivity without diluting your results. *We All Count*. <https://weallcount.com/2020/01/17/keeping-data-inclusivity-without-diluting-your-results/>
- Nohr, E. A., & Olsen, J. (2013). Commentary: Epidemiologists have debated representativeness for more than 40 years – has the time come to move on? *International Journal of Epidemiology, 42*(4), 1016-1017.
- Reisner, S. L., Deutsch, M. D., Bhasin, S., Bockting, W., Brown, G. R., Feldman, J., Garofalo, R., Kreukels, B., Radix, A., Safer, J. D., Tangpricha, V., T'Sjoen, G., & Goodman, M. (2017). Advancing methods for U.S. transgender health research. *Current Opinion in Endocrinology, Diabetes and Obesity, 23*(2), 198-207.
- Salway, T. J., Morgan, J., Ferlatte, O., Hawkins, B., Lachowsky, N. J., & Gilbert, M. (2019). A systematic review of characteristics of nonprobability community venue samples of sexual minority individuals and associated methods for assessing selection bias. *LGBT Health, 6*(5), 205-215.
- Sotto-Santiago, S. (2019). Time to reconsider the world minority in academic medicine. *Journal of Best Practices in Health Professions Diversity, 12*(1), 72-78.
- Surmiak, A. D. (2018). Confidentiality in qualitative research involving vulnerable participants: Researchers' perspectives. *Forum: Qualitative Social Research, 19*(3).

### Co-Authors/Advisory Team

Dr. A.J. Lowik is the lead author. Co-authors include Dr. Jessica Cameron, Jessy Dame, Dr. Jae Ford, Lex Pulice-Farrow, Dr. Travis Salway, Dr. Sari van Anders, Dr. Kate Shannon.

### Funding

The Project Lead is Dr. A.J. Lowik, CGSHE Gender Equity Advisor at UBC.

This work is funded by a CIHR Sex and Gender Science Chair in Gender-Transformative Sexual Health (PI: Dr. Kate Shannon).

### Design & Development

Layout & design by Shivangi Sikri & Dr. Kate Milberry, CGSHE-UBC Comms Team.

Advisory & resource support by Carlie McPhee, CGSHE Project Coordinator for Sexual Health.

### Suggested Citation (APA)

Lowik, A., Cameron, J. J., Dame, J., Ford, J., Pulice-Farrow, L., Salway, T., van Anders, S., & Shannon, K. (2022). *Gender and Sex in Methods & Measurement - Research Equity Toolkit. "Tool #3: Sampling Plans and Data Analyses,"* Collaborative of Gender and Sexual Health Equity Research Education Resources ("CGSHE"), University of British Columbia.

**Note:** The advisory authors are listed alphabetically, each having contributed equally to this collaborative project; the exceptions to the alphabetical ordering are the first author (who is the project lead and primary author) and the last author (who is the senior author/PI of CIHR Chair that funded this project).