



UNIVERSITY OF MINNESOTA

**Work and Family Life Study 2022 (WAFLS)  
Methodology Report**

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## Overview

Gallup fielded the Work and Family Life Study (WAFLS) from March 30, 2022 to June, 28, 2023. The survey covered adults between the ages of 18 and 55 who were married to and living with same- and different-gender spouses. The sample was drawn from the Gallup Panel and the Gallup Recontact sample. Both sample sources are probability-based and are representative of the U.S. adult population. Respondents were asked to complete a 40-minute survey, either via web or phone (which we will refer to as the "main survey"). After completing the main survey, all respondents were asked to complete an online supplement survey. All survey materials were translated into English and Spanish, and 2,002 respondents completed the telephone survey, 1,637 completed the web survey, and 2,899 completed the supplement. WAFLS field work had originally been expected to take place in 2020, but was delayed due to the COVID-19 pandemic.

The 2022/2023 data collection effort is the third cohort of married respondents. The first and second cohorts of married respondents were conducted in 1980 and 2000 via telephone. This cohort, for the first time, included and oversampled people in a same-gender couple. The use of phone and web data collection for the third cohort addressed several concerns. First, the research team recognized that telephone data collection may not be feasible for future cohorts (such as 2040 or 2060) for methodological and budgetary reasons. The survey also has many attitudinal questions, which are susceptible to measurement mode effects, making trended comparisons between web and phone problematic. The 2020 design allowed the team to: 1) directly compare the telephone data to prior waves of data collection, 2) expand the coverage of the survey to same-gender married couples 3) quantify measurement mode effects, and 4) have a self-administered comparison point for future waves. The web and phone data for this survey administration should be treated as two separate datasets and should not be combined for analysis. Note that the supplement can be combined.

## Sampling

Respondents were sampled from the Gallup Panel and the Gallup Recontact sample. Both sample sources, and the sampling procedures for each source, are described in greater detail in the following sections. WAFLS aimed to have completed telephone surveys from at least 2,000 respondents who were married to a different-gender spouse, 600 web completes from respondents who were married to a different-gender spouse and 600 completes from respondents married to a same-gender spouse.

The final datasets included:

- 1) telephone survey responses from 2,002 respondents married to different-gender spouses
- 2) web survey responses from 1637 married respondents, 1,159 respondents married to different-gender spouses and 478 married to same-gender spouses
- 3) supplement web survey responses from 2,899 respondents who also completed the telephone or web survey.

It was important to the study to use probability-based sampling methodologies. Alternative methods, such as the use of online opt-in panels could have been explored for this research to expand sample sizes, particularly among the lower incidence same-gender group. However, using non-probability sample sources would have compromised the ability to project results to the population and to make comparisons to the probability-based sample. Further, probability samples are consistently more accurate than internet opt-in samples (MacInnis et al. 2018; Yeager et al. 2011).

Some Gallup Panel members who completed WAFLS also participated in National Couples' Health and Time Study in 2020/2021 (Kamp Dush and Manning 2025; Marlar et al. 2022). Some Gallup Recontact sample members also participated in Generations (Meyer 2023) or Transpop (Meyer 2021). Individuals who participated in these studies have been flagged in the dataset, but no identification is provided to harmonize these datasets together.

## Gallup Panel Overview

The Gallup Panel was used as the main sample source. The Gallup Panel is a probability-based panel of U.S. adults that is recruited using address-based sampling methods (ABS) and random digit-dial (RDD) phone interviews that cover landline and cell phones. Gallup conducts a nationally representative RDD survey each month with 1,000 completed interviews. At the conclusion of this survey, all respondents are invited to join the Gallup panel. Approximately 65% of respondents who are invited agree to join. Gallup also conducts regular recruiting via ABS. In the ABS recruitment effort, which is conducted approximately six times per year, Gallup sends recruitment materials to randomly selected households via the mail. Respondents are sent a brochure explaining the request and the panel, a small incentive, and are invited to complete a Panel enrollment survey. The ABS recruitment efforts typically oversample households predicted to have demographics needed to replace groups that tend to attrite from the panel at higher rates, including individuals with lower education levels, who are younger, and who are Black or Hispanic. Gallup also regularly conducts nationally representative RDD (telephone) and ABS (paper + online) surveys. At the conclusion of these surveys, respondents are asked if they are willing to be recontacted for a future Gallup survey. Approximately 80% of respondents agree to be recontacted for a future survey and are eligible to receive a small number of survey invitations from Gallup. Gallup refers to this as the "recontact sample" (described in the next section). Some individuals from the recontact sample are selected for recruitment into the Gallup Panel and are contacted by Gallup and asked to join the Panel.

Approximately 90,000 Panel members can be reached for web, mail, or telephone surveys. Another 20,000 Panel members do not have email access but have provided a mailing address and can be reached for mail or telephone surveys. Members who have consented to receive text messages can also receive survey invitations or related communications via text message.

Panel members receive up to three surveys per month, and the typical survey is 10 to 15 minutes in length. The average Panel member completes approximately one survey per month. Most Gallup Panel surveys are self-administered web surveys, and Gallup typically sends respondents an invitation and two to five reminders. The average response rate on a Gallup Panel survey is approximately 40% to 50%, depending on the length of the survey, length of the field period, and the survey topic. Incentives are offered to respondents based upon a variety of factors such as survey burden, available sample size, target population, length of field period, and project budget. Many surveys offer no incentive at all, and most surveys do not offer more than an average of \$2 to \$5 for participation.

Members may remain in the Panel for as long as they would like, given they continue to participate. Gallup frequently reviews participation records and refreshes the Panel sample. Members who continue to be chronic non-responders are removed from the Panel. Gallup conducts regular recruiting efforts to refresh the sample and recruit new members. Adults between the ages of 18 and 34, individuals with lower education levels, and Black and Hispanic participants tend to have lower participation rates than other demographic groups. Gallup's recruiting efforts generally oversample these groups to maintain a demographically balanced sample. Unequal selection probabilities at the selection stage are taken into account in the panel weight assigned to each member.

Gallup maintains a database of demographic attributes on all Panel members, which can be used for efficient and cost-effective sampling of very low incidence populations that would otherwise be extremely costly, if not impossible, to reach. Known panel member information includes variables that were of key interest to WAFLS, including age, gender, race/ethnicity, marital status, and if the respondent identifies as Lesbian, Gay, Bisexual, or Transgender (LGBT).

## Gallup Recontact Sample Overview

As described in the Gallup Panel section, Gallup conducts a large number of nationally representative surveys using RDD dual frame (landline and cellphone) and ABS methodologies. The average response rate (AAPOR Response Rate 3) to Gallup's RDD surveys ranges from 8 to 12%, depending on the survey. For ABS surveys, the average response rate is approximately 18 to 20%. From 2008 to 2017, Gallup

fielded the Gallup Daily Tracking survey via RDD, and collected 1,000 interviews per night, 350 days per year<sup>1</sup>. From 2018 to early 2019, the Gallup Daily Tracking survey moved from telephone to a mail push-to-web design<sup>2</sup> with monthly data collection with approximately 10,000 completed surveys per month<sup>3</sup>. Surveys are conducted in English and Spanish. In mid-2019, Gallup discontinued Daily Tracking, but does maintain the monthly Gallup Poll Social Series (GPSS), which is a monthly RDD survey with approximately 1,000 to 1,500 completes. Many of these representative studies have been used to recruit for other surveys of low-incidence populations, such as the Generations (Meyer 2023) and Transpop (Meyer 2021) research conducted on behalf of UCLA and the National Couples' Health and Time Study (Kamp Dush and Manning 2025), also conducted for the University of Minnesota.

At the end of these national survey efforts, Gallup asks respondents if they would be willing to be recontacted for a future survey. Approximately 80% of respondents agree to be recontacted for a future survey. For respondents who have completed a telephone survey, the respondent's phone number is retained and used for future contacts. For respondents who have completed the ABS survey, an email address is requested for future contact, and the mailing address is also available. Individuals in the recontact pool can be contacted and asked to join the Panel. Individuals who do not join the Panel can be contacted for other studies, however, Gallup limits this contact to a very select number of studies. Most of the recontact sample has never been recontacted at all, and no recontact sample member has been contacted more than a few times. As with the Gallup Panel, Gallup is able to use respondent demographics and substantive answers to sample specific subpopulations.

## Sample Design

The study included married individuals between the ages of 18 and 55 who could complete the survey in English or Spanish. Sampling was carried out to achieve completes from three distinct groups:

- 1) Respondents with different-gender spouses who complete via phone (target n = 2000)
- 2) Respondents with different-gender spouses who complete via web (target n = 600)
- 3) Respondents with same-gender spouses who complete via web (target n = 600)

### *Sample Groups and Replicates*

The telephone survey was expected to be in the field for 12 months. To facilitate data collection over an extended field period, sampling was conducted several times throughout the field period, which we organize in the below table by group. Each group was then split into replicates<sup>4</sup>. The groups and replicates allowed us to slowly release samples into the field and control the timing of the web completes throughout the extended field period. Sampling in groups throughout the year also allowed us to sample “fresh” panel sample – meaning the sample pulls reflected new members that had recently been added and did not sample from members who had been recently removed from the panel. This also allowed us to adapt our strategy throughout the field period and consider alternative sources from the recontact pool.

### *Sampling and Mode Assignment*

It is important to note that people who were sampled for the web survey were required to have an email to receive the web survey invitation. In practice, 95% of the individuals in the panel, who fit the age and marital status requirement, had an email address. Individuals with and without an email could be sampled for the telephone survey. Respondents expected to qualify for the different gender sample could either be assigned to complete via phone or web – if both pieces of contact information were available. In cases where they could be contacted via either mode, random assignment was used to determine if they would be invited to the web survey or the phone survey. More cases were assigned to complete the phone survey, compared to the number assigned to the web, due to expected lower response rates on the phone.

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<sup>1</sup> <https://www.gallup.com/174155/gallup-daily-tracking-methodology.aspx>

<sup>2</sup> In a mail push-to-web design, respondents are sent a survey packet through the mail but have the option to go online to complete the survey.

<sup>3</sup> <https://news.gallup.com/poll/246200/gallup-national-health-index-work.aspx>

<sup>4</sup> Replicates are small sample batches of sample, created from a larger sample. They are used to slowly release sample into the field.

### *Sample Demographics*

For all sampled cases, at least some demographic information was known. All samples were selected based on age criteria. Individuals younger than 17 or over the age of 55 were not sampled. Most samples were also selected based on reported marital status and/or sexual identity (the specific criteria is noted for each sample selected, in the sections below).

Sexual orientation was used to predict whether someone was likely to qualify for the same-gender sample. Gallup asks sexual orientation on the Panel's New Member Survey, which is completed shortly after joining the Panel. The question is also asked of Panel members at least one time per year, and the Panel database (from which sample is drawn) is updated based on the most recent response. The specific question is: *"Do you, personally, identify as lesbian, gay, bisexual, or transgender?" (Yes/No)*

Although we could sample based on sexual orientation, it was not possible to pre-identify whether a respondent is married to someone of the same-gender or different-gender. The Panel database has LGBT status and marital/cohabitation status, but there is no known information about the gender of the respondent's partner. The LGBT question was used as a way to identify respondents with the highest likelihood of qualifying for the same-gender group. It is important to note that many (approximately one-third) of the individuals sampled from the LGBT group were partnered with someone of a different gender and qualified for the different-gender group. A large number of these cases were bisexual women in a marriage with a different-gender spouse. This resulted in a higher proportion of individuals who are LGBT within the different-gender group sample than what would be observed in the population. This issue was addressed in weighting (see weighting section).

Marital status is similarly collected on the New Member survey and updated on a regular basis. The question asked is<sup>5</sup>: *"What is your current marital status?" 1) single/never been married; 2) married; 3) separated; 4) divorced; 5) widowed; 6) domestic partnership/living with a partner (not legally married); 7) don't know.*

### *Sampling Respondents with Same-Gender Spouses*

All Gallup Panel respondents who said "yes" to the LGBT question and who were between the ages of 18 and 55 were selected into the sample ( $n = 2,369$ ). LGBT identity was used as a proxy measure to predict a high likelihood of qualifying for the "same gender" group. However, it was known that some LGBT individuals would qualify for the "same gender" and some individuals would qualify into the "different gender" group. All individuals who met the age and marital status were able to complete the web survey, regardless of the gender of their partner. In other words, we did not screen out LGBT individuals if they did not qualify for the same gender group. Marital/couple status was not a criterion for selection within this group. Although marital status demographics had recently been updated in the panel database, marital status can change and not all respondents answered the question. All respondents were selected (i.e. invited) with the hope of interviewing any respondent who may qualify.

The Panel sample alone did not have enough LGBT respondents to meet the desired number of same-gender completes. To supplement the sample, an additional sample of 1,036 respondents who had completed the Gallup Daily tracking survey, were between the ages of 18 and 55, provided an email address, and said they were LGBT were invited to participate. Respondent age was calculated based on the age at the time the recruitment survey was completed and the amount of time that had passed at the time the sample was drawn. As with the Panel sample, marital status was not considered for the recontact sample, as the surveys had been completed over two years ago and marital status may not be current. Some respondents from this recontact sample had been selected for the Generations or Transpop studies. Of the 1,637 who completed the WAFLS web survey, 305 also completed Generations or Transpop (18.6%). No respondents who completed the WAFLS phone survey had completed Generations or Transpop.

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<sup>5</sup> There are slightly different versions of the marital status question that have been asked on panel surveys and used to update the marital status on record. However, the wording provided is the standard question that is asked on a regular basis.

*Previous Participation in NCHAT*

Some respondents who completed WAFLS also completed the National Couples’ Health and Time Study (NCHAT; Kamp Dush and Manning 2025). NCHAT respondents were not excluded from being selected to participate in WAFLS. All WAFLS respondents who completed NCHAT are flagged in the datasets and the data can be linked by the WAFLS/NCHAT research team using a randomly generated unique identifier. In the web data, there are 487 WAFLS participants who also completed NCHAT (306 different gender and 181 same gender). Of the 2,002 who completed the WAFLS phone survey, 283 also completed NCHAT (14.1%). Of the 1,637 who completed the WAFLS web survey, 555 also completed NCHAT (33.9%).

*Overview of Selected Samples*

The following samples were selected throughout the field period. Each sample is described in more detail in the sections below. All samples were mutually exclusive. For example, if a respondent was selected in Group 1, they were excluded from selection in a future group (groups 2 – 9 in this example).

**Table 1: Sample Selection**

Group*	Sample source	Date sample released into field*	Initial Mode assignment	Sample size*	Expected participation
Group 1	Panel	April 2022	Phone	673	Different gender
Group 2	Panel	June 2022	Web	273	Same gender
Group 3	Panel	June 2022	Web	249	Different gender
Group 4	Panel	June 2022	Phone	315	Different gender
Group 5	Panel	July 2022	Web	1,360	Same and different gender
Group 6	Panel	July 2022	Phone	3,000	Different gender
Group 7	Panel	Nov 2022	Web	1,350	Same and different gender
Group 8	Panel	Nov 2022	Phone	3,000	Different gender
Group 9	Recontact	Nov 2022	Web	3,737	Same gender
Group 10	Recontact	Feb 2023	Web	566	Same gender
Group 11	Panel	March 2023	Web	48	Same gender
Group 12	Panel	March 2023	Phone	1,273	Different gender
Group 13	Recontact	June 2023	Phone	878	Different gender
Total				16,722	

\*Groups 5, 6, 7, 8, 9, and 12 were split into replicates. Replicates are small “batches” of the larger sample that are released into the field over time.

*Panel Sample Selection*

**Group 1:** For the initial survey launch in early April 2022, Gallup selected a sample of 673 telephone respondents from the Gallup Panel. Individuals who were between the ages of 18 and 55, married, did not identify as LGBT, had a phone number on record, and who spoke English were eligible to be included. Spanish speakers were not included in this sample selection because the Spanish version of the survey had not yet been approved by IRB. A random sample of 673 respondents were selected from all eligible respondents. This sample was invited to the telephone survey to pilot test for length and survey flow.

**Group 2:** In June 2022, Gallup selected a sample of 273 individuals from the Gallup Panel who were predicted to qualify for the same gender group. Selected individuals were between the ages of 18 and 55, married, identified as LGBT, spoke English, and had an email address.

**Groups 3 and 4:** Also for the June 2022 fielding, Gallup selected 564 respondents from the Gallup Panel. 315 were selected to participate in the phone survey and 249 were selected to the web survey. For the telephone sample, individuals who were between the ages of 18 and 55, married, did not identify as LGBT, had a phone number on record, and who spoke English were eligible to be included. For the web sample, respondents who were between the ages of 18 and 55, married, did not identify as LGBT, who spoke English, and who had an email address were selected. These individuals were predicted to qualify for the different gender group.

Groups 5 and 6: Additional phone ( $n=3,000$ ) and web sample ( $n=1,360$ ) was added to the field in July 2022. The sample criteria were similar to the sample selected in June, with a few important differences. First, Spanish speakers were included in this sample. Second, the sample predicted to qualify as different gender was stratified by age and education level. The sample predicted to qualify as same gender was not stratified, as the sample size requirements for same gender completes would require eventually sampling all respondents in the panel who identify as LGBT (and who fit the age and marital status criteria). The selected samples were split into 6 replicates.

Groups 7 and 8: Phone sample ( $n=3,000$ ) and web sample ( $n=1,350$ ) were selected from the Gallup Panel in November 2022. These sample groups were the same as described for the July sample selection. The selected samples were split into 6 replicates.

Groups 11 and 12: The final selection of panel sample was drawn in April 2023. This sample was selected with the goal of increasing the number of completes from respondents who were younger and/or who had a high school education or less. 48 fit the criteria to be selected into the same-gender sample and were assigned to complete the web survey (Group 11). 1,273 fit the criteria for different-gender and were assigned to telephone (Group 12). The different-gender web survey had achieved the required number of completes and no different-gender sample was assigned to the web version of the survey.

#### *Recontact Sample Selection*

Prior to the start of the survey, the research team acknowledged that additional sample, beyond the Gallup Panel, would be necessary to achieve the desired number of completes from same gender respondents. We leveraged the Gallup Recontact pool for these additional samples.

Group 9: The first group of recontact sample ( $n=2,290$ ) was selected in November and invited to complete the web survey. This sample was split into 6 replicates. These individuals were selected from the Gallup Daily Tracking Survey (described in an earlier section). The Daily Tracking samples were selected from telephone surveys conducted in 2016 and 2017 and address-based mail-push-to-web surveys conducted in 2018 and 2019. Selected respondents identified as LGBT on the telephone survey and were between the ages of 18 and 55 (we updated ages to reflect current age). We did not use marital status at the time of the original survey, as marital status could have changed since the time the original survey was conducted. Thus, many of the selected respondents did not meet the marital status criteria and screened out of the survey. All respondents had also provided an email address for recontact. The individuals in this recontact sample had all been screened during their initial phone survey for the Generations Study, a study of LGBT adults conducted by UCLA (Meyer 2023). Everyone invited to WAFLS from the recontact had been invited to Generations, but not everyone completed the Generations study. Individuals who completed the Generations survey are identified in the data file.

Group 10: Additional recontact sample was selected ( $n=566$ ) in February and invited to complete the web survey. The respondents were selected from a sample of respondents who had completed a large-scale nationally representative survey conducted on an ongoing basis in 2018 about educational issues. This education survey was conducted via a dual frame RDD survey that covers cellphones and landlines, and the methodology and response rates were similar to that of the Gallup Daily Tracking survey, described in an earlier section. Similar to the Group 8 recontact sample, selected respondents identified as LGBT, were between the ages of 18 and 55 (with age updated to reflect the current age) and provided an email address for recontact. Marital status was not used in the selection.

Group 13: The final sample selection ( $n=878$ ) was in early June 2023. All available panel sample had been selected, and recontact sample was needed to achieve the final desired number of completes. Sample was drawn from the Gallup Poll Social Series (GPSS), which is a dual frame RDD telephone survey that covers cellphones and landlines. All samples were selected from GPSS surveys conducted between June 2022 and May 2023. Selected respondents were between the ages of 18 and 55 and had reported they were married. Sampled individuals all had high school education or less, in an effort to increase the number of

completed surveys from people with lower education levels. Sexual orientation was not used as a selection criterion.

### *Supplement Survey Sample*

All respondents who completed the main survey were eligible to participate in the online supplement survey. The online supplement survey was intended to harmonize with the National Couples' Health and Time Study Wave 1 web survey (Kamp Dush and Manning 2025) with a particular focus on newer, well-validated indicators of marital quality, as well as a few additional scales of particular interest to the WAFLS research team. Everyone who completed the web survey had an email address and all 1,637 were invited to participate in the supplement. The majority of respondents who completed the phone survey also had an email address on record and were invited to complete the supplement survey ( $n=1,982$ ). A small number of phone respondents did not have an email address on record and at the end of the phone survey were asked to provide an email address so that the supplement survey could be sent to them. Only 20 telephone respondents did not have an email address or declined to provide an email address and were not sent the supplement survey. In total, 3,619 respondents were invited to participate in the supplement, 2,899 completed.

## Survey Design and Administration

### Overview

Survey participants were invited to participate in a survey that was approximately 40 minutes in length (48-minute median length on phone and 25-minute median length on web). All respondents expected to qualify for the same-gender group were assigned to complete the survey via web. Respondents expected to qualify for the different-gender group were randomly assigned to complete via phone or web. Upon completion of the initial survey, all respondents, from both the phone and web survey, were also asked to complete the web-based supplement survey.

### Survey Development

The WAFLS team spent more than a year developing survey questions and programming and testing the survey instruments. The telephone instrument was the first survey to be constructed, as this version served as the comparison to the 1980 and 2000 waves of data collection. Once the telephone survey was developed, the web version of the survey was created. Some minor changes were required to the web survey so that self-administered web respondents could navigate the survey on their own and select the appropriate response options. However, the two versions were kept as similar as possible to help improve comparability between the two survey modes. An online supplement survey was also drafted and only required a web version (it was not fielded via phone). We also had a meeting to solicit feedback from Dr. David Johnson (Penn State), Dr. Debra Umberson (Texas), and Dr. Benjamin Kail (Georgia State).

The team began by revising the telephone survey. The first draft of the survey was based on the original 1980 and 2000 phone surveys. The first task was to de-gender the items, for example replacing husband or wife with spouse. Next, some items were deleted due to cultural shifts. For example, a series of items that began with "Do any of the following aspects of (your husband's/your) job cause (you/your wife) concern?" IF YES, ASK: "Is this a serious concern?" and include "meeting too many men/women" and "Taking proper care of the children?" were deleted.

Some members of the research team had also just completed survey development for the National Couples' Health and Time Study, thus some items, such as race, were harmonized with NCHAT. Other items were not asked in 1980 and 2000, such as sexual orientation, because all respondents were assumed heterosexual. Thus, sexual orientation was added. Finally, the survey was long, thus additional items were removed from the 2022 survey such as "How about your children. How often do you wish you didn't have to live with them? Would you say very often, often, occasionally, or never?"

## Translations

All survey materials were translated into Spanish. Language preference is flagged in the sample, and all Spanish speaking respondents received Spanish language invitations. All web respondents had the ability to select a Spanish language survey instrument from the main screen of the survey. Telephone respondents received a pre-notification email that was in either English or Spanish, depending on the sample flag. If someone was flagged as Spanish speaking in the sample, they were initially contacted by a Spanish language interviewer. If someone was flagged as English speaking in the sample, they were contacted by an English language interviewer. However, if a preference or need to complete in Spanish was identified, the interview was routed to a Spanish language interviewer. Gallup works with a professional translation provider for the Spanish language translations. Gallup has partnered with this translation service for more than a decade, and they are familiar with the unique needs of survey instruments and providing translations for survey questions. The translation process begins with the lead translator, who is fluent in English and a native speaker of the target language (in this case, Spanish). A second translator, fluent in both English and the target language, reviews the entire translation for editing (changes to words) and proofing (typos). The two translators resolved any recommended edits.

## Pretesting

The initial draft of the telephone survey instrument was programmed and piloted with 10 respondents in December of 2021. This initial round of surveying was conducted via telephone only and in English only. The pilot interviews served several purposes. First, they were a test of average survey length. Second, the pilot interviews helped to confirm that the screening and consent process went smoothly and presented no challenges or confusion for respondents. The pilot interviews also helped to test the survey communication process and that respondents were receiving their pre- and post-paid incentives and had no questions or confusion about the email communications and telephone interview. Finally, the interview helped to identify areas where respondents may have confusion about the survey questions themselves. Interviewers were trained to record any feedback that respondents provided on the questions and relay these notes to the survey team.

The pilot interviews were an average of 50 minutes in length, which was longer than the planned 40 minutes. Respondents and interviewers also expressed frustration with the length of the consent statement, which required more than a minute for interviewers to read. One respondent reported multiple marriages, and each marital partner was followed by a series of questions about that partner, which added considerable time to the survey and cognitive burden for the respondent. Based on this feedback, the research team made additional cuts to the survey questions, and specifically to the number of questions asked about previous spouses. The consent statement was also revised and resubmitted to IRB for approval.

Once the survey revisions were made, the telephone survey programming was updated, and programming of the web survey instrument began. All final survey materials were also translated, and the final web instrument and all Spanish language materials were approved by the University of Minnesota IRB.

## WAFLS Survey

Data collection for WAFLS began with a soft launch of telephone interviewing on March 30, 2022. Only telephone interviews (no web) and only English language interviews were conducted during this time, to confirm that the average interview length was not longer than expected. After 10 days in the field and approximately 100 completed interviews, the average telephone survey length was approximately 50 minutes long and additional cuts were required. Surveying was paused while the research team made cuts to the survey and the survey programming was updated. Telephone surveying resumed on June 14, 2022, and the first web invitations were sent on June 14, 2022. Spanish language interviews began on August 16, 2022, after the University of Minnesota IRB approved the Spanish language instruments. More details about each mode of data collection are provided in the following sections.

### *Telephone interviewing*

All interviewers assigned to the project were experienced Gallup telephone interviewers with an average Gallup work tenure of over 20 years. The programmed CATI survey provided interviewers with a structured interview, and they were required to precisely follow all programming as intended and read each question and response options verbatim. Prior to the start of interviewing, all interviewers attended a training led by the interviewing manager and the Gallup research team. Interviewers were trained on the purpose of the survey, the consent process and incentives, screening questions and procedures, and the various sections of the survey.

Telephone interviewing used a five-call design, and respondents had to be contacted on different days and during different day parts. Respondents could request that the interviewer call them back at a more convenient scheduled time, either to start or finish the interview.

When possible, Gallup sent a prenotification email to telephone respondents. Most telephone respondents, including almost all Gallup Panel members, had an email on record in the sample file. Individuals reached via the recontact sample file did not have an email address on record. Email address was not collected for these individuals at the time of their initial survey, and a phone number was the only contact information available.

The telephone sample was slowly released into the field in small sample groups (known as replicates). Prenotification emails were sent just prior to each sample replicate being opened for dialing. The prenotification email explained the survey request and indicated that an interviewer would be calling them within the next week or two to conduct the interview. A pre-paid \$5 incentive was provided in the email, as a sign of good-will. A \$20 incentive was also promised upon completion of the telephone interview. The prenotification email included the full consent statement. During the actual telephone survey, interviewers also read the statement and asked for consent.

Respondents who did not have an email on file could not be sent the prenotification email (5% of the sample). They were unaware of the survey when they were reached by the telephone interviewer. For these respondents, the telephone introduction was slightly longer and included the full consent statement. The respondent could also not be emailed the \$5 prepaid incentive, and therefore received a \$25 postpaid incentive.

The telephone survey was for different-gender group respondents only. Respondents who did not qualify for the phone survey (because they have a same-gender spouse) were told they qualified for the web survey. They were then assigned to the web survey and received web invites and reminders as described in the next section.

### **Web respondents**

Web respondents were sent an initial survey invitation and a series of reminders. Invitations were staggered throughout the one-year field period, to mirror the cadence of the telephone data collection. Similar to the telephone prenotification email, the survey invitation described the purpose of the survey, and included a link for the \$5 prepaid incentive and a promise of a \$20 postpaid incentive upon completion of the survey. Anyone who did not complete the survey was sent a series of email reminders. Five reminder emails were sent to all non-respondents within three weeks of the initial survey reminders.

Reminders were sent based upon the date of the initial invitation. In March 2023, all non-respondents were sent another series of reminders, in a final attempt to convert them to a response. These reminders also included a new prepaid incentive link and promise of the postpaid incentive.

Once the respondent completed the survey (defined as reaching the end of the main survey instrument), the survey system sent the respondent the incentive within three hours (see the section on incentives). Completing the survey also triggered the invitation to the supplement survey.

## Incentives

Respondents who completed the main survey received a total of \$25 in incentives (see the above section for details on pre- and post-paid incentives). Respondents who completed the supplement survey received a \$15 post-paid incentive. Incentives were emailed to respondents via a link to Rybbon, if the respondent had an email address. Rybbon was Gallup's incentive partner for all surveys, and Gallup Panel members were familiar with the redemption process. Survey invitations and reminders let all respondents (Gallup Panel and non-Gallup Panel) know that they would receive an electronic reward. The reward link takes respondents to the Rybbon website, where they can redeem their reward for their choice of gift cards, which included major retailers and restaurants. Respondents also had the option to donate their incentive to a charitable organization. Once the respondent selects their incentive, they received an immediate email back from Rybbon with a gift card that could be printed or used electronically.

Respondents who completed the telephone survey and who did not have an email address were asked to provide a mailing address and a \$25 visa gift card was mailed to them.

## Supplement Survey

All respondents who completed the main survey, and who had an email address, were asked to complete the online supplement survey. Upon conclusion of the telephone survey, the interviewer told all respondents about the follow-up online supplement survey, including the \$15 postpaid incentive for completing the online supplement. If a respondent did not have an email address on file, the interviewer tried to collect an email so the online supplement could be sent. Only 20 phone respondents were unable or unwilling to provide an email address to complete the supplement. The conclusion of the web survey also explained the request to complete the online supplement, mentioned the \$15 postpaid incentive, and asked respondents to watch for the survey invitation. All respondents received the online supplement survey invitation approximately one week after completing the main survey. Supplement survey non-respondents were sent up to five reminder emails.

## Mode Switch

In March 2023, the research team decided to contact some non-respondents via the other mode (phone or web), in an effort to maximize response rates. In other words, non-respondents who were previously being contacted via email for the web survey were now contacted to complete the phone survey (n=1,060). Non-respondents who were previously contacted via phone were now invited to the web survey (n=2,918). The telephone survey was intended for different-gender couple respondents, and only web sample that was expected to qualify for the phone survey (different-gender) was moved to the phone sample. All non-responding telephone sample that had also been fully resolved (the sample had been dialed at least five times and no call-backs were scheduled) was invited to participate in the web survey. Additionally, only non-respondents who were between the ages of 18 and 30, or who were non-White, or who had a high school education or less, were switched to the new mode. Because of differential non-response, these groups were underrepresented in the sample, while people who were older, white, and who had a college education had responded at higher rates and were overrepresented in the sample. Therefore, this non-response conversion effort was intended to improve participation from groups that were the hardest to reach and required more effort to gain a response.

## Response Rates

### Survey Response Rates

There are several ways to calculate response rates. The rates below use AAPOR Standard Definitions (Research 2023) and take into account cases that are not eligible and screen out of the survey. For cases that did not complete, an estimated eligibility is calculated. Some respondents were switched to a different completion mode (web or phone) prior to the end of the field period, as described in the previous section. This makes response rate calculations by mode inaccurate. Therefore, we calculate the response rate for

all sample (web and phone) that was invited to participate. The AAPOR RR3 was 33.1%, as detailed in Table 2.

**Table 2:** Response outcomes and response rate calculation

1	Total sampled cases	16,722
2	Completed survey (weighted cases)	3,639
3	Ineligible	2,483
4	Partial complete	113
5	Refused consent	59
6	Attempted survey (2+3+4+5)	6,249
7	Unknown (1-6)	11,888
8	Eligibility rate $((2+4+5)/6)$	60.5%
9	Estimated eligible unknowns $(7*8)$	7,198
10	Total estimated eligible sample $(2+4+5+9)$	11,009
	AAPOR RR3 $(2/10)$	33.1%

Response rate can be calculated based on the initial mode a respondent was assigned to (which may not be the mode used to complete). Among those who were initially assigned to complete the web mode, the AAPOR RR3 is 40.3%. Among those who were initially assigned to complete the phone mode, the AAPOR RR3 is 32.2%.

The supplement survey response rate is 80%, using AAPOR RR1. Everyone who completed the main survey was eligible to participate, and eligibility does not need to be calculated, and the AAPOR RR1 formula can be used to calculate the response rate. This rate is the number who completed the supplement survey, divided by the number of main survey respondents who were invited to the supplement survey.

## Data Cleaning

Prior to weighting the data, several data cleans were implemented. Respondents needed to answer age, sex, gender, partner gender, partner sex, sexual identity, race, ethnicity and education level to determine study eligibility and be weighted. If a respondent was missing all of these demographic variables after data cleaning and imputation (described in the next paragraph), they could not be retained as a completed survey. A respondent was counted as a “complete” if they provided enough demographic data for weighting and answered through at least MAR6 on the survey. Completing through MAR6 means a respondent would have completed approximately 90% of the survey<sup>6</sup>. The research team determined this would be the minimum amount of data required for weighting and to be able to include in the analysis of substantive research questions.

## Weights

### Primary Respondent Weights

Sample data were weighted to minimize bias in survey-based estimates. All eligible respondents who completed the survey were assigned a weight. This section describes the procedures used to create three different sets of weights:

- 1) Weights for the telephone survey (different gender only)
- 2) Weights for the web survey (same and different gender)
- 3) Weights for the supplement web survey (same and different gender)

<sup>6</sup> A respondent could have completed through MAR6 on the survey and have item missing data on questions in the survey.

## **Base-weights**

Gallup Panel members have base-weights that reflect member's selection probabilities into the Panel. For this study, Panel members were sub-sampled at different points in time as described above. For the purpose of calculating base-weights for panel members, their initial selection probability into the panel and subsequent selection probabilities into subsamples was taken into account. In addition to Panel members, additional samples of respondents were selected from Gallup's recontact dataset. The recontact dataset is a list of previously surveyed people in various surveys who have agreed to be recontacted but are not members of the Gallup Panel (see sampling section for more details). Base-weights were calculated for the recontact sample, based on their initial selection probabilities and subsequent sub-sampling, if any, for this study.

## **Targets for Weighting**

One complexity of this project is there is no single data source that can be used to generate distributions for weighting. The 2021 American Community Survey (ACS; U.S. Census Bureau 2023) was used to form the basis of the same-gender and different-gender targets, and the National Health Interview Survey (NHIS; National Center for Health Statistics 2023) is the basis of the estimate of the LGB population, within same and different gender married couples.

One of the primary purposes of the data is to perform analyses of adults with same-gender and different-gender spouses. Therefore, the weighting aimed to adjust demographic distributions within these two main groups independently and then merge and put them in the correct proportions.

The 2021 American Community Survey (ACS) provides variables to subset the data to the WAFLS target population. All targets were pulled based on individuals who are 18 to 55 years old and married. The targets for the telephone survey were for different gender couples. The targets for the web survey were for same and different gender couples. The unweighted ACS sample of the target population consisted of about 665,000 individuals. The following distributions were calculated from the 2021 ACS according to age, sex, race, ethnicity, and education. All targets were calculated for adults 18 to 55 who are married. The term same-sex and opposite-sex were used in the ACS questions about household composition, so we reference sex and not gender when referring to the ACS targets.

**Age:** (1) 18-30; (2) 31-40; (3) 41-55

**Sex:** (1) Male; (2) Female; (*male and female were used to match ACS targets and avoid very small groups for weighting. All other categories were set to missing and then imputed in a multiple imputation process*)

**Race:** (1) White only; (2) Black only (3) Asian only; (4) Others, including non-Hispanic multi-race

**Ethnicity:** (1) Hispanic; (2) Non-Hispanic;

**Education:** (1) High school or less; (2) Above high school but less than bachelor's; (3) bachelor's degree; (4) Some post-graduate education or more

Within the WAFLS survey data, multiple variables were used to identify *couples* in the survey data as either same-sex or different-sex. (For the respondent: D1 – “What sex appears on your original birth certificate”, If D1 was missing, then D2 “Which of the following best describes your gender”; For the spouse: HHR4 – “What sex appears on your spouses’ original birth certificate”, If HHR4 was missing, then HHR5 “How would your spouse describe their gender?”). Respondents were weighted if, based on these questions, they could be classified either as an adult married to a same-sex spouse or an adult married to a different-sex spouse.

Although the ACS includes a large number of same-sex couples, the ACS does not include a direct question asking about sexual orientation. Therefore, for weighting purposes, the distribution of sexual orientation for married couples aged 18 to 55 was drawn from the 2022 NHIS.

The LGB category in the NHIS data was based on a question asking whether the respondent identified as "Lesbian, Gay, Bisexual, and something else." This direct question is of particular interest because the gender composition of the couple cannot be used to identify most bisexuals. In the WAFLS sample, the majority of bisexuals lived with a different-gender partner/spouse rather than a same-gender partner/spouse. Due to the sample design, individuals who are bisexual are overrepresented in the web survey results and are largely observed within the different-gender couple group. Therefore, it is also important that the weighting also adjusts for the proportion of bisexual individuals. The NHIS is used to calculate the sexual orientation distribution targets. Non-LGB married adults were also calculated from NHIS 2022 data.

Within the WAFLS survey data, the variables IDTY\_1 through IDTY\_11 were used to code sexual identity for weighting. The identity question asks people which of the following they consider themselves to be and had 11 "select all that apply" options. Individuals who selected the "heterosexual or straight" response option and no other option were coded as non-LGB for purposes of weighting. Individuals who selected an option other than "heterosexual or straight" were coded as LGB for purposes of weighting.

Both ACS and NHIS targets are weighted distributions. The weights the two datasets use are projectable to the total number of target adults living in the United States.

### ***Raking***

Base-weights were then adjusted using a multiple iterative raking procedure to post-stratify by age, sex, education, race, ethnicity, and sexual orientation (for the web data), using the targets described above. Post-stratification was carried out separately for the phone sample, web sample, and the web supplement survey sample. Sexual orientation was included in the raking of the web data but not the phone data. For the phone data, which only included different-gender couples and did not have a large oversample of individuals who identify as LGB, sexual orientation was not included.

While not a large issue, some cases have missing data in one or more raking variables. Therefore, a multiple imputation procedure is applied to impute missing values. This procedure uses sequential regression models in multiple iterations to predict missing values in multiple variables. Each of the raking variables were used both as predictor and dependent variables in the imputation models. Since predicted values were not as accurate as actual reported values, in order to reduce their influence on weights, ten different values were predicted for each missing, generating ten different datasets. Each of these ten datasets was raked and weights across ten datasets were averaged to produce a single weight value for each case.

Different trimming options were considered for the final weights and the weights were trimmed to arrive at an optimal balance between variance in weights and fit to the target distributions. The two-stage weighting produced weighted distributions that were within a few percentage points of the ACS targets for all weighting variables for both same-sex and different-sex couples. The weights also produced demographic distributions by sexual orientation that are comparable to the NHIS targets. A comparison of the weighted WAFLS demographic distributions to the ACS demographics are provided in the next two tables.

**Table 3: Demographic Comparison of 2021 ACS & 2022 NHIS Married Couples to the Work and Family Life Study (WAFLS) (Web Respondents)**

	ACS		WAFLS			
	Weighted Same-sex	Weighted Different-sex	Unweighted Same-sex	Unweighted Different-sex	Weighted Same-sex	Weighted Different-sex
<i>Sex</i>						
Male	47.8	48.6	55.0	42.8	50.0	48.9
Female	52.2	51.4	45.0	57.2	50.0	51.1
<i>Age</i>						
18-30	19.8	12.8	14.2	14.0	16.7	12.5
31-40	36.2	33.7	39.8	36.2	37.5	32.9
41-55	44.0	53.5	46.0	49.8	45.8	54.6
<i>Education</i>						
High school or less	24.1	28.7	1.6	13.5	8.3	23.4
Above High school below Bachelor's	28.0	27.2	20.2	24.2	37.5	33.3
Bachelor's degree	25.9	26.3	33.6	30.1	29.2	25.6
Some post-grad+	22.0	17.8	44.7	32.2	25.0	17.6
<i>Race/Ethnicity</i>						
Hispanic	22.7	18.9	12.4	20.3	20.8	19.7
Non-Hispanic White only	56.3	61.4	73.4	60.3	58.3	60.5
Non-Hispanic Black only	8.8	7.0	6.5	9.2	8.3	7.3
Non-Hispanic Other Race or Multi-Race	12.2	12.7	7.8	10.2	12.5	12.5

	NHIS Weighted Same-sex	NHIS Weighted Different-sex	WAFLS Unweighted Same-sex	WAFLS Unweighted Different-sex	WAFLS Weighted Same-sex	WAFLS Weighted Different-sex
<i>Sexual Orientation</i>						
Straight/heterosexual	15.7%	97.9%	2.3%	60.7%	4.2%	93.4%
Gay/lesbian/bisexual	84.3%	2.1%	97.7%	39.3%	95.8%	6.6%

**Table 4:** Demographic Comparison of 2021 ACS & 2022 NHIS Married Couples to the Work and Family Life Study (WAFLS) (**Phone Respondents**)

	<b>Weighted ACS Different-sex</b>	<b>Unweighted WAFLS Different-sex</b>	<b>Weighted WAFLS Different-sex</b>
<i>Sex</i>			
Male	48.6	52.9	48.8
Female	51.4	47.0	51.2
<i>Age</i>			
18-30	12.8	7.9	12.6
31-40	33.7	32.2	33.9
41-55	53.5	59.9	53.5
<i>Education</i>			
High school or less	28.7	20.4	25.1
Above High school below Bachelor's	27.2	26.9	30.8
Bachelor's degree	26.3	28.6	26.2
Some post-grad+	17.8	24.0	17.9
<i>Race/Ethnicity</i>			
Hispanic	18.9	16.4	19.0
Non-Hispanic White only	61.4	70.4	61.7
Non-Hispanic Black only	7.0	7.7	6.9
Non-Hispanic Other Race or Multi-Race	11.7	5.4	12.4

	<b>Weighted NHIS Different-sex</b>	<b>Unweighted WAFLS Different-sex</b>	<b>Weighted WAFLS Different-sex</b>
<i>Sexual Orientation</i>			
Straight/heterosexual	97.9%	95.6%	94.0%
Gay/lesbian/bisexual	2.1%	4.4%	6.0%

**Table 5:** Demographic Comparison of Weighted 2021 American Community Survey (ACS) and Weighted Work and Family Life Study (WAFLS) (**Web – Supplement Survey** Respondents)

	ACS		WAFLS			
	<i>Weighted Same-sex</i>	<i>Weighted Different-sex</i>	<i>Unweighted Same-sex</i>	<i>Unweighted Different-sex</i>	<i>Weighted Same-sex</i>	<i>Weighted Different-sex</i>
<i>Sex</i>						
Male	47.8	48.6	54.7	46.6	48.9	48.6
Female	52.2	51.4	45.3	53.4	51.1	51.4
<i>Age</i>						
18-30	19.8	12.8	15.2	10.4	17.0	12.8
31-40	36.2	33.7	37.2	34.8	36.2	33.7
41-55	44.0	53.5	47.6	54.8	46.8	53.6
<i>Education</i>						
High school or less	24.1	28.7	1.6	17.0	8.5	24.1
Above High school below Bachelor's	28.0	27.2	20.7	25.1	42.6	31.8
Bachelor's	25.9	26.3	32.7	29.5	25.5	26.3
Some post-grad+	22.0	17.8	45.0	28.4	23.4	17.8
<i>Race/Ethnicity</i>						
Hispanic	22.7	18.9	12.0	17.3	23.4	18.9
Non-Hispanic White only	56.3	61.4	73.5	66.9	55.3	61.4
Non-Hispanic Black only	8.8	7.0	6.1	8.8	8.5	7.0
Non-Hispanic Other Race or Multi-Race	12.2	12.7	8.4	7.1	12.8	12.7

	<b>NHIS Weighted Same-sex</b>	<b>NHIS Weighted Different-sex</b>	<b>WAFLS Unweighted Same-sex</b>	<b>WAFLS Unweighted Different-sex</b>	<b>WAFLS Weighted Same-sex</b>	<b>WAFLS Weighted Different-sex</b>
<i>Sexual Orientation</i>						

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Straight/heterosexual	15.7%	97.9%	4.2%	81.2%	12.8%	96.2%
Gay/lesbian/bisexual	84.3%	2.1%	95.8%	18.8%	87.2%	3.8%



## **Other External sources**

Other sources of weighting targets were considered. However, data sources that could be used had either a small sample size for LGBT people for the purposes of creating subgroups for weighting (Gallup Poll Social Series), were dated (older years of the National Health Interview Survey), or were not based on the exact same target population (e.g., the National Survey of Family and Growth had a younger target population (upper age limit of 50) and only identified different-sex couples; Julian, Manning and Kamp Dush 2024). The Household Pulse Survey was introduced as an experimental project with the U.S. Census Bureau.

## **Supplement Survey Weights**

The procedures for the supplement survey weighting were the same as the main survey weights. All respondents who completed the phone and web survey were invited to participate in the supplement survey. Therefore, the weights were the combination of the phone and web samples, people who were married to same- and different-gender spouses, and had an oversample of people who identify as LGB and/or same gender, which is corrected for in weighting. The weights from the main survey were used as the base-weight. Next, the sample was post-stratified to the targets, using the same procedures as outlined in the section above.

## **Weighting variables**

WEIGHTS is the constructed weight variable to be used for analysis of the different gender telephone file. This weight should be used when analyzing data from the telephone sample dataset and will generate nationally representative estimates of individuals aged 18 to 55 who are married to a different gender spouse.

WEIGHT is the constructed weight variable to be used for analysis of the same and different gender web file. This weight should be used when analyzing data from the web sample dataset. It will generate nationally representative estimates of individuals aged 18 to 55 who are married to different or same gender spouses. The weights can be used to obtain estimates of subgroups including marriages to same- and different-gender spouses and LGBT and non-LGBT individuals.

WEIGHT is the constructed weight variable to be used for the analysis of the supplement web survey. It will generate nationally representative estimates of individuals aged 18 to 55 who are married to different or same gender spouses. The weights can be used to obtain accurate estimate of subgroups.

The telephone data and web data should be treated as individual datasets. The weights were not constructed with the intention of combining datasets and new weights would need to be constructed if the files were to be combined. Further, combining the phone and web files could introduce unintended measurement mode effects. If analysis on the full sample is desired, 80% of the sample is in the supplement survey file which was designed to be analyzed as a single sample and is weighted as such. Any analyses of the phone and web main survey data would need to be conducted as two separate samples.

To appropriately account for the design effect from weighting, and to obtain accurate standard errors, an analysis package that can take into account the complex study design should be used. These data only include person weights.

## **Non-Response Bias Analysis**

Response rates are a measure of non-response, and high response rates may indicate lower risk of non-response bias than a study with low response rates. However, response rates are very poorly correlated with non-response bias and are not a measure of bias (Davern 2013; Groves 2006; Groves and Peytcheva 2008; Keeter et al. 2006; Maclnnis et al. 2018; National Research Council 2013; Yeager et al. 2011). For bias to occur, non-respondents must have systematically different responses from the respondents on the substantive variables of interest.

To assess the potential for bias, the National Academy of Sciences and the Office of Management and Budget (OMB) have outlined several methods that can be used when response rates indicate a potential risk of non-response bias (National Research Council 2013). These methods may include:

- comparing the weighted and unweighted samples and results
- benchmarking survey estimates and respondent characteristics to gold standard estimates
- conducting a non-response follow-up survey or executing intense non-response follow-up
- time-of-return analysis (comparing late and early responders)
- comparing respondents and non-respondents
- comparing response rates across sub-groups

This non-response bias analysis utilized several of these methods, which are described in the following sub-sections. This study had the advantage of utilizing the Gallup Panel and recontact samples, which provided researchers with a demographic profile of all respondents who were sampled, including non-respondents. Finally, the study went to considerable efforts to convert non-respondents, which were outlined in previous sections, and included multiple contact attempts and inviting participants to participate in another mode.

Taken as a whole, the findings outlined in each of the sections below do not seem to indicate the potential for significant non-response bias. However, it should be noted that the same-gender sample within the web dataset was more highly educated than the official targets for this population, and weighting could not fully adjust for the difference. This can be attributed to very low response rates from low education respondents combined with a finite sample for reaching this very low incidence population. All available sample was released into the field, and it was not possible to stratify the sample or release additional sample to try and improve the sample composition, as could be done with the different-gender phone and web samples. The team decided to maximize the number of completes possible from the sample that was available.

### **Comparison of Demographic Characteristics of Invited Participants and Responding Participants**

Table 6 presents the number of invited participants by demographic groups. Although these numbers are limited in their ability to help assess non-response bias, they do provide useful context for understanding the sample composition and the rest of the analyses in this section.

All numbers in the “invited” column are based on the known demographic attributes of the Panel and recontact sample members at the time they were sampled. All numbers in the “completed” column are based on responses provided in the WAFLS survey.

It is important to note that the sample of invited participants was based on oversamples of several demographic groups to meet minimum sample size requirements for certain subgroups and to account for differential non-response (see sampling section). Therefore, on an unweighted basis the invited sample and completed sample deviate from the population targets. Weighting corrected for deviations from the population targets. Additionally, not everyone who was invited was a part of the target population. The difference between invited and completed includes both people who did not respond and people who were ineligible to participate.

**Table 6:** Comparison of Demographics of Invited Participants and Responding Participants

	<b>N Invited</b> (N = 16,722)	<b>N Completed - Web*</b> (N=1,637**) (unweighted)	<b>N Completed - Phone*</b> (N=2,002**) (unweighted)	<b>N Completed – Total (web+phone)*</b> (N=3,639**) (unweighted)
<i>Gender</i>				
Male/Man***	8709	722	1,060	1,772
Female/Woman	7873	838	942	1,752
Something other than man/woman	66	77	0	77
<i>Age</i>				
18-30	3451	232	158	390
31-40	5066	608	644	1,252
41-55	8170	797	1200	1,997
<i>Education</i>				
HS or less	5318	173	409	582
Above HS below BA	4331	385	539	924
BA or above	6905	1076	1053	2,129
<i>Ethnicity</i>				
Hispanic	3538	300	329	629
Non-Hispanic	13128	1335	1669	3,004
<i>White vs. non-white</i>				
non-Hispanic white	10298	1038	1411	2,449
non-White	3100	373	287	660
<i>Black vs. non-Black</i>				
non-Hispanic Black	1470	161	172	333
non-Black	14609	1320	1699	3019

\*Includes only respondents who met eligibility requirements and who were assigned a weight.

\*\*Numbers do not sum to the total invited or completed because of missing data.

\*\*\*Gallup respondent database (which is used to evaluate who was invited) has gender with the categories male and female. The WAFLS survey (which is used to evaluate who completed) asked gender with the categories man, woman, trans man, trans woman, and do not identify as any of the above. Some people who identified as male or female in the Gallup database identified as something other than man or woman in WAFLS.

### Comparison of Response Rates

This analysis examines the relationship between demographics and response rate. All R.R. calculations were carried out following the AAPOR3 response rate calculation using the total sample and completes (web and phone sample combined). Each person in the sample was classified into one of three eligibility categories: Known Eligible, Known Ineligible, and Unknown Eligibility. For this study, a person was considered eligible if they were between the ages of 18 and 55, married and living with their partner. A person was identified as 'Known Eligible' if they confirmed meeting these criteria. A person was treated as 'Known Ineligible' if they did not meet the eligibility criteria. Finally, a person was included in the 'Eligibility Unknown' category if they did not answer the necessary question(s) to determine eligibility. This unknown eligibility group primarily includes people who never started the survey but also includes people who started the survey but did not answer the initial screening questions.

The R.R. was also calculated by demographic categories for age, gender, race, ethnicity, and educational attainment. These demographic indicators were available for the sample frame for most respondents based on earlier self-reports. Response rates were expected to vary by group for several of the demographic variables. For example, younger respondents, racial and ethnic minorities, and those with low levels of education tend to respond to surveys at lower rates.

**Table 7:** Response rates by demographic groups

Demographic Group	AAPOR3 RR
<i>Age</i>	
18-30	25%
31-40	40%
41-55	35%
<i>Gender</i>	
Male	34%
Female	35%
<i>White vs. non-white</i>	
Non-Hispanic white	41%
Non-white	31%
<i>Black vs. non-Black</i>	
Non-Hispanic Black	35%
Non-Black	34%
<i>Ethnicity</i>	
Hispanic	24%
Non-Hispanic	39%
<i>Education</i>	
High School or Less	16%
Some College	37%
College Grad	50%
<i>Sexual Identity</i>	
LGBT*	26%

\*LGBT response rate can only be calculated for the web sample. All other rates are calculated for the full web+phone sample. LGBT sample relied heavily on sample from recontact sources, which had lower response rates than the panel sample.

As expected, the R.R. was lower for some demographic groups than others. Individuals who were between the ages of 18 and 30, non-white, Hispanic, and/or high school education or less had lower response rates than their counterparts. These factors were all taken into account in the weighting, thereby minimizing the potential for bias due to underrepresentation in the sample.

### Weighted and Unweighted Results – Key Outcomes

This section presents the weighted and unweighted distributions of survey variables that are of key interest to the research team. A comparison of weighted and unweighted distributions gives information about the impact the weighting adjustments had on the estimates. For most questions and response options shown in this analysis, the weighting adjustments made relatively minor differences in the estimates.

**Table 8:** Overall health – Unweighted and Weighted (**Web**)

<i>In general, would you say your own health is excellent, good, fair, or poor? (H1)</i>			
	Unweighted N	Unweighted %	Weighted %
Excellent	286	17.5	17.2
Good	913	55.8	57.2
Fair	352	21.5	21.5
Poor	78	4.8	4.1

**Table 9:** Marital Happiness – Unweighted and Weighted (**Web**)

<i>Marital Happiness – Mean Score</i>			
	Unweighted N	Unweighted	Weighted
Mean Score	1612	26.40	26.05

**Table 10: Marital Conflict – Unweighted and Weighted (Web)**

<i>How often do you disagree with your spouse? (MCC1)</i>			
	Unweighted N	Unweighted %	Weighted %
Very often	16	1.0	1.3
Often	138	8.4	9.0
Sometimes	793	48.4	48.0
Rarely	656	40.1	39.6
Never	24	1.5	1.6

**Table 11: Life Happiness – Unweighted and Weighted (Web)**

<i>Taking all things together, how happy would you say you are these days? (Happy)</i>			
	Unweighted N	Unweighted %	Weighted %
Not too happy	198	12.1	11.0
Pretty happy	922	56.3	57.9
Very happy	511	31.2	30.9

**Table 12: Psychological Distress– Unweighted and Weighted (Web)**

<i>How often have you been bothered by each of the following in the last year? Acid or upset stomach (H9)</i>			
	Unweighted N	Unweighted %	Weighted %
Never	545	33.3	34.0
Sometimes	834	50.9	51.4
Often	249	15.2	13.8
<i>How often have you been bothered by each of the following in the last year? Headaches (H10)</i>			
	Unweighted N	Unweighted %	Weighted %
Never	403	24.6	24.7
Sometimes	901	55.0	56.3
Often	328	20.0	18.7
<i>How often have you been bothered by each of the following in the last year? Breaking out in "cold sweats" (H11)</i>			
	Unweighted N	Unweighted %	Weighted %
Never	1370	83.7	85.8
Sometimes	228	13.9	12.2
Often	34	2.1	1.9
<i>How often have you been bothered by each of the following in the last year? Nervousness, where you were irritable or tense (H12)</i>			
	Unweighted N	Unweighted %	Weighted %
Never	508	31.0	38.4
Sometimes	827	50.5	47.2
Often	298	18.2	14.2
<i>How often have you been bothered by each of the following in the last year? Feeling rather isolated or alone, somewhat apart from others, even among friends (H13)</i>			
	Unweighted N	Unweighted %	Weighted %
Never	702	42.9	49.3
Sometimes	677	41.4	38.6
Often	252	15.4	11.9
<i>How often have you been bothered by each of the following in the last year? Saying you felt that nothing turns out for you the way you want it to (H14)</i>			
	Unweighted N	Unweighted %	Weighted %
Never	1025	62.6	60.3
Sometimes	481	29.4	31.8
Often	125	7.6	7.7
<i>How often have you been bothered by each of the following in the last year? Finding yourself wondering if anything is worthwhile anymore (H15)</i>			

	Unweighted N	Unweighted %	Weighted %
Never	1069	65.3	68.2
Sometimes	423	25.8	25.2
Often	142	8.7	6.6

**Table 13: Overall health – Unweighted and Weighted (Phone)**

<i>In general, would you say your own health is excellent, good, fair, or poor? (H1)</i>			
	Unweighted N	Unweighted %	Weighted %
Excellent	389	19.4	19.1
Good	1129	56.4	56.1
Fair	410	20.5	21.1

**Table 14: Marital Happiness – Unweighted and Weighted (Phone)**

<i>Question text (variable number)</i>			
	Unweighted N	Unweighted %	Weighted %
Mean Score	1973	27.46	27.42

**Table 15: Marital Conflict – Unweighted and Weighted (Phone)**

<i>How often do you disagree with your spouse? (MCC1)</i>			
	Unweighted N	Unweighted %	Weighted %
Very often	35	1.7	1.8
Often	147	7.3	8.4
Sometimes	936	46.8	45.4
Rarely	859	42.9	42.9
Never	24	1.2	1.2

**Table 16: Life Happiness – Unweighted and Weighted (Phone)**

<i>Taking all things together, how happy would you say you are these days? (Happy)</i>			
	Unweighted N	Unweighted %	Weighted %
Not too happy	91	4.5	5.2
Pretty happy	1024	51.1	50.2
Very happy	883	44.1	44.4

**Table 17: Psychological Distress– Unweighted and Weighted (Phone)**

<i>How often have you been bothered by each of the following in the last year? Acid or upset stomach (H9)</i>			
	Unweighted N	Unweighted %	Weighted %
Never	883	44.1	43.4
Sometimes	833	41.6	41.7
Often	286	14.3	14.9
<i>How often have you been bothered by each of the following in the last year? Headaches (H10)</i>			
	Unweighted N	Unweighted %	Weighted %
Never	570	28.5	27.6
Sometimes	1122	56.0	55.8
Often	310	15.5	16.6
<i>How often have you been bothered by each of the following in the last year? Breaking out in "cold sweats" (H11)</i>			
	Unweighted N	Unweighted %	Weighted %
Never	1757	87.8	86.7
Sometimes	196	9.8	10.3
Often	46	2.3	2.6

<i>How often have you been bothered by each of the following in the last year? Nervousness, where you were irritable or tense (H12)</i>			
	Unweighted N	Unweighted %	Weighted %
Never	677	33.8	33.5
Sometimes	1092	54.5	54.1
Often	232	11.6	12.2
<i>How often have you been bothered by each of the following in the last year? Feeling rather isolated or alone, somewhat apart from others, even among friends (H13)</i>			
	Unweighted N	Unweighted %	Weighted %
Never	1176	58.7	56.7
Sometimes	695	34.7	36.3
Often	131	6.5	7.0
<i>How often have you been bothered by each of the following in the last year? Saying you felt that nothing turns out for you the way you want it to (H14)</i>			
	Unweighted N	Unweighted %	Weighted %
Never	1464	73.1	70.6
Sometimes	477	23.8	25.3
Often	60	3.0	3.8
<i>How often have you been bothered by each of the following in the last year? Finding yourself wondering if anything is worthwhile anymore (H15)</i>			
	Unweighted N	Unweighted %	Weighted %
Never	1645	82.2	80.4
Sometimes	311	15.5	16.9
Often	44	2.2	2.6

### Analysis of Correlates of Key Outcome Variables

This analysis used logistic regression models to model predictors of key outcome variables (psychological distress, life happiness, marital conflict, marital happiness, and overall health). All models controlled for the demographics used in weighting - age, education level, sex, couple type (same-gender or different-gender), sexual orientation, race, and ethnicity. Children in the household, employment status, income, and ever received public assistance were also included in all models. These variables are hypothesized to potentially be related to the survey response and the outcome variables of interest, but targets are not available for weighting. For there to be evidence of potential non-response bias related to these factors, the following must occur: 1) the additional variables must be correlated with the dependent variable, controlling for the variables included in weighting, 2) there must be differential non-response rates related to these factors, resulting in an underrepresentation of certain groups, and 3) responders and non-responders need to give significantly different responses.

For example, one might speculate that some individuals with young children are busy and less likely to respond to the survey. However, if having children is not correlated with responses to the dependent variables, no non-response bias is introduced. However, if having children is correlated with the dependent variable (controlling for demographics that were included in weighting), and people who have children are underrepresented in the sample, and the responses from those who have children are meaningfully different from those who do not have children, there is a *potential* for non-response bias.

Tables 18 and 22 show the outcome of the logistic regression model for questions related to psychological distress (H9 through H15) for the web (table 18) and phone (table 22) surveys. H9 through H15 were collapsed into two categories for analysis – code 1 (representing “never” experiencing these feelings) were assigned a code of 0. “Sometimes” and “often” experiencing feelings were assigned a code of 1.

Tables 20 and 24 show the outcome of the logistic regression model for life happiness (HAPPY), marital conflict (MCC1), marital happiness (MARHAP), and overall health (H1). Life happiness was collapsed into: “not too happy” and “pretty happy” = 0 and “very happy” = 1. Marital conflict was collapsed into “Very often”,

“often” and “sometimes” = 0 and “rarely” and “never” = 1. Overall health was collapsed into “excellent” and “good” = 0 and “fair” and “poor” = 1. Marital happiness was a composite score using 10 variables related to marital satisfaction. Marital happiness scores range from 10 to 32. Scores from 10 to 25, which were in the first quartile of scores in the phone data, were coded as 0. Scores from 26 to 32, were coded as 1.

Variables in the logistic regression tables were not correlated with the dependent variable, controlling for the variables included in weighting, and therefore do not meet condition 1 of the criteria for evidence of non-response bias (as described in paragraph 1 of this section). Variables that are significant do meet condition 1 of the criteria, and tables 19, 21, 23 and 25 (described in next paragraph) should be referenced.

Tables 19, 21, 23 and 25 provide predicted probabilities of giving a certain response, by demographic group, which is valuable for interpreting the potential for non-response bias.

As an example of interpretation of these tables, consider MARHAP in Table 20. The presence of a child in the household is a significant predictor of marital happiness. People who have a child in the household are more likely to have a lower marital happiness score than people who do not have a child in the household.

As an example of the interpretation of predicted probabilities, consider MARHAP in Table 21. For respondents with a child in the household, the predicted probability of a marital happiness score of 26 or more is 0.326 compared to 0.456 for those without a child. Respondents with a child in the household account for 48.7% of the web sample, on an unweighted basis. We will make an assumption, strictly for the purposes of this example, that parents were less likely to respond to the survey, and are therefore underrepresented in the sample, and should comprise 60% of the weighted sample. The predicted probability of the sample as a whole having a marital happiness score of 26 or higher would drop from 39.7 to 37.8 with an approximately 10% increase in parents in the sample. If the percent of respondents with a child in the household were to increase to 70% of the sample, the predicted probability would be 36.5. Although presence of child in the household is predictive of marital satisfaction, even if they were underrepresented in the sample, a dramatic increase in the number of parents in the sample would likely not meaningfully change the overall results.

**Web Results**

**Table 18: Part 1 – Web - Results of logistic regression – Psychological Distress**

	H9		H10		H11		H12		H13		H14		H15	
	Wald F	Sig	Wald F	Sig	Wald F	Sig	Wald F	Sig	Wald F	Sig	Wald F	Sig	Wald F	Sig
Corrected model	1.395	0.114	1.700	0.027	0.997	0.463	4.019	0.000	2.321	0.001	2.707	0.000	2.705	0.000
Intercept	6.446	0.011	20.079	0.000	28.182	0.000	17.431	0.000	4.444	0.035	4.275	0.039	2.024	0.155
Child in HH	0.940	0.332	0.426	0.514	0.048	0.827	0.907	0.341	1.162	0.281	3.435	0.064	0.452	0.501
Employment status	0.515	0.672	0.547	0.650	1.325	0.265	1.096	0.349	0.900	0.440	0.858	0.462	2.232	0.083
Household income	1.179	0.318	0.415	0.798	0.523	0.719	0.216	0.930	0.378	0.825	5.323	0.000	4.190	0.002
Public assistance	1.249	0.264	1.700	0.027	1.288	0.257	1.076	0.300	3.368	0.067	0.848	0.357	3.615	0.057

**Table 19: Part 1 – Web - Predicted probabilities by response – Psychological distress**

		H9	H10	H11	H12	H13	H14	H15
Child in HH	Child in household	0.670	0.731	0.148	0.640	0.512	0.342	0.330
	No child in household	0.649	0.774	0.139	0.599	0.504	0.433	0.309
Employment status	Employed full-time and currently working	0.637	0.728	0.141	0.595	0.494	0.381	0.320
	Employed part-time and currently working	0.651	0.791	0.083	0.596	0.476	0.477	0.217
	Employed but not currently working	0.607	0.881	0.253	0.875	0.801	0.169	0.161
	Not employed	0.747	0.838	0.187	0.695	0.561	0.422	0.390
Annual household income	Up to \$47,999	0.776	0.851	0.179	0.669	0.528	0.621	0.546
	\$48,000 - \$89,999	0.722	0.773	0.172	0.648	0.571	0.492	0.388
	\$90,000 - \$119,999	0.648	0.779	0.168	0.632	0.483	0.404	0.330
	\$120,000 - \$179,999	0.660	0.726	0.105	0.584	0.491	0.372	0.266
	\$180,000 or more	0.551	0.711	0.111	0.577	0.469	0.224	0.196
Public assistance	Yes	0.745	0.809	0.191	0.691	0.597	0.504	0.443
	No	0.625	0.737	0.125	0.588	0.474	0.356	0.271

**Table 20:** Part 2 – Web - Results of logistic regression – Life happiness, Marital conflict, Marital happiness, Overall health

	Happy		MCC1		MARHAP		H1	
	Wald F	Sig	Wald F	Sig	Wald F	Sig	Wald F	Sig
Corrected model	3.093	0.000	1.738	0.023	1.711	0.026	3.554	0.000
Intercept	57.542	0.000	3.600	0.058	0.291	0.589	2.654	0.103
Child in HH	0.121	0.728	3.868	0.049	8.849	0.003	5.447	0.020
Employment status	6.755	0.000	1.126	0.337	0.086	0.968	1.891	0.129
Household income	2.486	0.042	2.553	0.037	0.454	0.770	2.397	0.048
Public assistance	0.158	0.691	3.921	0.048	0.031	0.861	3.849	0.050

**Table 21:** Part 2 - Web - Predicted probabilities by response – Life happiness, Marital conflict, Marital happiness, Overall health

		HAPPY	MCC1	MARHAP	H1
Child in HH	Child in household	0.302	0.462	0.326	0.306
	No child in household	0.313	0.376	0.456	0.228
Employment status	Employed full-time and currently working	0.297	0.388	0.410	0.246
	Employed part-time and currently working	0.399	0.437	0.411	0.214
	Employed but not currently working	0.017	0.305	0.360	0.578
	Not employed	0.313	0.495	0.376	0.326
Annual household income	Up to \$47,999	0.231	0.395	0.477	0.361
	\$48,000 - \$89,999	0.309	0.503	0.386	0.291
	\$90,000 - \$119,999	0.273	0.456	0.409	0.351
	\$120,000 - \$179,999	0.291	0.314	0.373	0.193
	\$180,000 or more	0.391	0.365	0.423	0.165
Public assistance	Yes	0.291	0.376	0.413	0.338
	No	0.315	0.424	0.400	0.231

**Phone Results**

**Table 22:** Part 1 – Phone - Results of logistic regression – Psychological Distress

	H9		H10		H11		H12		H13		H14		H15	
	Wald F	Sig	Wald F	Sig	Wald F	Sig	Wald F	Sig	Wald F	Sig	Wald F	Sig	Wald F	Sig
Corrected model	1.252	0.202	3.139	0.000	2.386	0.001	4.519	0.000	4.156	0.000	4.775	0.000	4.239	0.000
Intercept	5.630	0.018	10.710	0.001	17.740	0.000	29.097	0.000	7.106	0.008	0.107	0.744	0.514	0.474
Child in HH	3.854	0.050	1.601	0.206	0.281	0.596	1.031	0.310	5.901	0.015	1.257	0.262	12.529	0.000
Employment status	0.850	0.467	1.271	0.283	3.354	0.018	2.129	0.095	2.869	0.035	3.196	0.023	4.021	0.007
Household income	0.300	0.878	0.299	0.879	0.315	0.868	0.456	0.768	1.604	0.171	8.422	0.000	2.748	0.027
Public assistance	2.465	0.117	0.250	0.617	1.898	0.168	0.656	0.418	4.689	0.030	0.026	0.871	1.553	0.213

**Table 23:** Part 1 – Phone - Predicted probabilities by response – Psychological distress

		H9	H10	H11	H12	H13	H14	H15
Child in HH	Child in household	0.597	0.678	0.111	0.669	0.465	0.319	0.242
	No child in household	0.543	0.726	0.120	0.667	0.419	0.264	0.155
Employment status	Employed full-time and currently working	0.560	0.694	0.094	0.659	0.405	0.270	0.175
	Employed part-time and currently working	0.495	0.745	0.226	0.802	0.562	0.337	0.221
	Employed but not currently working	0.601	0.786	0.203	0.650	0.527	0.288	0.176
	Not employed	0.509	0.896	0.253	0.772	0.799	0.743	0.658
Annual household income	Up to \$47,999	0.649	0.771	0.195	0.672	0.558	0.492	0.302
	\$48,000 - \$89,999	0.561	0.709	0.118	0.681	0.508	0.415	0.250
	\$90,000 - \$119,999	0.579	0.736	0.114	0.682	0.419	0.228	0.167
	\$120,000 - \$179,999	0.533	0.688	0.099	0.641	0.402	0.226	0.140
	\$180,000 or more	0.546	0.697	0.109	0.671	0.370	0.186	0.139
Public assistance	Yes	0.618	0.729	0.167	0.697	0.518	0.351	0.244
	No	0.542	0.704	0.100	0.658	0.406	0.259	0.163

**Table 24:** Part 2 – Phone - Results of logistic regression – Life happiness, Marital conflict, Marital happiness, Overall health

	Happy		MCC1		MARHAP		H1	
	Wald F	Sig	Wald F	Sig	Wald F	Sig	Wald F	Sig
Corrected model	1.406	0.108	1.773	0.019	2.392	0.001	3.037	0.000
Intercept	8.720	0.003	3.574	0.059	7.851	0.005	5.261	0.022
Child in HH	0.011	0.916	3.543	0.060	3.254	0.071	3.074	0.080
Employment status	0.207	0.891	1.367	0.251	3.606	0.013	1.733	0.158
Household income	2.586	0.035	1.433	0.221	1.413	0.227	3.098	0.015
Public assistance	0.273	0.602	0.001	0.977	0.122	0.726	0.419	0.518

**Table 25:** Part 2 - Phone - Predicted probabilities by response – Life happiness, Marital conflict, Marital happiness, Overall health

		HAPPY	MCC1	MARHAP	H1
Child in HH	Child in household	0.419	0.469	0.273	0.262
	No child in household	0.424	0.437	0.312	0.214
Employment status	Employed full-time and currently working	0.420	0.450	0.302	0.210
	Employed part-time and currently working	0.452	0.461	0.292	0.235
	Employed but not currently working	0.437	0.453	0.240	0.350
	Not employed	0.312	0.195	0.664	0.364
Annual household income	Up to \$47,999	0.427	0.466	0.260	0.437
	\$48,000 - \$89,999	0.395	0.423	0.322	0.283
	\$90,000 - \$119,999	0.399	0.511	0.251	0.208
	\$120,000 - \$179,999	0.439	0.430	0.301	0.206
	\$180,000 or more	0.445	0.440	0.320	0.153
Public assistance	Yes	0.433	0.453	0.283	0.302
	No	0.419	0.446	0.304	0.206

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