



COLLABORATIVE OF
**GENDER & SEXUAL
HEALTH EQUITY**

RESEARCH EDUCATION RESOURCES

Gender & Sex in Methods & Measurement

Research Equity Toolkit

*Tool #4: Asking About & Measuring
Participants' Genders & Sexes*



THE UNIVERSITY
OF BRITISH COLUMBIA

Introduction

There is no single, correct way to measure people's genders and sexes – and not only because gender and sex are terms with multiple meanings. Each approach has its strengths and drawbacks, and researchers should consider how these interact with their overall goals and plans for their data. This tool does not offer prescriptive recommendations for how gender and sex ought to be measured, recognizing that those recommendations would be subject to rapid change. Instead, this tool itemizes some common approaches to measurement and discusses the advantages and disadvantages of each. It also provides detailed considerations when engaged in the task of asking people about and measuring their genders and sexes during research projects.

The process of designing precise and inclusive measurements begins with asking ourselves these questions:

1. What do I want to know about the people who are participating in my study?
2. Why do I want to gather that information?
3. What is the best approach to collecting that information, considering the strengths and drawbacks of the various options, as well as how I plan to use the data?
4. How can I best balance the rights of my participants to self-identify with the demands of my research design and planned analyses?

In answering these questions, researchers should have an eye towards the following: accuracy, intentionality, precision, harm reduction and temporality.

Accuracy

Asking participants about certain aspects of their identity or experience is important, even without an analytical reason for doing so. Researchers should be able to describe their samples with as much nuance and detail as possible and to do so, may find it necessary to ask about and measure a variety of aspects of gender and sex. Accurately describing the sample will not only assist others in knowing who was and was not included in the research and in ascertaining the generalizability of the findings. Accurate and detailed sample descriptions are also helpful for systematic and meta-analyses that may be undertaken in the future.



Intentionality

When it comes to asking about and measuring participants' genders and sexes for the purposes of analysis it is important to have clear justifications for doing so, connected to the research questions, hypotheses or planned analyses. When this information is collected automatically, haphazardly or without a clear plan, we risk:

- a. fatiguing our participants with unnecessary questions;
- b. reifying the perceived relevance of a variable to the field of inquiry where that variable may be no or little relevance. For example, it is problematic to have participants classified as male or female, without cause, and without explanation for the reasons for and limits of this binary classification, wherein it is therefore reinforced that maleness and femaleness are clear analytical concepts, and that they mean something important in interpreting the research findings;
- c. replicating that which has been done before in our field or discipline – problems and all - rather than being thoughtful about why we are collecting this information and strategizing how best to collect it.

Precision

Sometimes we ask participants about one aspect of their identity or experience, and then use those data to extrapolate something about them that we did not actually measure. When we use proxies in our measurement of people's identities and experiences, we compromise the (construct) validity of our measures, rely on assumptions and stereotypes when we analyse our data, and ultimately sacrifice the precision of our findings. We must be very intentional about what we want to know and measure *it*, and not other constructs to answer our research questions, test our hypotheses or guide our analyses. For example, researchers may ask people for their gender identities, and then use this information to make claims about the role of gender expression on a particular experience or phenomenon. This practice can assume that all women are feminine, all men are masculine or that all nonbinary people are androgynous. In this case, it would be preferable to measure gender expression, rather than crudely using gender identity as its proxy.

Harm reduction

There are some research practices that are known to be harmful with little to no benefit, and therefore ought to be avoided. Harmful research practices to avoid include:

- a. offering only binary options in the measurement of gender and/or sex (e.g., offering only male/female or man/woman options);
- b. using outdated or problematic language;
- c. avoiding inclusive, precise language due to concerns that majoritized participants will find this approach confusing or confronting. While more inclusive, precise language may be unclear to some participants who are unfamiliar with it (Michaels et al., 2017), there are strategies for improving participants' understanding that do not revert to exclusionary and imprecise language alternatives;
- d. providing “other” as a response option to a survey question. The language of “other” on surveys is a mechanism by which certain participants are *othered* – labelled and defined as subaltern, as somehow lacking, inferior and unnameable as compared to groups that are explicitly named. The alternative of “something else” or “prefer to self-describe” (typically accompanied by a write-in text box where the participant can name their identity) is preferable;
- e. overwhelming participants with unnecessarily lengthy surveys, where there is no or little intention of making use of some of the data collected;
- f. ignoring contextual phenomena like culture, community, religion or other social context of the research, and ignoring the impact of these phenomena when designing measures and data collection instruments.

After having avoided known harms, we might be tempted to describe our research projects as entirely free of harm. However, no matter how we approach the task of gathering information from participants, there is always going to be a risk of harm. Our pragmatic goal can only be “harm reducing.” To this end, we must consider the harms of all data collection and measurement options and choose the one that carries the fewest harms. For example, researchers need to grapple with whether it causes more harm to have participants self-describe their gender identities, only to have them aggregated into categories set by the researcher after the fact, or to provide participants with only a few checkboxes to choose from in the first place.

Temporality

It might seem obvious that when you ask about people's genders and sexes that you would want to know how they identify *today* or at the time of initiation into the study. However, these aspects of a person's life and identity are subject to change. As such, you may need to add temporality to your measurement, by specifying that you want to know the person's *current* identity, or the identity that they espoused at some precise time in the past. For example, if you want to explore how trans gestational parents experience perinatal care, it is important to ascertain whether participants identified or were identifiable as trans at the time of their perinatal care. If you ask participants for their gender modalities *today*, a trans person might be sharing perinatal care experiences from when they did not identify as such. In this way, negative or positive aspects of that person's perinatal care experience may be falsely attributed to their transness or to cisnormativity, which may not have been factors that impacted their care.

A note on sexuality

This tool focuses on asking about and measuring participants' genders and sexes. However, you might additionally be interested in asking about and measuring participants' sexualities. Many of the insights offered in this tool are relevant to sexuality and can be applied to its measurement – for example, where intentionality and precision guide your approach to measuring sexuality, and where you will need to balance risks and harms of various approaches. There are some specific complexities when it comes to the measurement of sexuality, including the following:

Sexuality & gender are distinct concepts

Gender and sexuality are often, incorrectly, conflated. For example, it is inaccurate and inappropriate to contrast “LGBT” with heterosexuality, since many trans people (represented by the T) are heterosexual (White, 2018). Research should not assume that trans people are necessarily minoritized based on their sexualities and should not list “trans” as a sexuality response option. Trans people should not be included in research framed around sexual minorities, unless, of course, the trans participants are *also* queer, gay, lesbian, bisexual, asexual or otherwise marginalized and minoritized based on their sexualities.

Sexuality & gender are interconnected concepts

While sexuality is distinct from gender, it is nonetheless important that researchers reflect on their interconnectedness. For example, a person might describe their gender as “dyke” or their sexuality as “femme”, words that may be communicating something about both their sexuality and their gender identity or gender expression. The Indigenous concept of [Two-Spirit](#), which may refer to a person's gender, their sexuality, both or neither, also challenges the presumed separateness of these concepts.

The challenge of finding shared language

As with gender and sex, shared language in the measurement of sexuality is not guaranteed. For example, “gay” has been used to refer to same-sex attraction and same-gender attraction, interchangeably, representing a conflation between gender and sex that renders the word “gay” complicated due to the potential for it being used by different people in different ways. Words like “lesbian” which seem to invoke both the gender of the lesbian person *and* the people to whom that lesbian is primarily or solely attracted, are similarly slippery. Researchers have explored different models of “being a lesbian,” including whether lesbian as a concept can include trans people of all genders and cisgender men (Tate, 2012). As such, the language to describe sexuality is entangled with the language to describe gender, which is itself anything but straightforward. In measuring sexuality, it may be important to ascertain how participants are understanding and using different words.

Measuring sex

The measurement of sex may seem straightforward and it has been treated as straightforward historically and today. However, the measurement of sex is complicated because sex itself is complicated (scientifically and socially)!

Multiple interpretations

The word “sex” is used to refer to:

a. **The sex a person was assigned at or before birth.**

This assignment is typically based on a visual inspection of the genitals of fetuses or neonates. Humans are typically assigned a binary sex (male or female), which is accompanied by presumptions about their anatomy and physiology, including chromosomes, phenotypical expression, puberty trajectory and fertility. However, these presumptions may prove false. For example, sexed characteristics may not align as expected within individuals. Further, a person may change aspects of their anatomy or physiology later in life, using available medical technologies and surgeries. As such, knowing about a person’s sex assignment at birth may tell us very little about their anatomy and physiology today. When a person is assigned a sex, they are typically assigned a purportedly “corresponding” gender. For example, a person assigned the sex of male is typically simultaneously assigned the gender of boy/man. Gender assignment at birth is used to refer to this specific assignment process and is distinct from but interconnected with sex assignment at birth.

b. **A person’s legal sex.**

This is the sex that is recognized under the law. Legal sex may be different from the sex a person was assigned at birth, since multiple countries allow adults to legally change their sex marker on their identity documents. In Canada, adults can be identified using the markers of M, F or X, which are sometimes also called *gender markers*. In Canada, a person’s M, F or X as a legal sex is not necessarily indicative of their sex assignment, of their experiential sex or of their current anatomy or physiology.

c. **A person's experiential sex.**


This is how a person experiences their sexed body, often in relation to their gender identity. For example, a trans woman might experience her body as female and describe her sex as female because she is a woman. Or an intersex person may describe themselves as having a nonbinary body, where they understand and experience their sex as nonbinary, or as neither male nor female, even if they were assigned a binary sex (InterACT, 2020a).

With these three meanings of sex in mind, people may interpret the question “what is your sex?” in different ways. As a result, within the categories of male or female, we may have people who describe their sex assignments, others who describe their legal sexes, and still others who describe their experiential sexes. We may find, therefore, that our measure has low construct validity since we cannot be entirely certain of what we have measured, though variability in responses can also point to the empirical diversity in how people experience their sexes. We need to be clear and precise about what we ask study participants, to ensure that our questions are not misinterpreted, and that data collected are (more) accurate.

The fallacy of the binary

The words “female” and “male” are often treated as mutually exclusive binaries, where people classified or coded as female are understood as unequivocally different from people who are classified or coded as male. However, evidence suggests that many sexed-based traits and characteristics are more *bimodal* than binary, or at least evidence more variability than commonly thought. This means that people assigned female and people assigned male may have more in common than we might think!

“Documented sex/gender differences in the brain are often taken as support of a sexually dimorphic view of human brains (“female brain” or “male brain”). However, such a distinction would be possible only if sex/gender differences in brain features were highly dimorphic (i.e., little overlap between the forms of these features in males and females) and internally consistent (i.e., a brain has only “male” or only “female” features). Here, analysis of MRIs of more than 1400 human brains from four datasets reveals extensive overlap between the distributions of females and males for all gray matter, white matter and connections assessed (Joel et al., 2015, p. 15468).”



“Many people mistakenly assume that there are male hormones and female hormones, but this idea is challenged by the presence of estrogens (e.g., estradiol) and androgens (e.g., testosterone) in both women and men as well as in gender-diverse (e.g., nonbinary) people, because these hormones, as well as progesterone, are produced by both ovaries and testes as well as the adrenal glands and through peripheral conversion in fatty tissue; these sources are present in all bodies...Another common misunderstanding is that these hormones circulate at sexually dimorphic or nonoverlapping levels. In actuality, average levels of estradiol and progesterone do not differ between women and men...During adolescence, testosterone levels increase in both boys and girls but at a much higher average rate for boys...However, the size of this difference has been mischaracterized; although testosterone levels are higher in men than women on average, the difference is much smaller than widely believed and the distributions show considerable overlap (Hyde et al., 2019, p. 174).”

By focusing on and searching for *differences* between so-called male and female participants, we may inadvertently overlook within, across-sex, and intragroup variability.

“...the concept of sexual dimorphism... for examining biological differences between males and females... obfuscate within and across-sex variation, limiting the precision and applicability of research results (Johnson, Repta and Kalyan, 2012, p. 47).”

“...intra-group variability within each sex may be larger than between-group variability amongst the two sexes... I have set out to argue that sex differences should be demoted to a statistical variable and the search for substantive differences between the sexes abandoned (Lange-Küttner, 2017, p. 5, 14).”

Even when we find statistically significant differences between so-called male and female participants, we often do not have enough information to ascertain what, if anything, is at the root of that difference – be it physiological, behavioral, environmental, etc. As such, asking participants “what is your sex?” or determining that some participants are male, and others are female does not result in data that are necessarily useful.

Returning to the guiding questions, we must first ask ourselves what, precisely, we want to know about our participants and why we want to know it, before determining the best approach to its measurement.

Sex assignments

You might determine that you want to know the sexes that people were assigned at birth. It is important to keep in mind that this is not always needed, however, and should be chosen with intentionality. When this information is useful, here is a question that you can use to collect it:

“What sex were you assigned at birth?”

Response options: open-ended or checkboxes (male, female, something else, prefer not to say).

To ensure that study participants understand what is being asked, you could add an explanatory note to this question. For example:

“This means the sex that someone – typically a medical professional – gave you when you were born, which is often noted on your original birth certificate.”

If you are collecting participants’ sex assignments at birth, there are a few things to keep in mind.

Intersex people exist


Although the provided question above offers the option of “something else,” most intersex infants are ultimately assigned a binary sex of either male or female. As such, the provided question may be insufficient on its own to ascertain who within your sample has a difference, diversity, divergence or variation of sex development (DSD or VSC) and who does not. Thus, you might consider adding a sub-question, such as:

“Were you born with a variation in your physical sex characteristics? This is sometimes called being intersex, or as having a difference, divergence, diversity or variation in sex development (DSD or VSC)?”

Response options: open-ended or checkboxes (yes, no, unsure or prefer not to say).

You may indicate that participants are welcome to answer regardless of official diagnosis and regardless of when awareness of this difference occurred, since some people are identified as intersex/having a DSD/VSC at birth, and for others discover their variation later in life, including at puberty. Differentiating between intersex and endosex participants (that is, people who are *not* identified as having a DSD/VSC)





is important, as each group may have distinct experiences of their genders, sexes, sexualities and of the topic or phenomenon that you are studying. However, the nuances of the intersex experiences are lost when we focus exclusively on endosex people, or when we do not provide a place for participants to disclose that they are intersex.

Additionally, intersex should not be provided as a response option when asking about *gender identity* (Intersex Human Rights Australia, 2019, 2022). Intersex researchers and activists recommend that whether someone is intersex should be asked about explicitly and separately from gender identity and sex assignment questions. If an individual intersex person understands and claims intersex as their gender identity, an open-ended question or supplementary write-in box will give them the opportunity to share that with you. However, separating intersex from questions on gender identity will avoid misgendering and misclassifying intersex people (many of whom will identify as men, women, nonbinary, etc.).

Review InterACT's [helpful guide](#) (2020b), addressing commonly asked questions about intersex data collection and intersex-inclusive question design and the Intersex Human Rights Australia's [page of recommendations](#) (2022) for respectfully including intersex on forms and documents.

Anticipate discomfort

Some participants, including some trans participants, may find this question distressing and harmful and may experience your research negatively because you are asking it (Alpert, Ruddick & Manzano, 2021). It may be helpful to explain to participants *why* you are asking this question. A thoughtful and well-reasoned explanation may be sufficient to assuage potential discomfort. The placement of this question *after* questions about gender identity, thus demonstrating it as lower priority, may also prove a helpful strategy.

Be clear about what was measured & what wasn't

If you only collect people's sex assignments at birth, you are not able to make any claims about their current legal sexes, experiential sexes or current anatomy or physiology. All you know from these data, when considered on their own, is what sex participants were assigned at birth. With this limit in mind, it is important to have a clear idea of why you want to know this information and how you will use it. Alternative and/or additional measures might be needed.

Legal sex

You might determine that you want to know people's legal sexes. Here is a question that you can use to collect this information:

“What is your legal sex?”

Response options: open-ended or checkboxes (M, F, X, something else/prefer to self describe [write-in box], prefer not to say).

To ensure that participants understand what is being asked, you could add an explanatory note to this question. For example:

“This is sometimes called legal gender. This can refer to a letter that appears on your identity documents, like your driver's licence or passport.”

If you are collecting participants' legal sexes, there are a few things to keep in mind.

Amend for jurisdictional specificity

The provided question above includes X as an option, which is available to adults in Canada. You will need to amend the provided response options and explanatory note, so that they are appropriate for the country or state jurisdiction where your research instrument is being used as well as for the age of your participants. For example, in India, the options on various government-issued identity documents are male, female and transgender. In Germany, intersex infants can be granted birth certificates with their sex marked as “indeterminate,” and adults can choose between male, female, diverse and having no marker on their identity documents. In the United States, people in some states may be able to change certain identity documents (e.g., driver's licenses) but not others (e.g., birth certificates). In this case, legal sex is not clear cut and you may need to inquire about their legal sex according to one specific identity document, rather than more generally. To accurately measure legal sex/legal gender, be sure to provide response options that are appropriate and representative of the geographical location where the study is taking place.

Barriers to updating legal documents

Each jurisdiction sets its own rules as to whether, when and how people can change their identity documents, including changing their legal sex marker. The requirements might include providing a medical note signed by an authorized medical or mental health provider, including having that note attest to gender-affirming transition-related care, or status as permanently infertile, childless and/or legally single.



It could be that some participants in your sample *want* to change their legal sexes but have not been able to do so for any number of reasons. Thus, you may additionally ask whether participants have the *intention* of changing their legal sex, including what legal sex they *want* to be recognized as, if they were able to change it.

You might consider adding sub-questions, such as:

“Have you ever legally changed the sex markers on your identity documents?”

Response options: yes, no, I don’t know, prefer not to say.

“Have you ever wanted to or do you currently want to legally change the sex markers on your identity documents, but haven’t?”

Response options: yes, no, I don’t know, prefer not to say.

“If there were no barriers or negative consequences of doing so, what would you like your legal sex to be?”

Response options: M, F, X, something else/prefer to self describe (write-in box), prefer no legal sex marker, I don’t know.

Be clear about what was measured & what wasn’t

If you only collect people’s legal sexes, you are not able to make any claims about their sex assignments at birth, experiential sexes or current anatomy or physiology. All you know from these data is what sex the participants are recognized as being under the law. Alternative and/or additional measures might be needed.

Collecting participant anatomy or physiology

If you determine that you need to know something about participants' anatomy or physiology, there are two ways to gather this information. Remember, anatomy and physiology cannot be ascertained from sex assignment, legal sex, or experiential sex.

First, you might ask for it explicitly. If having a certain body part is of concern to your study you might ask:

“Do you have [insert body part]?”

Or, if a certain physiological capacity is of concern to your study, you may ask:

“To the best of your knowledge, are you capable of [insert physiological function]?”

The specific question asked will need to be precise and free of proxies; for example, you cannot assume that because someone has a uterus, that they are capable of pregnancy. You will need to explicitly inquire about pregnancy capacity.

Second, you might use visual exams, blood tests, ultrasounds or other medical processes to actively measure hormone levels, ovarian follicle counts, height, weight, chromosomes, etc.

If you are asking people about their anatomy or physiology or if you are using medical tests to measure sex-based factors, there are a few things to keep in mind.

Gender/sex entanglement

Factors that are commonly understood as “purely biological,” including many sexed factors, are influenced by the social context. Gender/sex is a concept that describes the ways that human biology and sociocultural gender are intertwined or entangled (van Anders, 2015). For example, behaviour affects hormones levels, just as hormone levels affect behaviour. In this way, even if you were to measure some aspect of sex (like hormones), you would always be measuring a variable that is influenced by gendered norms, roles, socialization and behaviours. It is not possible to separate sexed variables from the influence of the social environment (van Anders, 2013).


Access to information

You might assume that people will have accurate information about their own bodies and its capabilities. However, there are many reasons why a person might not know what body parts they have or what physiological processes their body is capable of. For example, someone who has had a hysterectomy might be unaware as to whether their cervix was also removed or if their ovaries were conserved. Also, some people have undergone sterilization procedures without their knowledge or consent. As such, they might not know that they can no longer produce ova or sperm. Further, most people do not know what genetic configurations they have, such as their chromosome constitution, SRY gene expression or other genetic configurations involved in human biology.

Reframing & renaming

Some trans people may reframe and rename their body parts in accordance with their gender identities, including as a strategy to alleviate dysphoria or distress. For example, a trans man regardless of whether he has accessed gender-affirming hormones or surgery, might call the nerve-dense external part of his genitals a “penis,” whereas many in medical science would call this part of his body a clitoris. As such, he might indicate that he has a penis, if asked. However, this answer might not be what a researcher was expecting when asking participants





to inventory their body parts. It may be helpful to clarify if you are asking explicitly about body parts identified only by their technical names, or if you are open to having people answer in accordance with how they understand and experience their own body. For example, you might say “for the purposes of this question, we are asking about your anatomy using their technical names. We recognize that this may not be the names that you use for your own body parts,” or “for the purposes of this question, we are asking about how you understand and name your own body parts, regardless of whether you use each body part’s technical name.”

Present at birth or surgically created?

It may be helpful to stipulate whether you are interested only in anatomy that was present at birth or if you are additionally or alternatively interested in anatomy that has been surgically created (e.g., one person might have a vagina that was present at birth and another may have had a vaginoplasty, and as such will have what is sometimes called a neovagina – they both have vaginas). It will be important to make the parameters of any anatomy question known to participants, including explaining why you are interested in one form of anatomy and not another. Importantly, no form of anatomy is more legitimate or important than another. However, you may have a good faith reason for limiting participation based on or inquiring about only anatomy that was present at birth, or only anatomy that was surgically created. Communicating this reason to participants is essential.

Be clear about what was measured & what wasn’t

If you only ask people about their anatomy or physiology or otherwise measure or assess these aspects of their bodies, you are not able to make any claims about these participants’ sex assignments at birth, experiential sexes, legal sexes, or gender identities. Alternative and/or additional measures might be needed.

Measuring gender

The measurement of gender may seem straightforward, and it has been treated as straightforward historically and today. However, the measurement of gender is complicated, particularly because gender is a word that can refer to a variety of aspects of personhood, identity and experience. Like sex, gender has multiple interpretations and can be used to refer to the distinct concepts of gender identity, gender expression, gendered roles, gendered experiences, etc. Researchers will achieve more precise and actionable results if they refrain from describing their research as performing “gender-based analysis.” Instead, researchers ought to identify which specific aspects of gender they are addressing in their analyses, for example, by describing their research as gender-identity-based analysis or gender-expression-based analysis. Being intentional about what you are measuring and subsequently analyzing and why, within the complex landscape of gender, will allow research outputs to be precisely named. It will also encourage researchers to reflect on and justify their focus on one aspect of gender over another, considering their research questions, hypotheses and analyses.

In this tool, we focus on the measurement of two aspects of gender – gender identity and gender modality. However, these same principles and guidelines may apply when asking about and measuring other aspects of participants’ genders, such as their gender expressions.

Measuring gender identity

Gender identity describes a person’s internal, felt sense of self in relation to culturally available gender identity terms and labels. Remember, you cannot use gender identity as a proxy for another facet of a person’s identity or experience. Be sure to measure other phenomena additionally or alternatively, as needed for your research study.

There are several important considerations when asking people to share their gender identities.

Balancing inclusive options with data utility


Consider the following lists of response options that you might provide as checkboxes to the question:

“What is your current gender identity?”

Response Option A: man, woman, nonbinary, prefer not to say

Response Option B: man, woman, nonbinary, agender, gender neutral, genderqueer, pangender, bigender, demigirl, demiboy, neutrois, genderfluid, genderflux, something else/prefer to self-describe (write-in box), prefer not to say.





Determining which set of response options is preferable will depend on how you intend to use these data. It will also require that you carefully and thoughtfully weigh the risks and harms of each approach.

If your intention with this information is to **describe your sample**, then Response Option B offers a wider range of gender identity terms than Response Option A and may allow participants to select an answer that more closely reflects how they identify. Response Option B will require that researchers generate categorical lists of possible options, relying on their own (perhaps limited) knowledge of the ever-changing landscape of gender identity terms. It therefore provides a space for participants to write-in a gender identity that is not otherwise listed.

If your intention with this information is to **compare participant groups**, then Response Option A might be preferable, even though it offers far fewer gender identity options and may feel limiting to participants. By offering only a few gender identity options, you stand a greater chance of having sufficient statistical power to run analyses on your three participant groups – men, women and nonbinary people. If you'd gone ahead with Response Option B with the intention of comparative analysis, you might find yourself with “too few” participants espousing certain identities, and these underrepresented participants would likely be excluded from your analysis or aggregated, clustered or collapsed with other gender identities after the fact. Check out [Gender & Sex in Methods & Measurement Tool #3](#) for more information on the process and politics of aggregating, clustering and collapsing data.

An alternative or complementary approach is to **build transparency and agency into your data collection**. You might, for example, use Response Option A and inform participants that you are asking for their input on how they'd like to be grouped for a stated purpose (e.g., for the purposes of stratification or comparison). You might couple this with Response Option B and share with participants that these data will be used to describe the sample and the participants within it more accurately.

Whether you choose Response Option A or B, there is a risk of misclassifying people because of the oversimplification of their existences into checkbox categories that might not accurately fit them. The potential harm associated with this misclassification ought to be considered alongside and balanced with the research goals and aims.

Select one or select all that apply?

Some people have only one gender identity whereas others have more than one. Consider the following questions with this fact in mind:

Response Option A: What is your current gender identity? (Please select one)

Response Option B: What is your current gender identity? (Please select all that apply)

Response Option A will lend itself to more straightforward analyses, with participants being sorted into mutually exclusive groups based on their singular selection. However, Response Option A does not leave room for people who have more than one gender identity. How are these participants meant to respond to this question? By selecting the gender that they identify with most strongly or more of the time? By selecting the gender that others perceive them to be?

Response Option B encourages participants to select more than one gender identity if appropriate. However, Response Option B may result in more complex and complicated analyses or decision processes to get to the analyses. Will the researcher end up overwriting their choices and identities anyway? Will a participant who selected both “woman” and “nonbinary,” be grouped with other women or with other nonbinary participants, or will this participant be represented in both groups? Will you differentiate between women who only selected “woman” as their singular gender identity from those who selected another gender identity in addition to “woman”? Why or why not? It is key to be intentional, in advance if possible, about how you will group participants so that you can ask questions and provide response options that will make sense for your research *and* for your participants.

Measuring gender modality

Gender modality refers to the relationship between a person’s current gender identity and the gender that they were assigned at birth (Ashley, 2021). This is sometimes called gender trajectory (Beischel et al., 2022), or gender vector (Bauer & Hammond, 2015). Cisgender (cis) refers to a person who was assigned a specific gender, and who currently identifies with that gender. Transgender (trans) refers to a person who was assigned a specific gender and who currently does not identify with that gender. Some people claim and/or understand their gender modality as an aspect of their gender identity (e.g., a person might identify as a trans woman) and others do not (e.g., a person might identify as a woman, and will have been assigned the gender of boy/man but might not claim trans as an aspect of her identity; some nonbinary people identify as trans and others do not).

There are several ways to ascertain how participants' current gender identities stand in relation to the gender that they were assigned at birth – to ask about and measure gender modality.

Two-step method

Some researchers collect sex assignment at birth to be used alongside questions of current gender identity to ascertain who within a sample is trans and who is cis. This is called the two-step method (see e.g., Reisner et al., 2014). For example, if a person indicates that they were assigned male and then later in the survey indicates that they currently identify as a man, this person's gender modality could be classified as cisgender. If, however, a person indicates that they were assigned male and that they currently identify as anything other than a man, their gender modality might be classified as transgender. This method has been critiqued as reinforcing the primacy of sex assignment, and as causing distress among participants for whom their sex assignment at birth is a contributor to gender dysphoria (Puckett et al., 2020). There are other ways to measure gender modality that do not require participants to disclose their sex assignments and which may therefore be preferable. Cognitive interviews with trans and cis participants have found that when the two-step method is used, most trans people prefer to be asked about current gender identity question *prior* to being asked about sex assignment at birth (Lombardi & Banik, 2016).

“Trans experience” or “Trans history”

The language of “trans experience” or “trans history” is sometimes used to ask explicitly about whether a person's gender modality is trans (see e.g., Rutherford et al., 2021). Questions like “are you a person of trans experience?” or “do you have trans history?” are used. These are often accompanied by an explanation as to what “trans experience” and “trans history” means (e.g., you might define a person of trans experience as a person who has socially and/or medically transitioned, including those who do not use “trans” as an identification term). This language has its origins in and is frequently used by communities of colour, especially Black communities (Snorton, 2017). This method has the advantage of not requiring participants to disclose their sex assignments. If using a measurement of “trans experience/history” it is important to remember that the participants who answered yes to these questions do not necessarily *identify* as trans. It would be incorrect to look at responses to these questions, alongside responses to questions about current gender identity and then state that “X% of participants identify as trans men.” Keeping in mind the difference between gender modality and gender

identity, it would be more accurate to state that “X% of men in the study were of trans experience/have transitioned,” or “X% of men in the study reported trans history” or “the gender modality of X% of the men in the study was trans.” In this way, you are not ascribing an identity to the participants beyond the gender identity that they selected elsewhere in your survey and you are not assuming that those whose gender modality is trans also identify as trans.

Adding cis/trans to gender identity options

When asking “what is your current gender identity?” researchers might provide different checkboxes for cis women, trans women, cis men and trans men in the response options. The goal is likely to be able to conduct analyses across two or more different axes (i.e., by comparing all men to all women, and by comparing all cis participants to all trans participants). This approach creates a single question to ascertain gender modality and gender identity simultaneously, which may be done to limit overall survey length. There are a few problems with this approach, however. First, it may suggest to participants that you understand cis and trans men as somehow fundamentally different from one another, despite each being men (Puckett et al., 2020). Second, it requires that participants claim cis and trans as aspects of their gender identities, which many people do not. Third, researchers generally do not attach cis/trans qualifiers to nonbinary options, if offered. For instance, they would likely not differentiate between cis nonbinary people and trans nonbinary people. As such, cis/trans become qualifiers only for binary gender identities and not nonbinary ones.

3x3 method

The 3x3 method is an approach that allows researchers to measure gender and sex beyond the binary (Beischel et al., 2022). Rather than classifying participants’ gender modalities as either cis or trans, the 3x3 method offers allogender as a third modality. And, unlike most of the other options, it explicitly asks about binary and nonbinary options, including allobinary as a third binary relation. The 3x3 method allows for a more flexible categorization of participants without requiring that participants disclose their sex assignments at birth while at the same time making space for uncommon and perhaps unexpected combinations across the nine possible locations within the grid. The 3x3 method has the potential to improve the measurement of participants’ gender modalities and identities and would allow for accuracy and detail in describing a research study’s sample. However, this approach might represent a challenge for comparative analyses, since there are nine possible groups that could be compared, some of which might contain very few participants. Having nine potential participant groups might complicate the task of stratifying a sample by gender or ensuring gender representation in randomized controlled trials. These challenges are not insurmountable, however, and the 3x3 method represents an



innovative approach to collecting participants' gender identities and gender modalities in all their complexity, rather than reducing participants to a smaller number of categorical boxes for the sake of simplicity.

Open-ended questions, write-in boxes & coding

To avoid undertaking the impossible task of trying to create an exhaustive list of mutually exclusive response options, researchers may opt for:

1. An open-ended question, where all participants are invited to share their answer in their own words.
2. A supplementary write-in box, where participants are provided with checkbox response options, including a “something else/prefer to self-describe” option, which they can use if their identity or experience is not otherwise listed.

Open-ended questions have the benefit of allowing all participants to freely describe themselves using whatever language they regard as most relevant and accurate. Supplementary write-in boxes are offered alongside checkbox response options that the researcher expects to be accurate and relevant for at least some portion of their sample. The supplementary write-in box allows those participants who do not see themselves reflected by the provided checkboxes to describe themselves freely in their own words.

However, when using open-ended questions and supplementary write-in boxes, you might find yourself with lengthy, participant-produced explanations of some aspect of their identity or experience featuring all the complexity, nuances, dynamics, caveats and even uncertainty that can accompany having an identity or experience. For example, an open-ended question about current gender identity might result in numerous, complicated answers — answers that are not easily categorized — which may highlight participants' misunderstandings regarding what they are being asked, and which may contain details regarding their sexualities, among other things. Limiting open-ended and write-in text boxes to only a single line, or a finite number of words may help ensure that participants do not write responses that are too lengthy; however, this may constrain participants' ability to share the complexities of their identity, which the open-ended formatting is trying to provide.

Most researchers will want to quantify these qualitative, open-ended and write-in responses. However, there is a high risk of miscategorizing and misgendering people whose written answers do not make for easy classification into more normative gender-identity-based participant groups. If you use open-ended

questions and supplementary write-in boxes, it is critical to ensure that someone on your research team, who will be involved in coding these responses, is knowledgeable about gender and sex diversity, including intersex, trans, nonbinary and other existences, identities and experiences.

When it comes to coding, these knowledgeable researchers can create their own coding system or can use existing syntax/codes (see e.g., Cameron & Stinson, 2019, for SPSS and R coding examples). In such cases, researchers will need to decide how many categories they will use and which categories they will preserve. Decisions about how to group participants can range from the relatively simple (participants who identify with terms such as “female” and “woman” would be grouped together and the category called female/woman gender/sex) to the especially complex (how will the research group “nonbinary”, “agender”, “pangender” participants? Will they be separate categories, or will they be lumped together? How will the research group categorize someone who wrote a four-sentence description of their gender that is not reducible to a single category?). As always, these coding decisions ought to be carefully considered, with an eye towards intentionality, precision and harm reduction. See [Tool #3 Sampling Plans & Data Analyses](#) for a discussion of whether, when and how to aggregate, cluster and collapse participants’ data, and [Tool #1 Determining & Communicating Eligibility](#) for a discussion of why you shouldn’t collapse response options that are reflective of different aspects of personhood. For example, participants who answered that their gender identity is “woman” should not be grouped together with participants who used only expression-related terms like “feminine” since gender identity and gender expression are not synonymous and you cannot be certain that these participants share things in common for the purposes of participant grouping.



A note on Two-Spirit participants

Harlen Pruden, a Cree scholar and community organizer, and Travis Salway, a settler researcher and advisory member on this toolkit project, work together at the Two-Spirit Dry Lab, North America's first research group that exclusively focuses on Two-Spirit people, communities and experiences. In their Canadian Institutes for Health Research "[Meet the Methods](#)" resource focused on Two-Spirit inclusion in health research, they write, "Two-Spirit can and may be claimed and used by an Indigenous person as a way to opt out of and/or challenge Western notions of the gender binary (man/woman). Using Two-Spirit in this way is a place-holder and not an identity, as there may be a non-Western, Nation-specific term that is also relevant to their identity. Historically, many First Nations People had more than two genders. Currently, there are around 130 Nation-specific terms within many First Nations languages that name, account and identify these other genders." Two-Spirit also calls into question binary notions of sexual orientation and challenges the separation of gender from sexuality as a Westernized/colonial phenomenon.

Acknowledging that Two-Spirit is an Indigenous concept, recognizing that whether Two-Spirit is a gender identity depends on the individual and the context, and understanding that Two-Spirit does not map neatly onto Western gender (or sexuality) labels, the authors make the following recommendations:

1. Do not include Two-Spirit as an answer option, if asking participants about their gender identities (or sexualities).
2. Embed Two-Spirit into questions about race and ethnicity, allowing only Indigenous participants to select whether they are Two-Spirit.
3. Provide "Something else" or "prefer to self-describe" options when asking about gender identity (and sexuality), which allows Indigenous participants an opportunity to write in Two-Spirit if they so choose. When Two-Spirit is written in, be sure to check the associated race or ethnicity data to ensure that only Indigenous participants who have indicated Two-Spirit as their gender (and/or sexuality) are included in the dataset. Where non-Indigenous people have indicated that they are Two-Spirit, these data should be marked as "missing data" for the purposes of most analyses.

Additional reading

This list includes both additional recommended readings and items that were cited in this tool.

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