

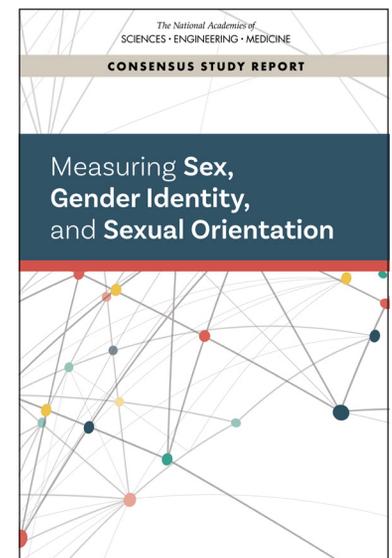


Measuring Sex, Gender Identity, and Sexual Orientation

Sex, gender identity, and sexual orientation are key indicators of the demographic diversity in the United States. Sex and gender are often conflated under the assumptions that they are mutually determined and do not differ from each other; however, the growing visibility of transgender and intersex populations, as well as efforts to improve the measurement of sex and gender across many scientific fields, has demonstrated the need to reconsider how sex, gender, and the relationship between them are conceptualized. This in turn affects sexual orientation, because it is defined on the basis of the relationship between a person's own sex or gender and that of their actual or preferred partners. Sex, gender, and sexual orientation are core aspects of identity that shape opportunities, experiences with discrimination, and outcomes through the life course; therefore, it is crucial that measures of these concepts accurately capture their complexity.

Recognition of the diversity within the lesbian, gay, bisexual, transgender, queer, intersex, and other sexual and gender minorities—the LGBTQI+ population—has also led to a reexamination of how the concepts of sex, gender identity, and sexual orientation are measured. Better measurement will improve the ability to identify sexual and gender minority populations and understand the challenges they face. LGBTQI+ people continue to experience disparate and inequitable treatment, including harassment, discrimination, and violence, which in turn affects outcomes in many areas of everyday life, including health and access to health care services, economic and educational attainment, and family and social support. Though knowledge of these disparities has increased significantly over the past decade, glaring gaps remain, often driven by a lack of reliable data.

The National Institutes of Health (NIH) asked the National Academies of Sciences, Engineering, and Medicine to convene a committee with expertise in sociology, psychology, public health, medicine, survey methodology, and statistics to review current measures and the methodological issues related to measuring sex as a nonbinary construct, gender identity, and sexual orientation. The committee's report offers principles for data collection, guidelines for collecting sex and gender



data, and criteria for selecting recommended measures for sexual orientation identity. The report recommends specific questions that can be used within the general adult population to assess sexual orientation identity, sex assigned at birth, and gender identity, and to identify people with transgender experience and intersex traits.

TERMINOLOGY

Sex is a multidimensional construct based on anatomical and physiological traits (sex traits) that include external genitalia, secondary sex characteristics, gonads, chromosomes, and hormones. **Intersex** refers to people whose sex traits do not all correspond to the same sex.

Gender is a multidimensional construct that links gender identity, which is a core element of a person's individual identity; gender expression, which is how a person communicates their gender to others; and social and cultural expectations about status, characteristics, and behavior that are associated with sex traits. **Transgender** refers to people whose current gender identity is different from the sex they were assigned at birth. **Transgender experience** refers to all people who can be classified as transgender and **transgender identity** refers to people who identify as transgender. **Cisgender** refers to people whose current gender identity corresponds to the sex they were assigned at birth. **Nonbinary** is an umbrella term for gender identities that lie outside the gender binary.

Sexual orientation is a multidimensional construct encompassing emotional, romantic, and sexual attraction, identity, and behavior. Of these concepts, the measurement of sexual orientation has been the most widely studied. Much of the development has focused on measuring sexual identity, however, and the measurement of other dimensions (sexual attraction and sexual behavior) remains understudied.

Two-Spirit is an intertribal umbrella term used by Indigenous people to serve as an English-language placeholder for tribally specific gender and sexual orientation identities that are centered in tribal worldviews, practices, and knowledge. Because Two-Spirit is a term by and for Indigenous peoples and is culturally anchored with particular meaning and, potentially, social status, it is not appropriate for use by non-Indigenous populations.

PRINCIPLES FOR DATA COLLECTION

The report includes guiding principles for data collection to support evaluating and recommending questions that measure sex, gender, and sexual orientation.

- **People deserve to count and be counted (inclusiveness).** Regardless of how data are collected, they reflect the identities and experiences of people and communities that deserve to be heard and respected. Everyone should be able to see themselves, and their identities, represented in surveys and other data collection instruments.
- **Use precise terminology that reflects the constructs of interest (precision).** Data collection questions should clearly specify which component(s) of sex, gender, and sexual orientation are being measured; one construct should not be used as a proxy for another.
- **Respect identity and autonomy (autonomy).** Data collection must allow respondents to self-identify, whenever possible, and any proxy reporting should reflect what is known about how a person self-identifies.
- **Collect only necessary data (parsimony).** Data should only be collected with a specific and well-defined goal in mind, such as documenting or understanding disparities and inequities between populations or meeting legal reporting requirements.
- **Use data in a manner that benefits respondents and respects their privacy and confidentiality (privacy).** Once data are gathered, research findings should be shared back with respondents to ensure that they and their communities benefit from the data they have shared; rigorous privacy and confidentiality standards must also be maintained.

GUIDELINES FOR COLLECTING SEX AND GENDER DATA

Sex and gender are more complex than current measures capture and most data collection instruments do not separately assess both constructs and instead conflate them by using a single measure that may not specify the concept of interest. However, for transgender and intersex people, sex and gender and the dimensions that comprise them may not fall in the same category, and data collection efforts that are not clear regarding which specific dimension of sex or gender is being measured make it difficult to determine how they should they answer.

Aspects of gender shape most experiences in everyday life, from internalized psychological processes to structural constraints, such as sexism and other forms of gender discrimination. It is difficult to disentangle the independent effects of sex and gender on other outcomes because of their combined biological and environmental or contextual influences. Gender-based social structures and expectations can influence behaviors and both create or magnify differences that might otherwise appear to be based in biology due to correlations with sex as a biological variable; however, these processes can only be understood if measures of gender are also routinely collected.

The report concludes that gender encompasses identity, expression, and social position and that data collection efforts should not conflate sex as a biological variable with gender or otherwise treat the respective concepts as interchangeable. Collection of data on gender may at times be more relevant than collection of data on sex as a biological variable, particularly for the purposes of assessing inclusion and monitoring discrimination, for example.

The report also recommends that the standard for NIH be to collect data on gender and report it by default and that collection of data on sex as a biological variable be limited to circumstances where information about sex traits is relevant such as in clinical preventive screenings or for research investigating specific genetic, anatomical, or physiological processes and their connections to patterns of health and disease. In human populations, collection of data on sex as a biological variable should be accompanied by collection of data on gender.

MEASUREMENT CONTEXT

LGBTQI+ people are often subject to mistreatment, segregation, harassment, discrimination, and violence, and therefore reporting information that identifies an individual as a sexual or gender minority may pose risks to respondents. Consequently, respondents should always be able to opt out of providing this information, particularly in contexts where their responses can be linked to personally identifiable information and where the risk of data disclosure is high. Even when individuals are not at risk of being identified, when data are broadly available—even in aggregated form—there is the potential for these data to be misused or misinterpreted to support harmful treatment or policies. Thus, it is important to weigh the need for and benefits of collecting these data with the risk of harm such data collection might pose to respondents.

Much of this research has been conducted with survey data and in research settings, with less evaluative information available on data collection within clinical and health or administrative settings. In the absence of clear evidence that the same measures could not be used across the three data collection settings, the report recommends the same measures of sex, gender identity, and sexual orientation be used within each of these settings.

MEASURING SEXUAL ORIENTATION: IDENTITY

Sexual orientation identity is the cognitive as well as social expression of one's sexual orientation. Thus, it is the dimension that is most consistently tied to experiences with material forms of discrimination and most often invoked explicitly in laws and policies aimed at protecting (or harming) sexual minorities. It is also the dimension with the broadest and longest use in population-based data collection settings to enumerate and distinguish between sexual minority and majority adult populations.

The report recommends a measure of sexual orientation identity that does not conflate sexual orientation identity with attraction or behavior and clearly distinguishes (1) people with different sexual orientation identities and (2) between sexual minority and majority populations. This measure also allows for culturally specific identification for Indigenous populations by including a “Two-Spirit” response category that is restricted to American Indian and Alaska Native (AIAN) respondents. Similar measures have been tested in a diverse range of populations and age groups. The report further recommends topics for future research and development of this measure.

MEASUREMENT OF SEX AND GENDER IDENTITY

The report focuses on measures of gender identity that allow for the enumeration of both transgender and cisgender people and recommends using a “two-step” gender measure that includes both sex assigned at birth and a broad measure of gender identity because this approach is designed to include people with transgender experience who may not identify with the term “transgender”; it can also replace current nonspecific measures of sex/gender used in most data collection contexts. Similar to the sexual orientation identity measure, the gender identity measure allows for culturally specific identification for Indigenous populations by including a “Two-Spirit” response category that is restricted to AIAN respondents. Similar two-step measures have been tested in a diverse range of populations and age groups.

The report also recommends topics for further research and development, including the need for additional “nonbinary” response options for both sex assigned at birth and gender identity, alternative two-step measures that do not collect sex assigned at birth, the effects of proxy reporting on data quality, and expanded testing within youth populations and those with limited English proficiency.

MEASURING INTERSEX STATUS

Measurement of intersex status is complicated by the unique experiences of intersex populations and a limited research base. Biologically, intersex variations are highly heterogeneous, can involve any sex trait, and may not be apparent from an external examination. Most people with intersex traits are assigned male or female at birth and are not identified as having an intersex variation until later in life, if at all. Intersex status is an important demographic characteristic and aspect of identity that also involves private medical information. While there are barriers to disclosure, people with intersex traits appear to want to disclose. For these reasons, the report recommends that when NIH identifies people with intersex traits (differences of sex development) in clinical, survey, research, and administrative settings, it should do so by using a stand-alone measure that asks respondents to report their intersex status. It should not do so by adding intersex as a third response category to a binary measure of sex.

Very little data are available to guide recommendations on best practices for the specific language to use to measure intersex status. The report identifies three questions that have the strongest grounding in evidence, and suggests one of these as a preferred measure because it has been tested among intersex populations. The report also recommends testing the performance of all three measures in general population settings and within intersex populations.

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For More Information . . . This Consensus Study Report Highlights was prepared by the Committee on National Statistics based on the Consensus Study Report *Measuring Sex, Gender Identity, and Sexual Orientation* (2022). The study was sponsored by the National Institutes of Health. Any opinions, findings, conclusions, or recommendations expressed in this publication do not necessarily reflect the views of any organization or agency that provided support for the project. Copies of the Consensus Study Report are available from the National Academies Press, (800) 624-6242 or <https://www.nap.edu/catalog/26424>.

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