

Statistical Brief

Using Sexual Orientation, Gender Identity, Sex, and Sex-at-Birth Variables in Analysis

The Behavioral Risk Factor Surveillance System (BRFSS) added the Sexual Orientation and Gender Identity (SOGI) Module to the approved list of optional modules in 2014 and has been making this module available to the states and participating US territories since that time. In 2019, a single-question module on sex at birth was also added. Prior to the formal adoption of these modules, some states included questions on sex at birth, sexual orientation, and gender identity in the state-added section of their questionnaires; however, the state-added questions may have been asked in different formats and are not included in the public-use data sets. Researchers who want to obtain information for these questions could contact individual state health departments to access pre-2014 SOGI data. [Contact information](#) for the state BRFSS coordinators can be found on the BRFSS website.

Because the Sex at Birth and SOGI modules are related to the traditional question on respondent sex, they may be placed in the core questionnaire within the demographic section of the core. An increasing number of states have adopted the SOGI Module since its introduction. In 2014, 19 states adopted the SOGI module; by 2019, the number had increased to 32. The Sex at Birth module was used by 7 states in 2019. The SOGI questions were modified in 2018 to match the format of questions on sexual orientation in the NHIS. (Note that this modification included a change in the sequence of responses.) The table below illustrates the changes in SOGI, sex, and sex-at-birth questions from 2014 through 2019. Researchers should note that the question on sex may be asked of respondents in either the screening section of the questionnaire, the demographic section, or both. In landline interviews, respondent sex may be determined during the screening process when the number of adult males/females is enumerated, but all respondents are formally asked to confirm their sex in the questionnaire itself. Respondent sex is never imputed as a calculated variable in the BRFSS public-use data set; however, researchers should note that with the addition of sex at birth, the respondent sex variable (and consequently the variable name) has changed. If the responses to sex at birth and sex are reported differently, sex at birth responses will supersede sex in the calculated variable.

Sex Question (Demographics Section) Years prior to 2016	What is your sex?
Sex Question (Demographics Section) 2016-2018	Are you male or female?
Sex Question (Screening Section) 2019	Are you male or female?

<p>Sex at Birth Optional Module (May be included with Demographics Section) 2019</p>	<p>What was your sex at birth? Was it male or female?</p>
<p>SOGI Optional Module 2014-2017</p>	<p>1. Do you consider yourself to be: 1 Straight 2 Lesbian or gay 3 Bisexual 4 Other 7 Don't know/Not sure 9 Refused</p> <p>2. Do you consider yourself to be transgender? If yes, ask "Do you consider yourself to be 1. male-to-female, 2. female-to-male, or 3. gender non-conforming?"</p>
<p>SOGI Optional Module 2018-2019</p>	<p>(For male respondents) Which of the following best represents how you think of yourself? 1 = Gay 2 = Straight, that is, not gay 3 = Bisexual 4 = Something else 7 = I don't know the answer 9 = Refused Ask if Sex= 1.</p> <p>(For female respondents) Which of the following best represents how you think of yourself? 1 = Lesbian or Gay 2 = Straight, that is, not gay 3 = Bisexual 4 = Something else 7 = I don't know the answer 9 = Refused</p> <p>Do you consider yourself to be transgender? 1 Yes, Transgender, male-to-female 2 Yes, Transgender, female-to-male 3 Yes, Transgender, gender nonconforming 4 No</p>

Since there is no corresponding category for respondents who refuse to provide their sex in the population totals used for weighting, their data cannot be used. Therefore, potential respondents who refuse both the sex and the sex-at-birth questions will not be interviewed. In addition, without some

information on respondent sex, skip patterns for sections of the questionnaire related to men's and women's health would be impossible to apply.

Care should be taken when using the SOGI data for interviews conducted in Spanish. Translation of these questions may be modified by states to match the dialect of Spanish that is most common within any state. Interviewers have reported issues with some of the translations for some Spanish-speaking respondents. This experience was especially common prior to changes in the translation in the first two years of administration (2014–2015). The inclusion of language of interview in models to predict outcomes of the SOGI categories may be useful. Researchers should also note that the number of refusals and “do not know” responses is higher for the SOGI questions than for most other sections/modules of the questionnaire. Whether to include refusals and “do not know” responses in analyses should be considered for analyses of these questions.

Some researchers have noted that patterns in the responses to questions on sex, SOGI, and sex at birth are unexpected and do not fit a logical pattern. For example, data may indicate that respondents report different sex and sex at birth categories, but then respond “no” when asked if they are transgender. In 2019 and 2020, a verification of the response was included to ensure that these unexpected responses were not a result of interviewer error. Respondents verified the unexpected result. The BRFSS trains interviewers not to question or point out inconsistencies in responses but merely to verify the responses provided. Researchers should not anticipate or apply “logic” to the patterns in responses to sex, SOGI, and sex at birth.

Since the number of persons in some of the SOGI groups is small, researchers may consider combining states or years of data. If multiple states are used in the analysis, researchers should follow instructions for combining weights. (See documentation on Complex Sampling Weights and Preparing Module Data for Analysis.) If multiple years of data are included in an analysis, weights should be divided by the number of years in the analysis. For example, if the analysis includes two years of data, the weight may be calculated as $_LLCPWT/2$.

The BRFSS is one of the few population-based surveys to include questions on gender identity. Some researchers have noted that the number of response categories for gender identity is limited on the BRFSS. The inclusion of additional categories may be considered over time. The current number of responses, however, is very small, and the inclusion of additional categories would likely produce too few responses to analyze. The BRFSS will continue to monitor methods to include additional information on SOGI as more is known about measurement of this demographic.