Riverside University HEALTH SYSTEM

Public Health

in affiliation with

HARC

HEALTH ASSESSMENT AND RESEARCH FOR COMMUNITIES

Riverside County Public Health Community Health Needs Assessment 2021

Contents

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Two local artists contributed artwork to this report, Consuelo Marquez and Darren Olivares. Learn more about them in Appendix A, Artist Bios.

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EXECUTIVE SUMMARY

Introduction

This report summarizes a survey conducted on COVID-19 attitudes towards the virus and vaccination as well as the needs of Riverside County adults. This project was supported by Epidemiology and Laboratory Capacity Enhancing Detection funds, which expands upon previous COVID-19 awards and is provided by the Centers for Disease Control. The present report was developed by HARC, Inc. on behalf of Riverside University Health System – Public Health (hereafter referred to as RUHS – Public Health).

Methods

HARC and RUHS – Public Health worked together to create the survey content. Many questions were developed by HARC and RUHS staff, while others were pulled from existing sources and then modified or retained with the original content. HARC conducted a pilot study to test the survey and assess which data collection method would be best able to maximize response rates. Based on the pilot test, the full study was conducted via address-based random sampling. Specifically, paper surveys in English and Spanish were mailed out to 40,000 residential addresses across Riverside County with a $2 pre-incentive, a pre-paid return envelope, and the promise of a $25 Visa card upon completion and return of the survey. Initial invitations were sent out in September 2021, reminders were sent to non-responders in October. Data collection was closed in November. The final sample size was 9,231 participants, or a response rate of approximately 21.5%.

Data was weighted to ensure true representativeness of the adult population of Riverside County. For context, this data was collected during a time when all adults were eligible for vaccines; Delta variant was surging, and Omicron variant had not yet become common.

Results

Demographics

The study demographics, especially after weighting, matched well to the overall demographics of Riverside County in the latest Census. Approximately half of participants were female, and ages ranged from 18 to 98 with a median of 45. About 46% of participants were Hispanic/Latino, 7% of participants identify as Black/African American, 8% identify as Asian, 2% identify as Native American, and 9% identify as multi-racial. The median household income was $72,000, 14% of participants are living below the poverty line while another 17% live between 100% and 200% of the poverty line. Approximately 10% of participants identify as homosexual, bisexual, or questioning. Participants came

from across the County and were reflective of where the overall population is located. Approximately 35% identify as democrat, 17% as republican, and 15% as independent.

CHA Results

This section summarizes the topics that were included on the survey that were related to RUHS – Public Health's community health assessment (CHA) rather than the COVID-19 Needs Assessment.

Quality of Neighborhood

Participants were asked to rate the quality of their housing, environment, transportation, education, safety, economy, and health/wellness in their neighborhood on a scale from "excellent" to "poor". The lowest rated aspect was transportation; more than 28% of participants rated it as "fair" or "poor". Health/wellness was one of the highest rated factors; only 16% of participants rated it as "fair" or "poor".

Most Important Issues to Address

Participants were asked to rate the five most important health problems that need to be fixed in their community. The most selected needs included mental health problems (47%), obesity (37%), air quality (32%), and environmental pollution (30%).

Participants were asked to rate the five most important social problems that need to be fixed in their community. The most common responses included homelessness (62%), high housing costs (54%), and climate change (31%).

General Health

To measure general health, participants were asked to rate their mental health and their physical health on a scale from "excellent" to "poor". Most participants rated both their mental and physical health as "good" or better. Mental health is slightly higher rated than physical health.

Adverse Childhood Experiences

Approximately 35% of participants had children under the age of 18. These participants were then asked whether their children had experienced four adverse childhood experiences (ACEs): divorce, mental illness, drug/alcohol abuse, and jail/prison. Overall, most children (63%) had not experienced any of these ACEs; however, more than 7,000 children had experienced all four of these ACEs. The most common ACE was the child's parents being divorced or separated (20%), followed by a member of the household experiencing mental illness/depression/or attempting suicide within the child's lifetime (18%).

INTRODUCTION

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About RUHS – Public Health

Established in 1926, the Riverside University Health System-Public Health (RUHS-PH) is the local, public agency responsible with ensuring the health and well-being of county residents and visitors. RUHS-PH's values of respect, integrity, service, and excellence are demonstrated through their strong partnerships with community-based organizations, academic institutions, tribal organizations, faith-based organizations, local governmental agencies and community leaders, local business, social service providers, nongovernmental organizations and other relevant partner organizations necessary to improving the health of Riverside County's community. RUHS - Public Health offers a wide range of services and programs, with a staff of 700 doctors, nurses, health educators, nutritionists, communicable disease and community program specialists, managers, and fiscal and support staff. RUHS - Public Health aims to promote and protect the health of all county residents and visitors in service of the well-being of the community.

About HARC

HARC, Inc. (Health Assessment and Research for Communities) is a nonprofit research and evaluation organization based in Riverside County. HARC advances the quality of life by helping community leaders use objective research and analysis to turn data into action. HARC specializes in providing data that helps improve the social determinants of health. Social determinants of health are the conditions where people live, learn, work, and play. This includes factors such as the economy, education, social structures and support, neighborhoods, the built environment, and of course, healthcare. A healthy community provides residents with education, jobs that pay a living wage, safe and affordable housing, social support, accessible and affordable healthcare, safety from discrimination and injustice, and much more. HARC provides data to support these healthy communities in all aspects of health and wellness.

METHODS

Survey Development

After the pilot test (see below), HARC and RUHS – Public Health reviewed the survey to see if any questions were not working well; all were successful and were retained. However, several questions were added to the survey to measure newly emerging themes during 2021, such as COVID-19 variants, among others. A total of 100 questions were on the final survey. The final survey was translated into Spanish by HARC staff; it was offered in English and Spanish to all participants.

See Appendix B for the full survey (in English), as well as endnotes containing references for question sources and modifications.

Pilot Study

HARC found mixed results in the literature regarding which data collection method would generate the highest response rate. As such, before launching the full survey, HARC ran a pilot test to ascertain what would generate the highest response rate. To run the pilot study, HARC and Ace Printing pulled a random selection of 3,000 Riverside County households. HARC then created six survey conditions and sent the customized package to 500 households.

The six conditions were:

- Paper survey – $2 pre-incentive
- Paper survey – $25 promised incentive (Visa gift card)
- Paper survey – $25 promised and $2 pre-incentive
- Go online – $2 pre-incentive
- Go online – $25 promised incentive (Visa gift card)
- Go online – $25 promised (Visa gift card) and $2 pre-incentive included

Invitations went out in July 2021. Residents had between 2 weeks to one month to complete the survey and return it.

See Table 1 for response rates from the pilot portion of this needs assessment.

Table 1. Response Rates for Pilot Study

Survey Condition	Completed Surveys Received	Response Rate
C. Paper survey – $25 promised and $2 pre-incentive	90	18.0%
A. Paper survey – $2 pre-incentive	77	15.4%
F. Go online – $25 promised (Visa gift card) and $2 pre-incentive included	70	14.0%
B. Paper survey – $25 promised incentive (Visa gift card)	65	13.0%
E. Go online – $25 promised incentive (Visa gift card)	46	9.2%
D. Go online – $2 pre-incentive	46	9.2%
Grand Total	**394**	**-**

Full Study

Based on the results of the pilot study, HARC chose to use the paper survey/$2 pre-incentive/$25 post-incentive method for the full study, as this would provide the highest response rate and reduce any potential impact of non-response bias.

As such, Ace Printing purchased a random sample of 40,000 households in Riverside County. HARC and Ace mailed an "invitation package" to all 40,000 households, which included a cover letter (in English and Spanish), a paper survey in English, a paper survey in Spanish, a pre-paid return envelope, and a $2 bill as a pre-incentive. Each survey was printed with a unique identifier code so that each household could only participate once.

Invitation packages were mailed out in eight batches of 5,000 on the following dates:

- Batch 1: 9/15/21
- Batch 2: 9/16/21
- Batch 3: 9/21/21
- Batch 4: 9/22/21
- Batch 5: 9/24/21
- Batch 6: 9/27/21
- Batch 7: 9/29/21
- Batch 8: 9/30/21

Residents were offered a $25 Visa card as a post-incentive; as such, those who returned the survey were sent a $25 Visa card within two weeks of receipt of their paper survey.

Reminder packages were mailed to non-respondents, beginning on 10/15/21. The reminder package included a cover letter (in English and Spanish), a paper survey in English, a paper survey in Spanish, and a pre-paid return envelope. Each survey was printed with the same unique identifier code to continue to track participation.

Residents were given approximately one month before they were categorized as "non-responders" and were sent a reminder package. Reminders went out between 10/15/21 and 10/29/21. Earlier reminders requested that surveys be returned no later than 10/31/21 (with 11/5/21 as the final cut-off for those who wanted a post-incentive); later reminders requested that surveys be returned no later than 11/5/21 (with 11/12/21 as the final cut-off for those who wanted a post-incentive).

HARC processed incoming surveys and entered them into an online database. Data entry was completed on 11/23/21. Each week, HARC sent a list of completers to Ace Printing so that Ace could send out the $25 Visa cards as post-incentives. A few surveys came trickling in after data entry was completed on 11/23/21; however, due to time constraints on the reporting, these were not included in the final dataset or the final report.

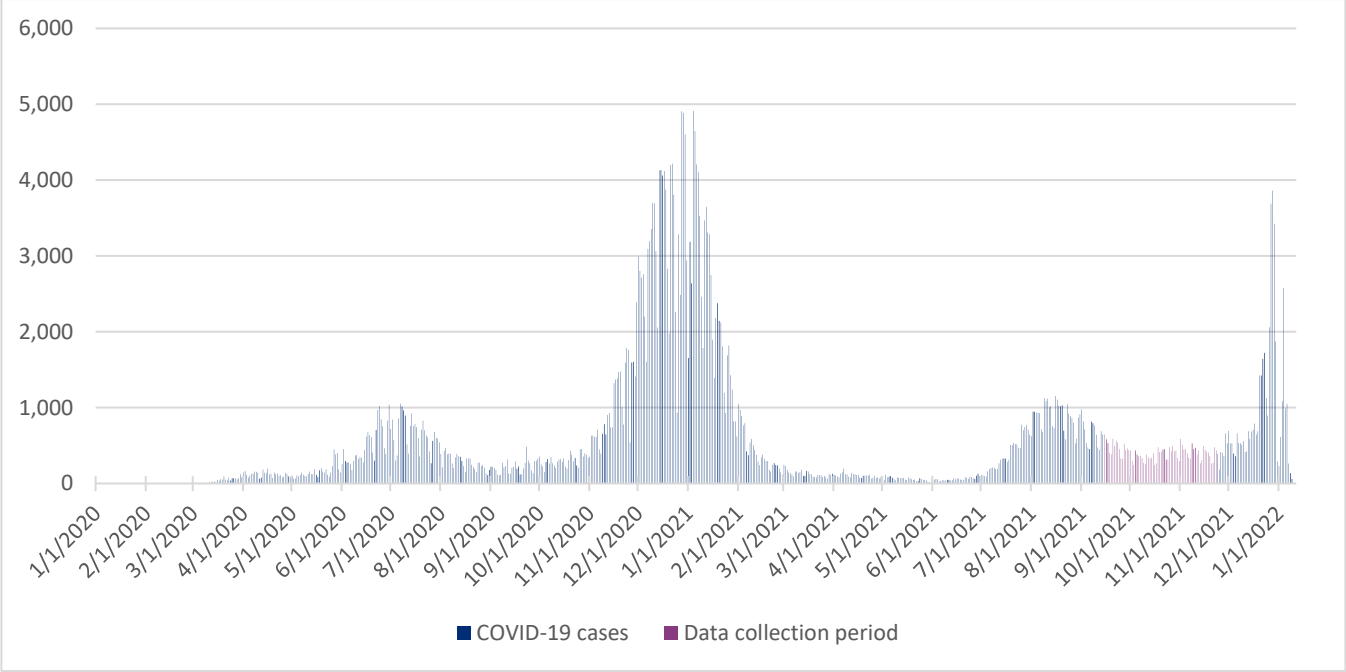
On 11/24/21, the dataset was sent to a statistician for weighting. Weighting is important to ensure that the results of the survey appropriately represent the county. Missing data were imputed using a hot deck method. Iterative proportional fitting was used to ensure marginal distributions for age, sex, race by ethnicity, and household income aligned. Weights were rescaled to the 2020 Census population estimates (1,823,505 adults living in Riverside County). See Appendix C for the details of the weighting methodology.

In the end, combining responses from the pilot study and the full study, the sample size was 9,231. This represents a response rate of approximately 21.5%.

Because of the weighting of the data, the population estimates illustrated in this report are closer to 1,823,505 (the number of adults in Riverside County) rather than 9,231 (the number of completed surveys).

Figure 1 below provides additional context to the data collection timeline. That is, data was being collected right after the detection of the Delta variant and before the detection of the Omicron variant. The purple cases in the figure below indicate the data collection period.

Figure 1. COVID-19 Daily Cases in Riverside County



Note: Data in chart are from RUHS - Public Health.

RESULTS: Community Health Needs Assessment

A total of 9,231 surveys from the randomly selected sample of 40,000 Riverside County households were completed and sent back to HARC by the close date of the survey. Because this sampling strategy was designed with the intent of representing Riverside County households, United States Census Bureau data are presented below in comparison to the present study sample to illustrate the extent to which the data matches.

Study Sample Compared to County Demographics

When comparing the household income of the present study sample to Census estimates, there is only a slight deviation of a few percentage points for each household income category. Furthermore, the Census estimates the median household income of Riverside County households at $73,620, and the average household income at $95,564.[1] Comparatively, the present study sample has a similar household median income of $72,000 and a similar average household income of $93,421. In other words, the study sample very closely resembles the household income characteristics of Riverside County.

See Table 2 for additional information.

Table 2. Household Income Census Estimates Compared to Study Sample

Household Income	Census Estimates	Study Sample
Less than $14,999	8.7%	6.8%
$15,000 to $34,999	14.1%	17.0%
$35,000 to $74,999	28.2%	29.0%
$75,000 to $149,999	31.9%	31.6%
$150,000 or more	17.0%	15.6%
Total	**100.0%**	**100.0%**

Note: Census estimates are from the American Community Survey, 2019 one-year estimates.

[1] Census estimates are from the American Community Survey, 2019 one-year estimates.

The age distribution of the present study sample is slightly different from that of Census estimates for Riverside County. Specifically, there was a slight negative skew or greater percentage of higher age groups and fewer percentages of lower age groups in the present study compared to Census estimates. For instance, about 13.9% of Riverside County households include people ages 70s and older according to the Census;[2] however, the current sample has this estimate at 27.5%. Thus, slightly more older individuals were more likely to participate in this survey.

See Table 3 for additional details.

Table 3. Age Categories Census Estimates Compared to Study Sample

Age Categories	Census Estimates	Study Sample
18 to 29	22.3%	5.2%
30s	18.0%	11.0%
40s	16.6%	14.8%
50s	16.0%	17.9%
60s	13.3%	23.6%
70s+	13.9%	27.5%
Total	**100.0%**	**100.0%**

Note: Census estimates are from the American Community Survey, 2019 one-year estimates.

Sex for the population 18 years and older was biased towards females. That is, according to the Census,[3] females represent approximately 50.5% of the Riverside County population, whereas about 62.3% of the study sample was female.

See Table 4 for additional details.

Table 4. Sex Census Estimates Compared to Study Sample

Sex for the population 18 years and older	Census Estimates	Study Sample
Male	49.5%	37.7%
Female	50.5%	62.3%
Total	**100.0%**	**100.0%**

Note: Census estimates are from the American Community Survey, 2019 one-year estimates. For the study sample, this utilizes the question of gender assigned at birth (not current gender identity).

[2] Census estimates are from the American Community Survey, 2019 one-year estimates.
[3] Ibid.

The present study sample had a higher percentage of people identifying as "White alone" (69.1%) compared to the Census estimates of 44.1%.[4] Thus, the White population was more likely to participate in the survey while those identifying as multiracial, and other races [Some other race (SOR) alone, AIAN (American Indian and Alaska Native) alone, NHOPI (Native Hawaiian and Other Pacific Islander) alone] were less likely to participate. However, the percentage of those identifying as Black alone or Asian alone in the study sample matches Census estimates.

See Table 5 for additional information.

Table 5. Race Census Estimates Compared to Study Sample

Race for the population 18 years and older	Census Estimates	Study Sample
White alone	44.1%	69.1%
Black alone	6.5%	6.5%
Asian alone	7.5%	7.2%
Other: Includes Some other race (SOR) alone, AIAN (American Indian and Alaska Native) alone, NHOPI (Native Hawaiian and Other Pacific Islander) alone	26.8%	11.0%
Multiracial	15.1%	6.2%
Total	**100.0%**	**100.0%**

Note: Census estimates are from the 2020 Decennial Census.

Echoing the same themes of race, those identifying as Hispanic/Latino (30.1%) were less likely to participate in the survey as about 45.6% of Riverside County adults identified as Hispanic Latino.

See Table 6 for additional information.

Table 6. Ethnicity Census Estimates Compared to Study Sample

Ethnicity for the Population 18+	Census Estimates	Study Sample
Hispanic/Latino	45.6%	30.1%
Not Hispanic/Latino	54.4%	69.9%
Total	**100.0%**	**100.0%**

Note: Census estimates are from the 2020 Decennial Census.

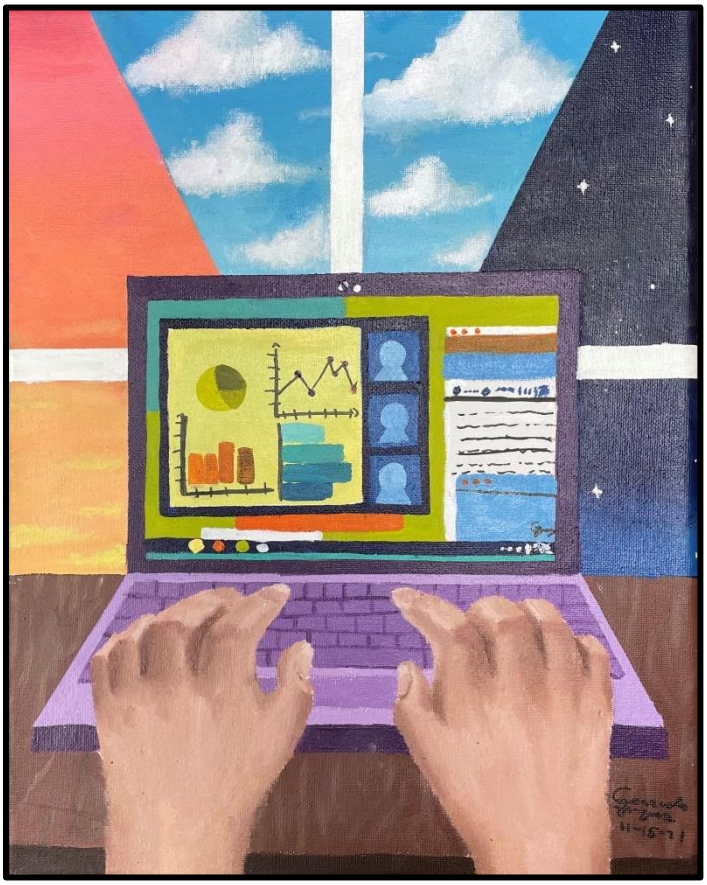
[4] Census estimates are from the 2020 Decennial Census.

Weighted Data

Considering the preceding demographic results, a fair amount of demographics were approximately similar; however, there were some slight biases towards older and White-identifying individuals. Thus, the survey results were weighted to account for these demographic differences to provide a more representative illustration of the county.

All results that follow were weighted according to the United States Census Bureau, American Community Survey, 1-year estimates (Household Income, Age, and Sex), and the Decennial Census, 2020 (Race, Ethnicity, and Race by Ethnicity). This essentially "corrects" for the skewed data; for example, in the final weighted data, gender is fairly evenly split between men and women, despite the fact that the unweighted data skewed towards more female participants.

While figures/tables may include estimates such as "percentages", "frequencies", "counts", etc., these all refer to weighted estimates and percentages. Furthermore, the survey results contain data for and are weighted for the adult population only. Thus, this report may refer to "residents" a number of times, and these residents are always Riverside County residents who are ages 18 and older.



Demographics

Geography

Residents were sampled from across the various cities and Census Designated Places (CDPs, often smaller unincorporated areas) in Riverside County. The top three cities included the City of Riverside (16.4%), Corona (11.8%), and Moreno Valley (6.6%). See Table 7 for additional details.

Table 7. City of Riverside County Respondents

City	Weighted Percent	Weighted Count
Riverside	16.4%	297,875
Corona	11.8%	214,952
Moreno Valley	6.6%	120,046
Temecula	5.9%	107,763
Hemet	4.8%	87,233
Murrieta	4.8%	86,757
Indio	4.0%	72,292
Menifee	3.9%	71,192
Palm Desert	3.9%	71,109
Perris	3.5%	63,860
Palm Springs	3.5%	63,572
Lake Elsinore	3.4%	62,584
Cathedral City	2.7%	49,624
Eastvale	2.6%	47,846
Beaumont	2.3%	41,568
Jurupa Valley	2.1%	38,505
La Quinta	1.9%	34,234
Desert Hot Springs	1.7%	31,624
San Jacinto	1.6%	28,983
Wildomar	1.6%	28,507
Winchester	1.4%	25,340
Coachella	1.3%	24,482
Banning	1.3%	23,593
Rancho Mirage	1.2%	20,984
Cities with less than 1.0% of the sample	5.7%	104,365
Total	**100.0%**	**1,818,889**

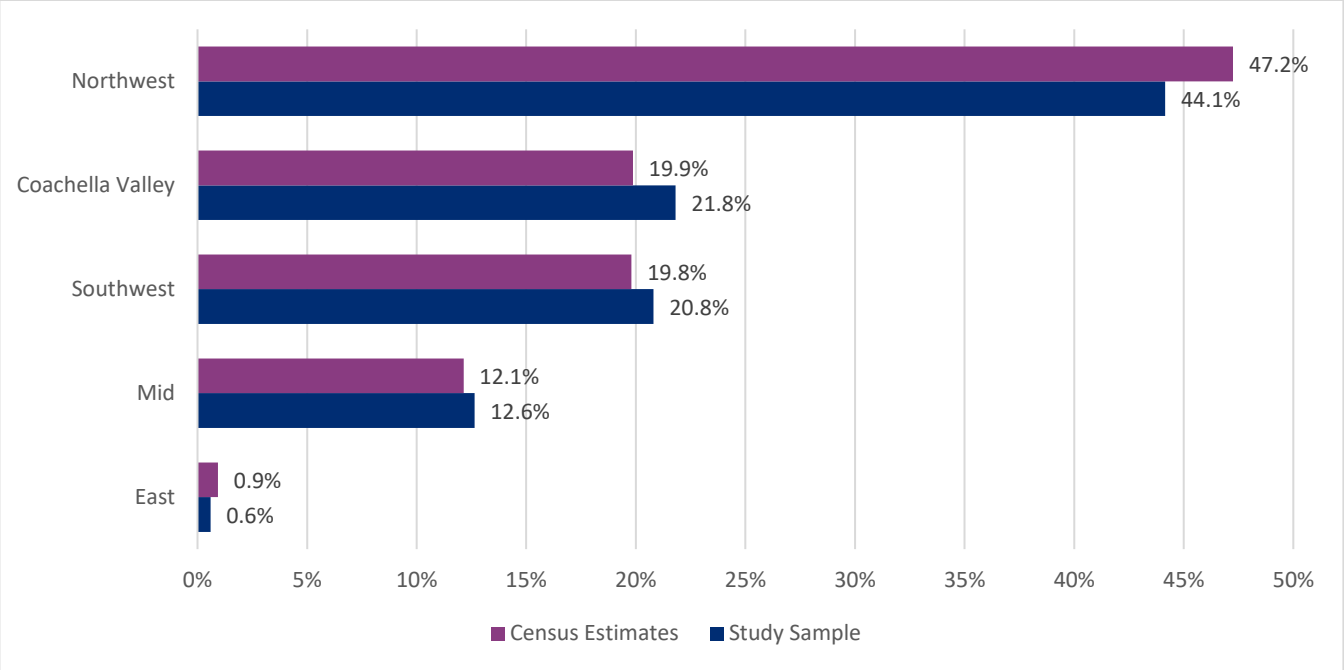
Note: Cities with less than 1.0% include: Norco, Sun City, Blythe, Bermuda Dunes, Calimesa, Canyon Lake, Thousand Palms, Homeland, Indian Wells, Cherry Valley, Mecca, Nuevo, Quail Valley, Mountain Center, Thermal, Aguanga, Anza, Whitewater, Romoland, March Air Reserve Base, Colton, Cabazon, Ripley, Lakeview, and Temescal Valley.

Each city within Riverside County is organized into Public Health Regions, which are mutually exclusive of each other. Nearly half (44.1%) of the sample represents the Northwest region. Note that East only has about 0.6% represented, and that is due to the lower number of cities that comprise the East region (i.e., Blythe, Desert Center, Mesa Verde, Ripley).

For context, the adult population for each Public Health region using the American Community Survey from the U.S. Census Bureau is also presented. Percentages based on Census estimates approximate the sample. This indicates that no individual region of the County was especially over-represented in the final sample; responses were very comparable to the overall population. See Figure 2 for additional details.

See the table on the following page for a list of cities by each Public Health Region.

Figure 2. Public Health Region



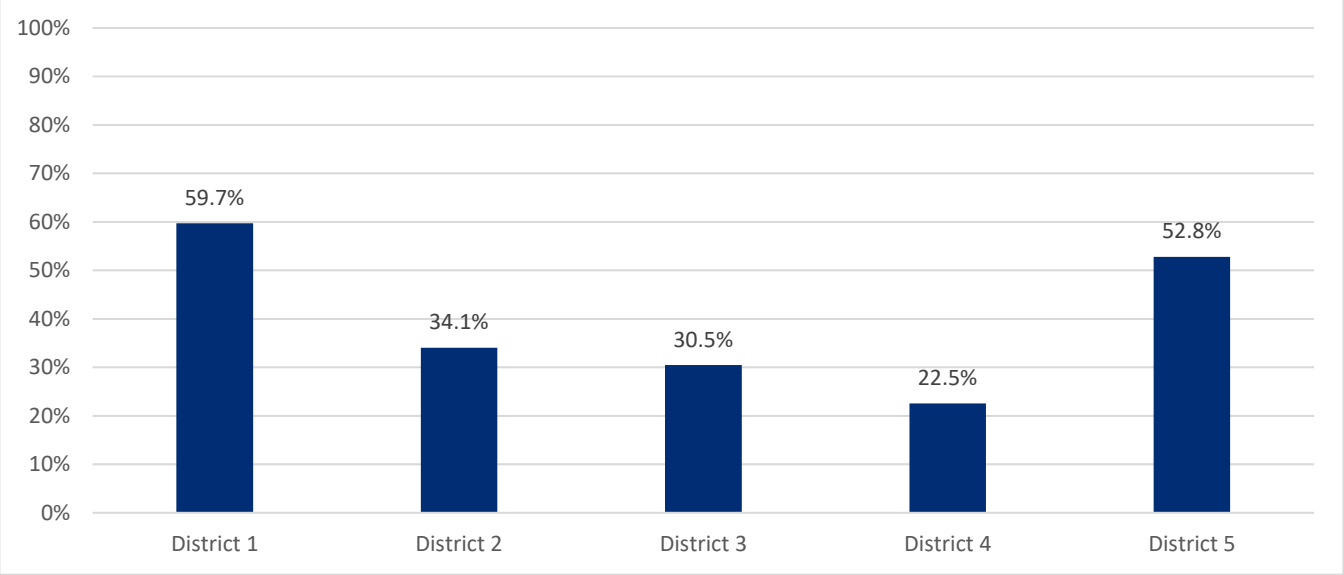
Note: Census estimates based on adult population (18 years and over) American Community Survey – 5-year estimates. *n* = 1,817,639 for study sample.

Table 8. Public Health Region by City

Northwest	Southwest	Mid	Coachella Valley	East
Corona	Canyon Lake	Aguanga	Bermuda Dunes	Blythe
Coronita	French Valley	Anza	Cathedral City	Desert Center
Eastvale	Lake Elsinore	Banning	Coachella	Mesa Verde
El Cerrito	Lakeland Village	Beaumont	Desert Edge	Ripley
El Sobrante	Meadowbrook	Cabazon	Desert Hot Springs	
Good Hope	Menifee	Calimesa	Desert Palms	
Home Gardens	Murrieta	Cherry Valley	Garnet	
Jurupa Valley	Temecula	East Hemet	Indian Wells	
Lakeview	Warm Springs	Green Acres	Indio	
Nuevo	Wildomar	Hemet	Indio Hills	
Lake Mathews		Homeland	La Quinta	
March ARB		Idyllwild-Pine Cove	Mecca	
Mead Valley		Lake Riverside	North Shore	
Moreno Valley		Mountain Center	Oasis	
Norco		San Jacinto	Palm Desert	
Perris		Valle Vista	Palm Springs	
Riverside		Winchester	Rancho Mirage	
Romoland			Sky Valley	
Temescal Valley			Thermal	
Woodcrest			Thousand Palms	
			Vista Santa Rosa	
			Whitewater	

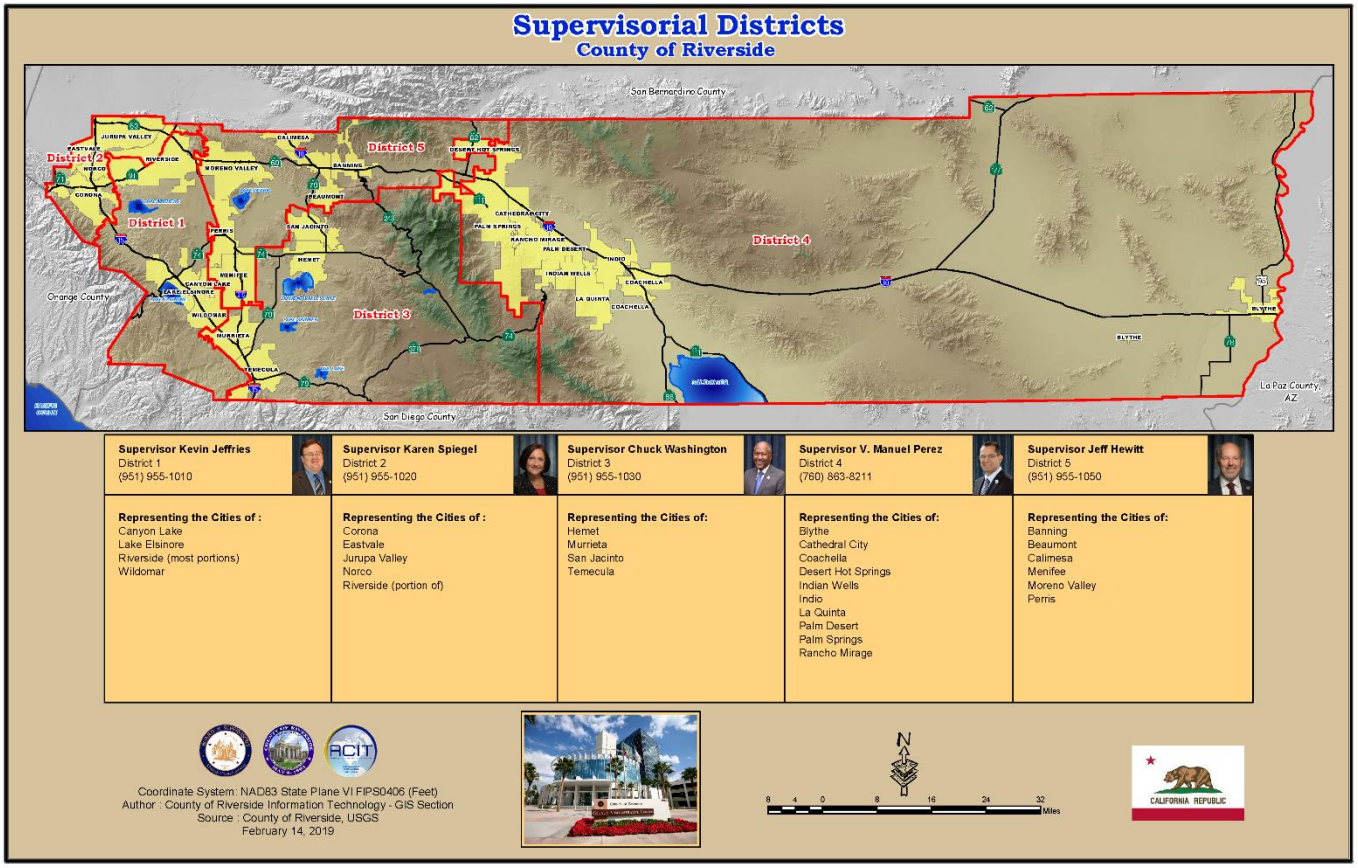
The Supervisorial Districts were also categorized based on city. More than half of the cities in the sample represent District 1 (59.7%) and District 5 (52.8%), as illustrated in Figure 3.

Figure 3. Supervisorial District



Note: *n* = 1,804,439.

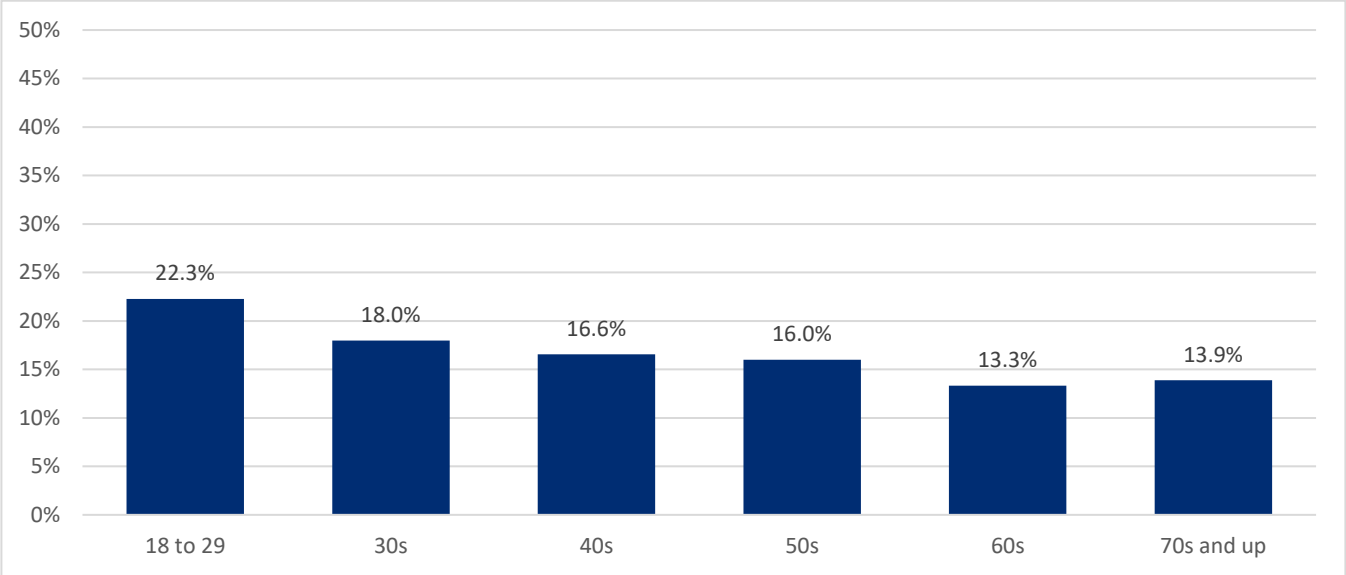
The supervisorial districts at the time of the data collection were as illustrated in the map below:



Age

Residents ranged in age from 18 to 98; the median age of residents was 45 while the average was 47. Thanks to the weighting, the age groups now accurately reflect the age distribution in Riverside County as a whole, as illustrated in Figure 4 below.

Figure 4. Age (Imputed) Categories

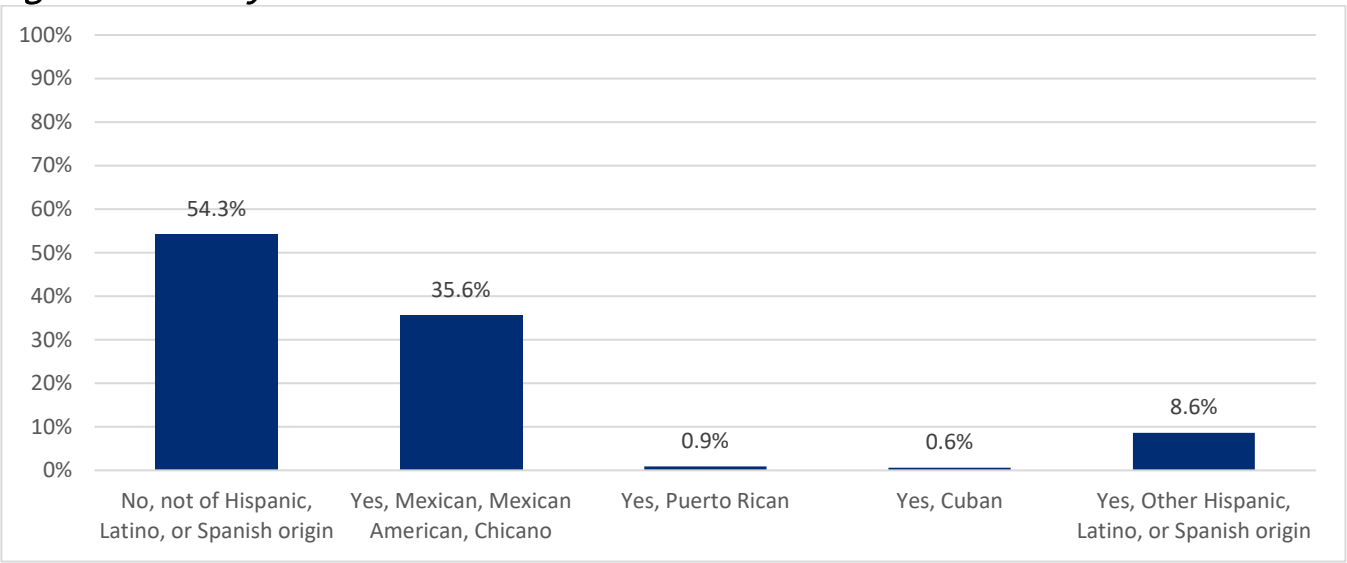


Note: *n* = 1,823,445.

Ethnicity

Slightly less than half of local residents identify as Hispanic/Latino, as illustrated in Figure 5.

Figure 5. Ethnicity



Note: *n* = 1,765,108.

Those who reported another ethnicity (8.6%) were asked to specify the details in an open-ended format.

"Other" ethnicities provided by residents describe origins from all over the world. These responses were grouped into themes post-data-collection. The most common themes were **European/Spanish** (e.g., "Greece", "Portugal") and **Central American** (e.g., "Guatemala", "Columbia").

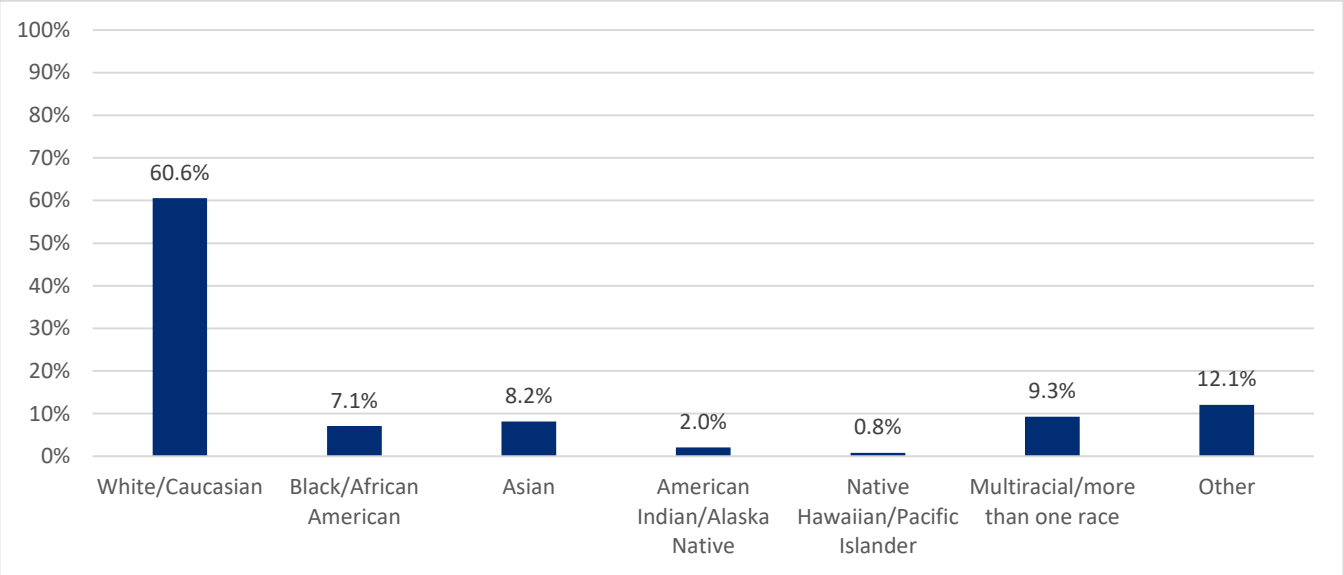
Less common themes included:

- South American
- Hispanic/Mexican
- Caucasian/White
- Asian
- Miscellaneous (e.g., "Egyptian", "Jewish")

Race

When measuring race per the Census Bureau (that is, where Hispanic/Latino is an ethnicity and not a race), the majority of residents (60.6%) identified as White/Caucasian. See Figure 6 below for additional details.

Figure 6. Race



Note: *n* = 1,698,172.

Those who reported "other" race (12.1%) were asked to specify the details in an open-ended format.

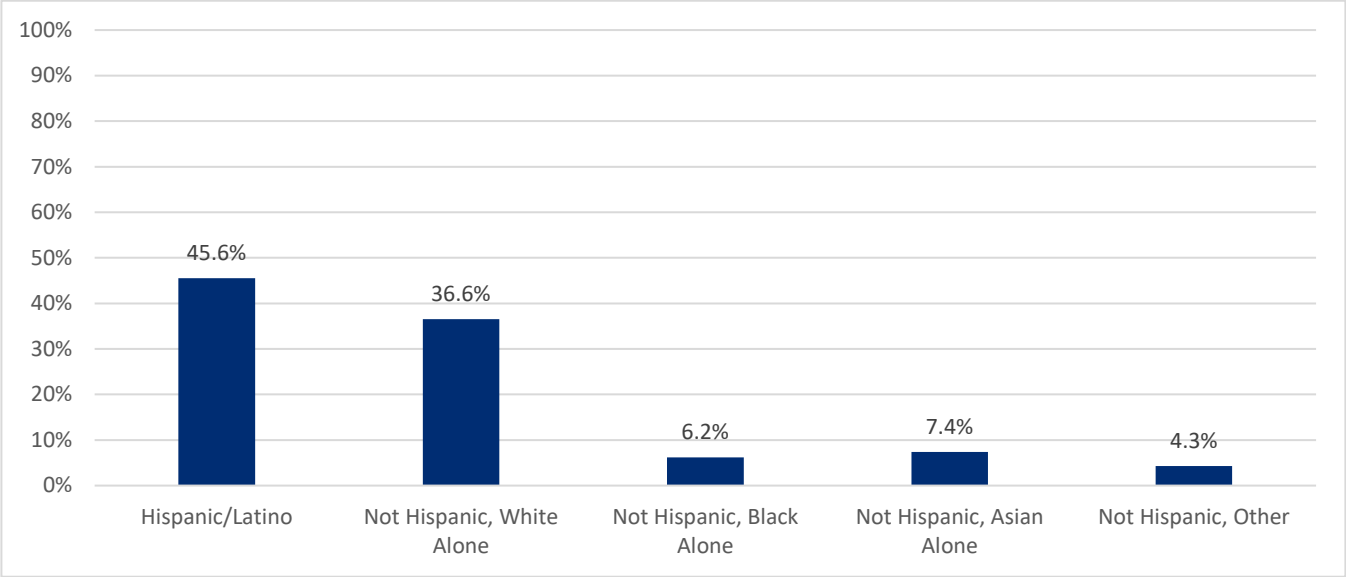
These responses were grouped into themes post-data-collection. The most common theme, by far, was **Mexican/Mexican American/Chicano**—more than a third of the "other" responses fell into this category. Other common themes included **Latino/Latin/Latinx** and **Hispanic**.

Less commonly reported racial themes included the following:

- European (e.g., "Italian," "Irish," "German")
- Other Hispanic (e.g., "Spanish," "Latin American," "Central American")
- Middle Eastern (e.g., "Egyptian," "Afghan," "Iranian/Persian")

Race was also crossed with ethnicity to provide clarity on the number of people identifying as Hispanic (e.g., when asked about race, respondents may choose "other" since Hispanic is not an option). As illustrated in Figure 7 below, when combining race with ethnicity, nearly half of residents are Hispanic/Latino (45.6%), while the second most common race/ethnicity is non-Hispanic, White alone (36.6%).

Figure 7. Race by Ethnicity



Note: *n* = 1,823,445.

Gender Identity

Two questions were utilized to measure gender identity, per best practices established in the field of survey research.[5] Firstly, residents were asked, "What sex were you assigned at birth, on your original birth certificate?" As illustrated in Table 9, post-weighting, sex is nearly evenly divided.

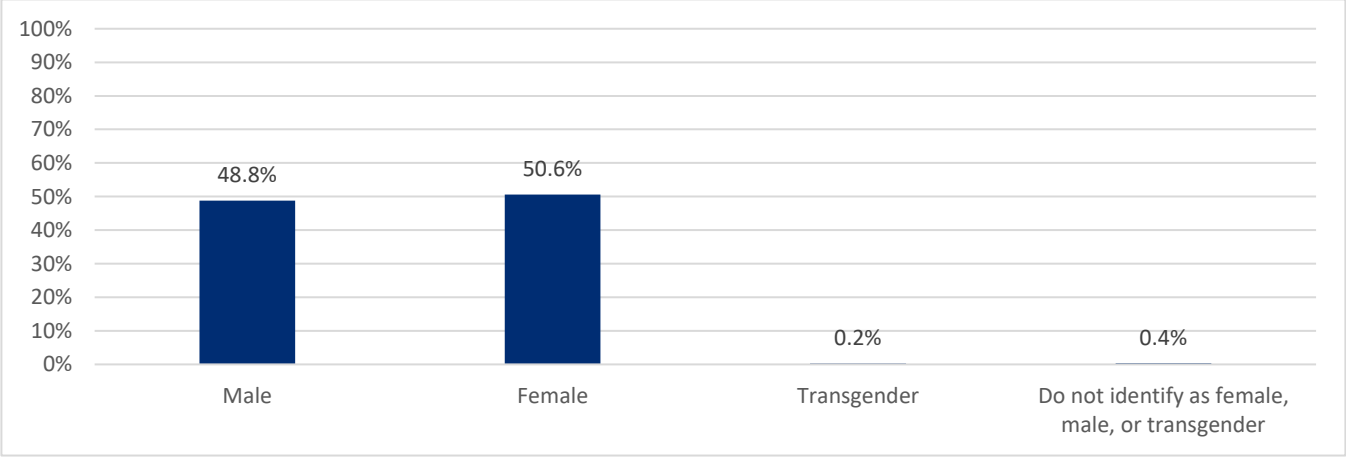
Table 9. Sex Assigned at Birth

Sex Assigned at Birth	Study Sample
Male	49.5%
Female	50.6%
Total	**100.0%**

Note: *n* = 1,794,655.

Next, residents were asked about their current gender identity: "How do you describe yourself?" Residents could indicate male, female, transgender, or "do not identify as female, male, or transgender." Male and female were still approximately evenly divided; however, some identified as transgender (0.2%) or did not identify as female, male, or transgender (0.4%), as illustrated in Figure 8 below. While the latter two categories are relatively small percentages, these equate to 4,165 people who were transgender and another 6,636 people who did not identify as female, male, or transgender.

Figure 8. Gender Identity



Note: *n* = 1,791,125.

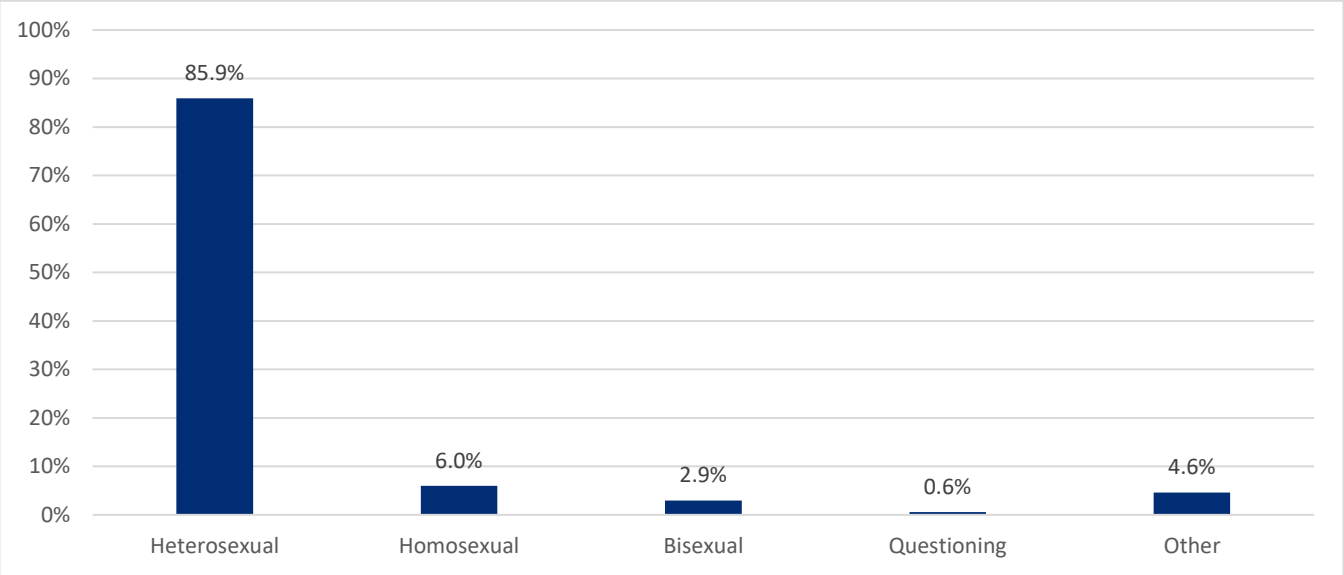
A total of 1.0% or 18,283 residents identified with a gender that does not match their birth certificate (e.g., assigned male at birth but identify as a female now, etc.).

[5] Williams Institute (2009). Best practices for asking questions about sexual orientation on surveys (SMART). Available online at https://williamsinstitute.law.ucla.edu/publications/smart-so-survey/

Sexual Orientation

To measure sexual orientation, participants were asked, "Do you consider yourself to be…" Results showed that the majority of residents (85.9%) identify as heterosexual, as illustrated in Figure 9 below.

Figure 9. Sexual Orientation



Note: *n* = 1,699,634.

Those who reported "another sexual orientation" (4.6%) were asked to specify the details in an open-ended format.

These responses were grouped into themes post-data-collection. The most common themes were **none/not applicable** (e.g., "No," "N/A," "None"), followed by **normal** (e.g., "normal," "ordinary"), **female** (e.g., "feminine," "female," "feminino"), **straight** (e.g., "straight," "straight/family man," "straight/regular"), and **male** (e.g., "masculine," "male," "masculino").

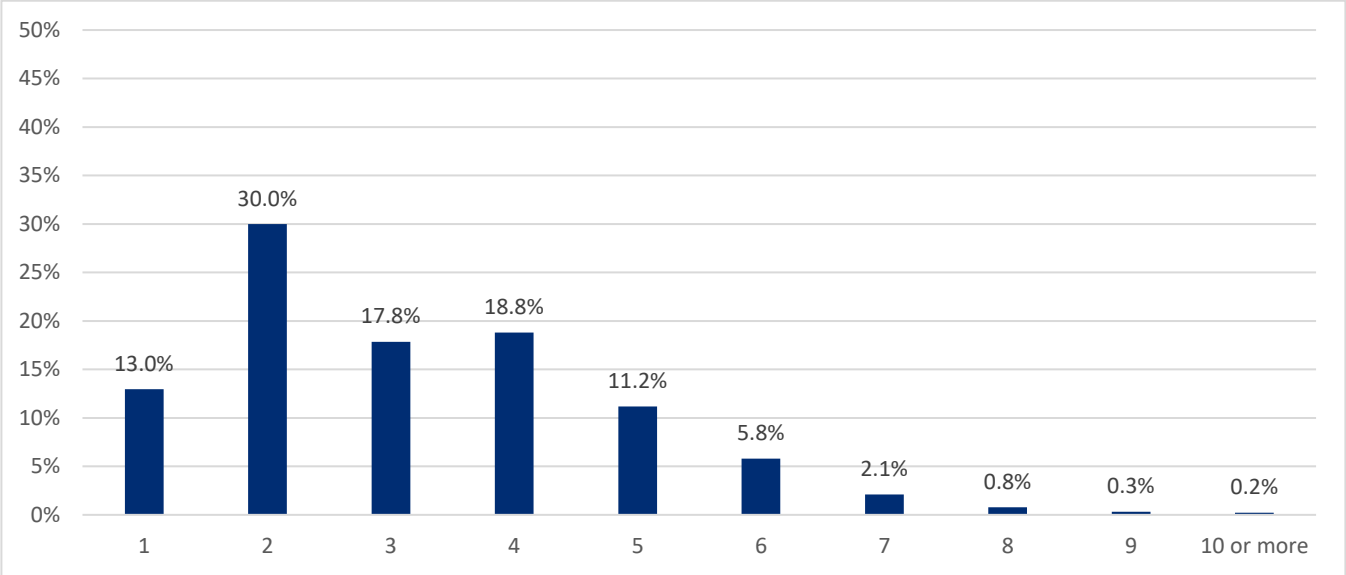
Less commonly reported sexual orientation themes include:

- No
- Decline to respond
- Me/myself
- Asexual
- Pansexual
- Human
- Queer

Household Size

The median household size for Riverside County was two people. As illustrated in the figure below, residents typically reported a household size of two people (30.0%), three people (17.8%), or four people (18.8%). See Figure 10 below for additional details.

Figure 10. Household Size

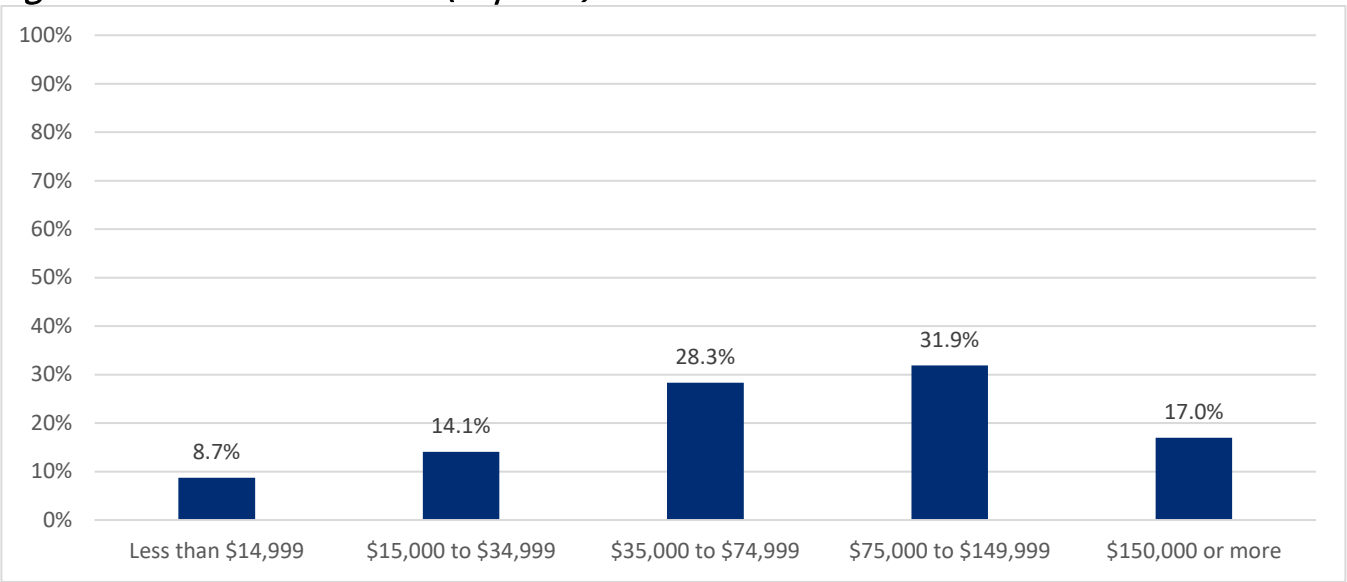


Note: *n* = 1,790,315.

Income and Poverty

Residents were asked, "Last year, what was your household income from all sources before taxes?" The household median income was $72,000, while the average household income was $93,421. As illustrated in Figure 11 below, about a third (31.9%) of households have an annual income of $75,000 to $149,999.

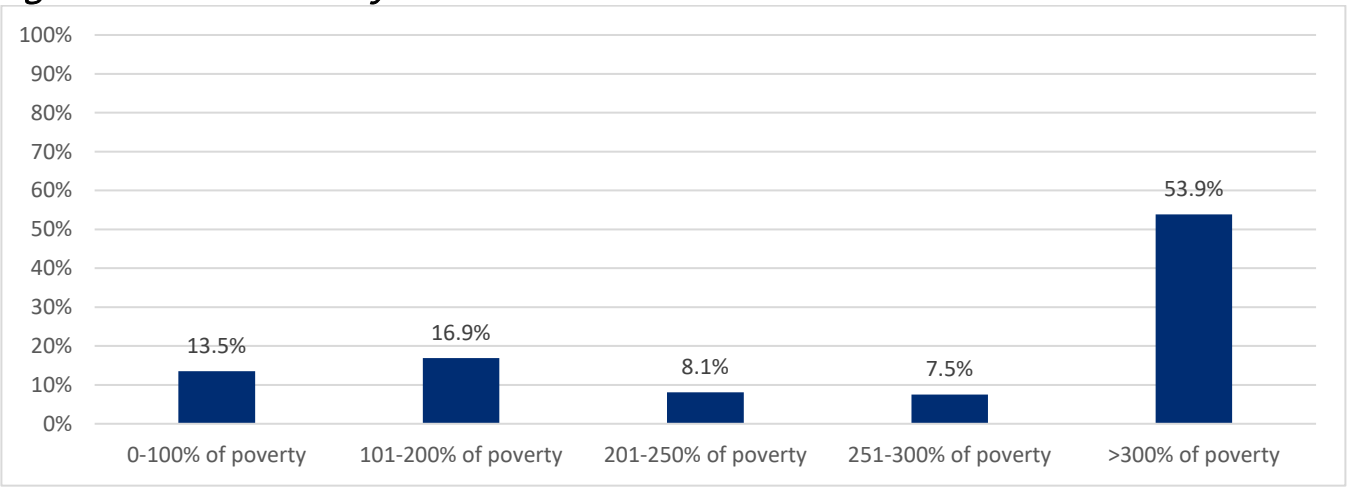
Figure 11. Household Income (Imputed)



Note: *n* = 1,823,445.

Using household income and the number of people within the household, the Federal Poverty Level (FPL) was calculated using the Department of Health and Human Service's guidelines for poverty in 2021. As illustrated in Figure 12 below, 13.5% of Riverside County adults are living below the poverty line, while another 16.9% are also very poor, living below 200% of the poverty line.

Figure 12. Federal Poverty Level

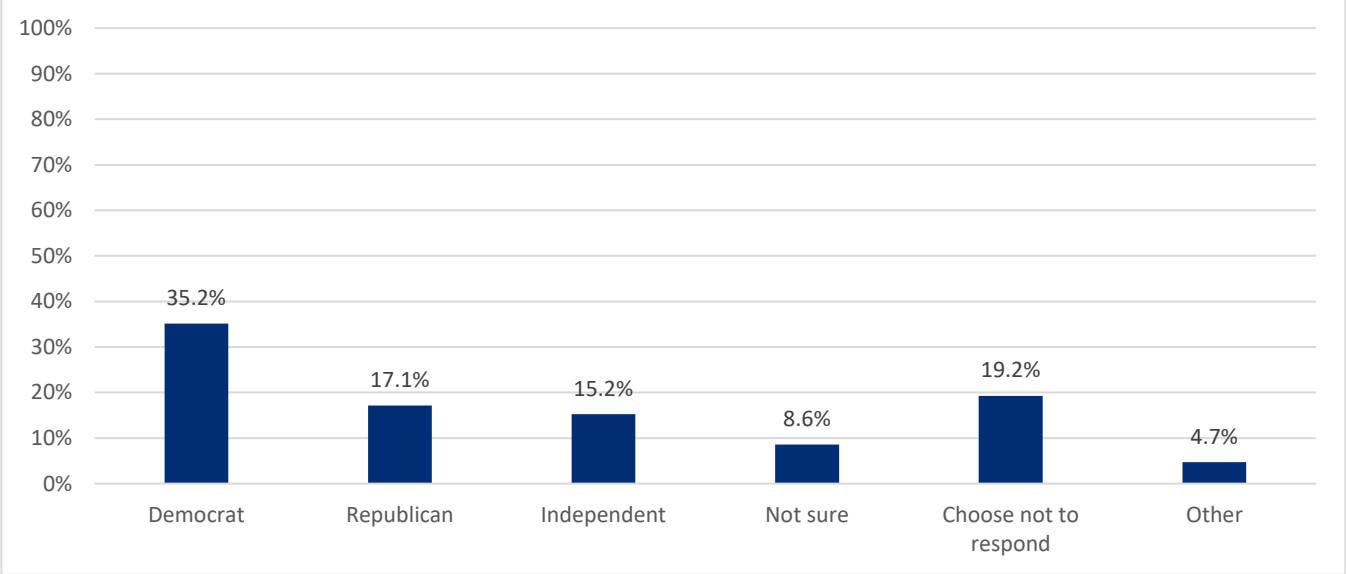


Note: *n* = 1,394,794.

Political Affiliation

As a final demographic question, residents were asked, "Generally speaking, do you think of yourself as a…?" and could then select from a range of options. About a third of residents identified as Democrat (35.2%), while others chose not to respond (19.2%), identified as Republican (17.1%), or identified as Independent (15.2%). See Figure 13 below for additional details.

Figure 13. Political Affiliation



Note: *n* = 1,774,426.

Those who reported an "other" political affiliation (4.7%) were asked to specify the details in an open-ended format. These responses were grouped into themes post-data-collection. The most common theme, by far, was **no affiliation** (e.g., "neutral", "no affiliation", "non-partisan"), followed by **it depends** (e.g., "it depends on the issue", "vote for the best candidate", and "I align with my beliefs and morals"), **Libertarian**, and **Conservative**.

Less commonly reported political themes included:

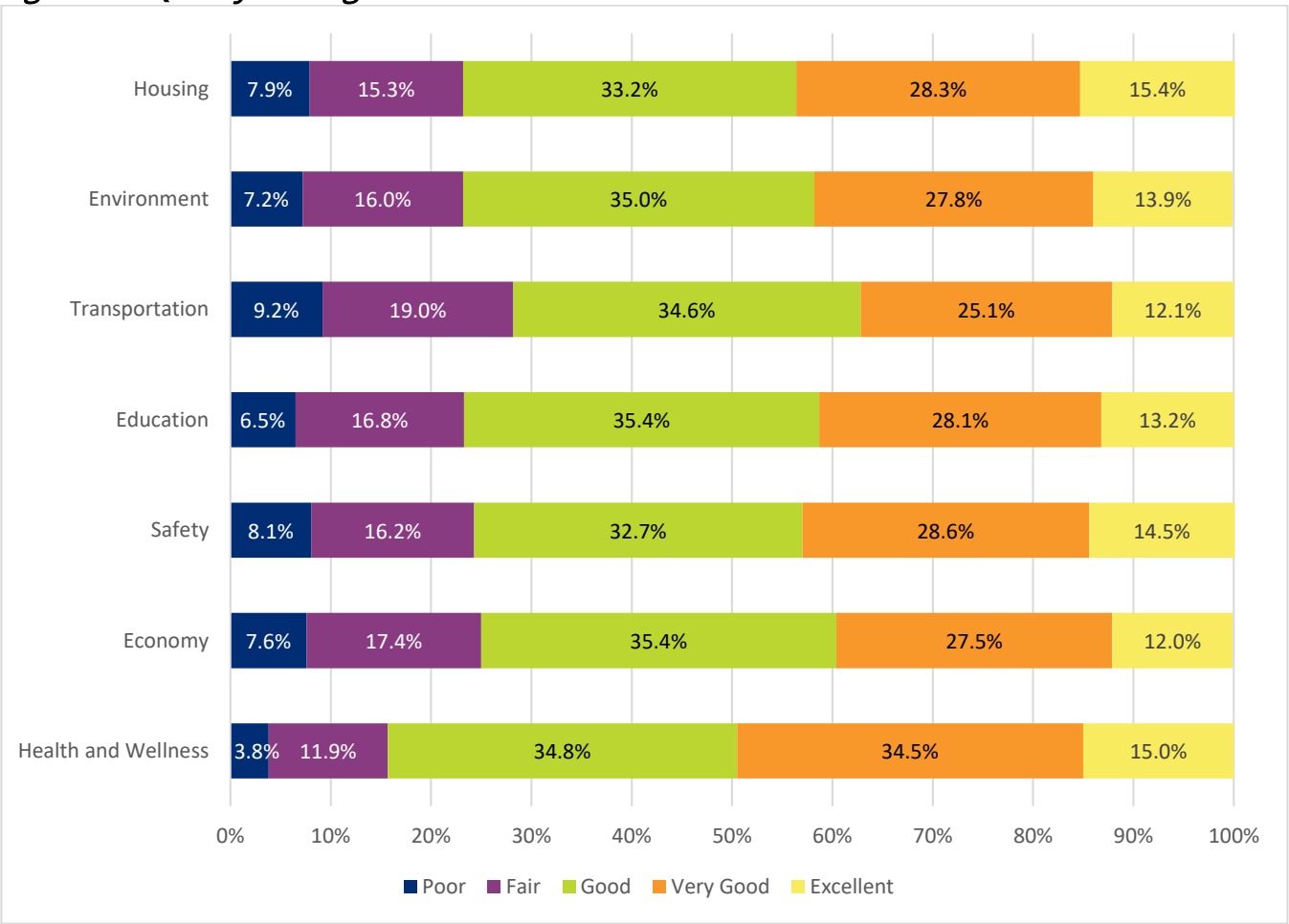
- Critical thinker/free thinker
- Democrat
- Moderate/in the middle
- Apolitical/don't vote
- Socialist
- Independent
- Progressive
- Liberal
- Green
- Religious
- Not a citizen/can't vote
- Patriot

An additional 33.5% of responses did not fit in the aforementioned categories, such as "used to be a democrat," "I support the U.S. Constitution," and "American."

Quality of Neighborhood

Participants were asked, "How would you describe the quality of _____ in your neighborhood?" and were asked to rate a series of statements on a 5-point scale from "excellent" to "poor." As illustrated in the figure below, transportation rated the lowest, with the highest percentage of "poor" ratings and the lowest percent of "excellent" ratings. In contrast, health/wellness was rated very highly—nearly half of participants (49.5%) rated health/wellness in their neighborhood as "excellent" or "very good".

Figure 14. Quality of Neighborhood



Note: Excludes those who indicated "don't know/not sure" on items; those were treated as missing. Health and wellness (*n* = 1,623,684), Economy (*n* = 1,671,248), Safety (*n* = 1,713,286), Education (*n* = 1,628,156), Transportation (*n* = 1,604,857), Environment (*n* = 1,691,539), Housing (*n* = 1,682,175).

Most Important Problems

Participants were asked, "Please select the five most important health problems that need to be fixed in your community". As illustrated in the table below, mental health problems were the most commonly selected important health problems, followed by obesity and air quality. At the other end of the spectrum, very few people believe that infant mortality is one of the five most important health problems in their community.

Table 10. Five Most Important Health Problems

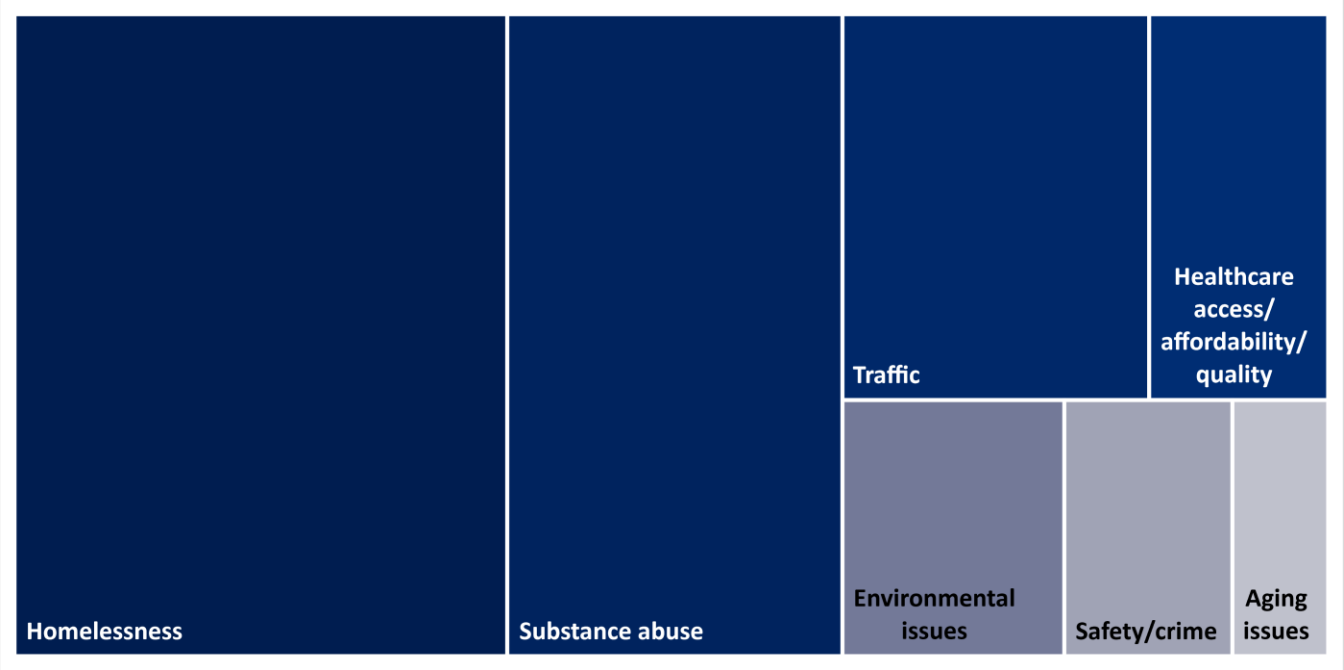
Issue	Weighted Percent	Population Estimate
Mental health problems	46.6%	787,257
Obesity/overweight	36.8%	622,581
Air quality	31.7%	536,501
Environmental pollution	29.8%	503,823
Not having health insurance	27.8%	470,008
Smoking, vaping, tobacco use	27.6%	466,356
Delays in access to healthcare	26.3%	444,164
Shortage of health professionals	23.4%	396,187
Diabetes	23.3%	393,194
Insufficient physical activity	21.2%	357,720
Cancer	18.6%	314,623
Poor nutrition/diet	17.7%	299,582
High blood pressure	16.7%	282,115
Traffic injuries	16.2%	273,977
Not having a usual source of healthcare	15.1%	254,959
Cardiovascular disease	14.9%	252,541
Limited access to healthy foods	14.9%	251,947
Suicide	13.0%	220,294
Other	7.5%	126,401
Disabilities	6.0%	101,591
Poor dental hygiene	5.4%	91,106
Teen pregnancy	4.8%	80,356
Asthma	4.1%	69,733
Stroke	4.1%	69,911
Sexually transmitted diseases (STDs)	3.7%	62,575
Respiratory/lung disease	3.6%	61,410
Infant mortality	0.7%	11,858

Of the 7.5% of participants who selected "other," they were asked to specify. Some residents provided more than one answer. These responses were grouped into themes post-data-collection and are illustrated in Figure 15 below.

The most common theme was **homelessness** (e.g., "homeless need housing," "help the homeless"). The next most common theme was **substance abuse** (e.g., "drug use, including pot," "alcoholism, alcohol abuse"), followed by **traffic** (e.g., "traffic/congestion," "bad traffic"), **healthcare access/affordability/quality** (e.g., "poor quality healthcare providers," "no hospital nearby," "cost of healthcare"), and environmental issues (e.g., "environmental impact on health," "heat," "trash in streets."

Other less common themes include safety/crime and senior/aging issues.

Figure 15. "Other" Important Health Problems



Note: Question asked of all participants.

Participants were asked, “Please select the five most important social problems that need to be fixed in your community”. As illustrated in the table below, more than half of participants rated homelessness and high housing costs in the top five social problems that need to be fixed in their community.

Table 11. Five Most Important Social Problems

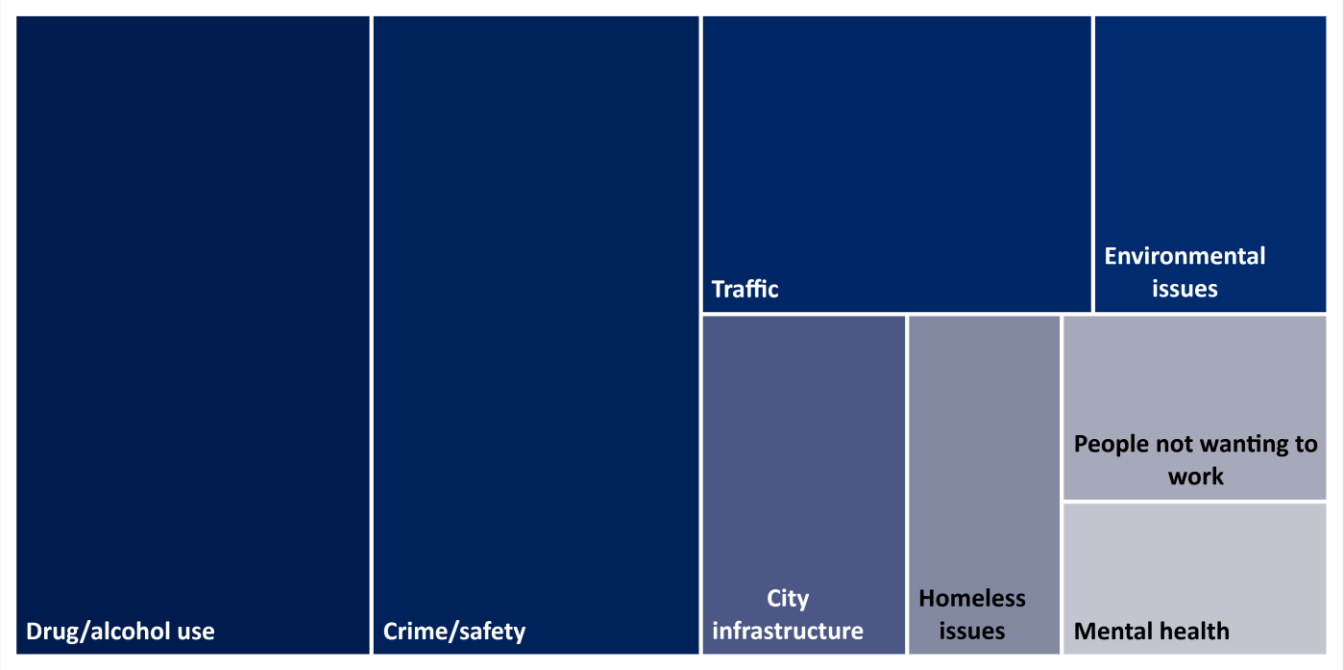
Issue	Weighted Percent	Population Estimate
Homelessness	62.4%	1,063,107
High housing costs	54.0%	920,181
Climate change	30.6%	520,811
Poverty	25.9%	442,225
Property crime	25.1%	427,322
Unemployment/underemployment	24.9%	423,978
Racism	22.7%	387,372
Gun violence	20.4%	347,056
Violent crime	16.3%	278,114
Child abuse	16.1%	274,493
Domestic violence	16.1%	274,889
Low walkability/bikeability	14.7%	251,236
Public transportation	14.7%	250,007
Traffic injuries	14.2%	242,728
Poor student-teacher ratios	12.2%	208,737
Poor educational attainment	10.0%	170,863
Marijuana growing (illegal)	9.6%	163,027
Low English literacy	9.5%	162,667
Low college readiness	9.2%	156,444
Rape/sexual assault	9.1%	154,815
Police brutality	8.2%	140,528
Other	7.4%	126,083
Low reading proficiency	7.1%	121,318
Poor high school graduation rates	6.0%	101,497
Low school attendance	4.1%	70,217
Poor school dropout rates	3.0%	50,571

Of the 7.4% of participants who selected "other", they were asked to specify. Some residents provided more than one answer. These responses were grouped into themes post-data-collection and are illustrated in Figure 16 below.

The most common themes were **drug/alcohol use** (e.g., "drug addiction," "alcohol abuse," "marijuana use") and crime/safety (e.g., "theft," "need more police," "gang violence"). The next most common theme was **traffic** (e.g., "traffic congestion," "bad traffic"), followed by **environmental issues** (e.g., "pollution," "air quality"), and **city infrastructure** (e.g., "need sidewalks," "fix roads," "lack of high-speed internet").

Other less common themes include homeless issues, people not wanting to work, and mental health.

Figure 16. "Other" Important Social Problems

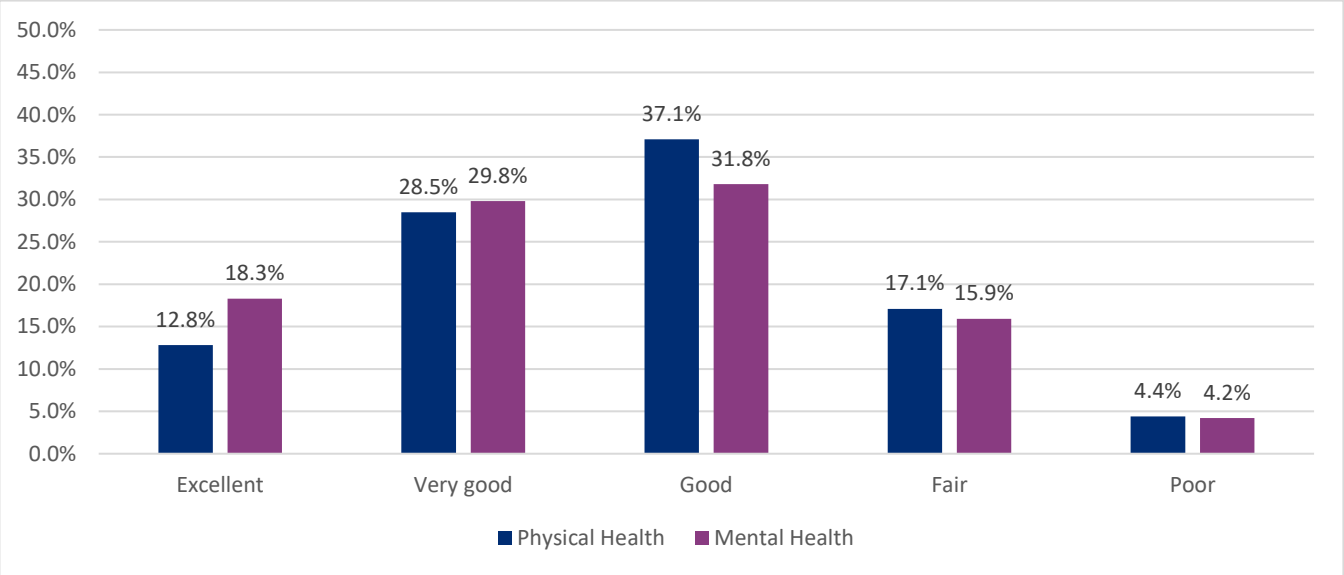


Note: Question asked of all participants.

Health Status

Participants were asked to rate their physical and mental health on a scale from “excellent” to “poor”. As illustrated in the figure below, most participants rated their health as “good” or better. Overall, mental health appears to be slightly better than physical health.

Figure 17. Health Status



Note: Physical health *n* = 1,790,239. Mental health *n* = 1,781,227.

Adverse Childhood Experiences

Adverse childhood experiences (ACEs) are potentially traumatic events occurring during childhood, including abuse (emotional, physical, or sexual), neglect (emotional or physical), and household instability (witnessing violence against a parent, substance abuse in household, mental illness in household, parental separation or divorce, or incarcerated household member).[6]

Children who are exposed to ACEs experience long-term effects that are detrimental to their quality of life as adults. For example, research has shown that ACEs are linked to risky health behaviors, chronic health conditions, low life potential, and early death.[7] As the number of ACEs a child experiences increase, so does the risk for these serious outcomes.

There are typically 10 ACEs; however, for this survey, HARC only measured four ACEs, all within the "household instability" category. Because of the methods of this survey (i.e., surveying the parents rather than the child), asking questions about child abuse or neglect is unlikely to yield solid information—that is, the parents may be unaware of the abuse/neglect or inclined not to disclose it.

Participants were asked whether they have children under the age of 18; 35.1% had children (approximately 625,573 people). These participants were then asked the four ACEs questions. Most children (63.4%) have not experienced any of these four ACEs. At the other end of the spectrum, 1.3% of children—more than 7,000 children—have experienced all four ACEs. As illustrated in the table below, the most common ACE is divorce followed closely by mental illness.

Table 12. Adverse Childhood Experiences

ACEs	Weighted Percent	Population Estimate
Child's parents are divorced or separated	19.8%	119,969
During child's lifetime, a member of the household has been depressed, mentally ill, or attempted suicide	18.3%	108,235
During child's lifetime, a member of the household has been a problem drinker or used street drugs	8.1%	49,424
During child's lifetime, a member of the household has been to jail/prison	5.3%	32,524

[6] About Adverse Childhood Experiences. (2019). Centers for Disease Control and Prevention. https://www.cdc.gov/violenceprevention/childabuseandneglect/acestudy/aboutace.html
[7] Ibid.

CONCLUSION

This report provides information to inform future efforts of RUHS – Public Health and others in community health improvement.

These results will be integrated, along with other data, into RUHS – Public Health's community health assessment (CHA), which will support RUHS – Public Health's reaccreditation efforts.

APPENDICES

Appendices begin on the following pages.

Appendix A: Artist Bios

This report represents the data collected throughout the study and is also supplemented by artwork by Riverside County residents to illustrate the themes. The artwork in this report is created exclusively for Riverside University Health System – Public Health by two local artists: Consuelo Marquez and Darren Olivares.

Consuelo Marquez

Consuelo Marquez (she/her) is a Mexican-American artist born and raised in the Eastern Coachella Valley. With themes such as environmental justice, public health, and the world around her, she creates art that shows how colorful and diverse her communities are through a blend of realistic and surrealist styles.

Consuelo's artwork is featured in this report on pages 8, 12, 17, 38, 66, 76, and 80.

To see more of Consuelo's work, please visit her personal Instagram at:
https://instagram.com/risingtraaash?utm_medium=copy_link
Or visit the Instagram of the CEMPAZUCHITL Zine, an art zine:
https://instagram.com/cempa_zine?utm_medium=copy_link

Darren Olivares

Darren Olivares (he/him) is a freelance multimedia artist who lives in Riverside, CA, with his partner and four cats. His art is inspired by expressions of self-discovery, vulnerability, and strength that exist in the lived experiences of his peers. In Riverside, Darren engages in community outreach and fellowship with LGBTQ and faith collectives to inform his art that highlights forms & color to emphasize realities that are harsh, soft, in-between, and outside of ourselves. Darren's artwork is featured in this report on pages 45, 53, 69, and 73.

To see more of Darren's work, please visit: https://darrenverse.wixsite.com/darrenolivares
To contact Darren, please email him at: darrenverse@gmail.com

Appendix B: English Version of Survey

1. Have you ever tested positive for COVID-19?
   - ☐ Yes (**Skip to question 2)**
   - ☐ No (**Skip to question 6)**

2. How serious was it when you tested positive for COVID-19?
   - ☐ Not at all serious
   - ☐ A little
   - ☐ Moderately
   - ☐ Very serious

3. Did you have an overnight stay in a hospital for suspected or diagnosed COVID-19?[i]
   - ☐ Yes
   - ☐ No **(skip to question 5)**

4. If yes, were you put into the ICU (intensive care unit) because of suspected or diagnosed COVID-19?
   - ☐ Yes
   - ☐ No

5. If you know, or believe, that you had COVID-19: have you recovered to your usual state of health?[ii]
   - ☐ No
   - ☐ Yes: # of days it took to recover _____

6. How serious do you think it would be if you tested positive for COVID-19?

   Select one response.
   - ☐ Not at all serious
   - ☐ A little
   - ☐ Moderately
   - ☐ Very serious

7. In your opinion, how much would the COVID-19 vaccine protect you against getting COVID-19?[iii]
   Select one response.
   - ☐ Not at all
   - ☐ A little
   - ☐ Moderately
   - ☐ Very much

8. Have you experienced any COVID-19 vaccine requirements? *Select all that apply.*
   - ☐ Yes, there is a vaccine requirement at my work
   - ☐ Yes, there is a vaccine requirement at my school
   - ☐ Yes, family has required me to be vaccinated to visit them
   - ☐ Yes, friends have required me to be vaccinated to visit them
   - ☐ Yes, other (please specify): _____
   - ☐ No, I have not experienced any vaccine requirements **(skip to #10)**

9. If yes to any of the options in #8, how (if at all) did this/these requirement(s) change your behavior?
   _____

10. Did COVID-19 variants (like the Delta variant) change your mind about getting a COVID-19 vaccine?
    - ☐ Variants made me want the vaccine *more*
    - ☐ Variants made me want the vaccine *less*
    - ☐ Variants *didn't change* how I felt about the vaccine

11. Have you had the COVID-19 vaccine?
    - ☐ Yes, I'm fully vaccinated **(skip to 12)**
    - ☐ Yes, but I'm not fully vaccinated **(skip to 12)**
    - ☐ No, but I plan on getting vaccinated **(skip to 16)**
    - ☐ No, and I don't plan on getting vaccinated **(skip to 16)**

12. Why did you choose to get vaccinated?

    _____

    _____

13. What vaccine did you receive?
    - ☐ I don't know
    - ☐ Pfizer-BioNTech
    - ☐ Moderna
    - ☐ Johnson & Johnson/Janssen
    - ☐ Other (please specify)

      _____

14. How likely are you to recommend the vaccine to someone else?
    - ☐ Extremely Likely
    - ☐ Likely
    - ☐ Neutral
    - ☐ Unlikely
    - ☐ Extremely unlikely

15. Did you have any side-effects or symptoms after receiving the COVID-19 vaccination?
    - ☐ No
    - ☐ I don't know
    - ☐ Yes (please describe your side effects and/or symptoms) _____

16. What is/are the main reason(s) you have not taken the vaccine? *(Select all that apply)* **(After answering this question, skip to 17)**
    - ☐ I am waiting for FDA approval
    - ☐ I have concerns about it being a new type of vaccine (mRNA vaccine)
    - ☐ I do not have time or time off work
    - ☐ It does not affect me
    - ☐ I am worried about the side effects or I have allergy concerns
    - ☐ I want to wait longer and see what reactions others have
    - ☐ I do not have health insurance
    - ☐ I do not trust the government
    - ☐ My spiritual or religious beliefs stop me from wanting the vaccine
    - ☐ I am healthy, so I do not need the vaccine
    - ☐ I heard it can affect my sexual health or fertility
    - ☐ I do not know where or how to get the vaccine
    - ☐ I am afraid of needles
    - ☐ I do not have a car or bus I can take to get the vaccine
    - ☐ I have a disability that worries me for getting the vaccine
    - ☐ Other_____

      _____

17. How confident are you that the COVID-19 vaccine is being distributed fairly?[iv] *Select one response.*
    - ☐ Very confident **(skip to 19)**
    - ☐ Somewhat confident **(skip to 19)**
    - ☐ Not too confident
    - ☐ Not at all confident
    - ☐ I don't know **(skip to 19)**

18. In your own words, how could the COVID-19 vaccine be distributed more fairly?

    _____

    _____

19. Please answer the following questions in your own words: The biggest fear I have about COVID-19 is...[v]

_____

_____

How has the COVID-19 pandemic impacted your personal daily life with regards to:[vi]	To a great extent	Somewhat	Very little	Not at all
20. Work/school participation				
21. Economic situation				
22. Physical health				
23. Mental health				
24. Social life or relationships				

25. COVID-19 has also affected how people feel and act. Which of the following have you experienced due to COVID-19?[vii] *Please select all that apply.*

- ☐ Anxiety
- ☐ Boredom
- ☐ Conflict in the home
- ☐ Confusion
- ☐ Decreased exercise
- ☐ Decreased sexual activity
- ☐ Depression
- ☐ Fear of getting sick
- ☐ Frustration
- ☐ Increased alcohol or other substance use
- ☐ Increased eating
- ☐ Increased sexual activity
- ☐ Loneliness
- ☐ Loss of hope
- ☐ Trouble sleeping
- ☐ Worry about friends and family
- ☐ None of the above
- ☐ Other (please specify)

  _____

  _____

People have made many types of changes to their lifestyle or daily activities because of COVID-19. Please rate each of the following activities:[viii]	I did this at the beginning of the pandemic	I am doing this now	I will keep doing this throughout my life	I didn't do this
26. Bought extra medicine or medical supplies (e.g., thermometer)				
27. Bought food supplies on a larger scale				
28. Bought cleaning supplies on a larger scale				
29. Bought other household supplies (e.g., toilet paper) on a larger scale				
30. Had groceries or other supplies delivered to my home				
31. Avoided or cancelled domestic travel				
32. Avoided or cancelled international travel				
33. Avoided visiting family members or friends even when I did not have symptoms of coronavirus				
34. Avoided going to the doctor or dentist for routine appointments or preventive care				
35. Worked from home				

36. Were there any other changes to your lifestyle or daily activities because of COVID-19 you'd like to share?

_____

_____

COVID-19 has impacted people's day-to-day life in many different ways. Have you experienced any of these difficulties due to COVID-19?[ix]	Yes, I did in 2020	Yes, this is a problem for me now	No, not a problem
37. Reduced wages or work hours			
38. Job loss			
39. Loss of savings or retirement funds			
40. Problems with housing			
41. Childcare issues			
42. Problems getting food			
43. Problems getting cleaning supplies or other household items			
44. Problems getting medications			
45. Transportation issues			
46. Problems accessing healthcare			

47. Were there any other ways COVID-19 impacted your day-to-day life that you'd like to share?

_____

_____

Upon receiving the COVID-19 vaccine (if you have/if choose to in the future), do you plan to stop…[x]	Yes, I plan to stop this after I am vaccinated	No, I plan to continue this until after the pandemic ends	No, I plan to continue this even after the pandemic	I have already stopped doing this	I do not do this	I don't plan on getting the vaccine
48. Social distancing (staying at home and avoiding others as much as possible)						
49. Wearing a face mask in public						
50. Doubling up on face masks						
51. Frequently washing or sanitizing your hands						

At any time in the last 12 months, did you DELAY getting _____ because of the coronavirus pandemic?[xi]	Yes	No
52. Medical care		
53. Mental healthcare		
54. Dental care		

At any time in the last 12 months, did you need _____ for something other than coronavirus, but DID NOT GET IT because of the coronavirus pandemic?[xii]	Yes	No
55. Medical care		
56. Mental healthcare		
57. Dental care		

Please rate how much you agree with the following statements:[xiii]	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
58. People of color (e.g., African Americans, Latinos) are facing more of the health impact of coronavirus (COVID-19) than whites.					
59. People of color (e.g., African Americans, Latinos) are facing more of the financial/economic impact of coronavirus (COVID-19) than whites.					

60. Where do you usually get information on COVID-19?

_____

61. What people or groups do you trust to give you accurate COVID-19 information? (e.g., the news, the government, religious leaders, family members, etc.)

_____

62. How well do you trust information from members of your own community?
- ☐ Extremely
- ☐ Very
- ☐ Moderately
- ☐ Slightly
- ☐ Not at all

How would you describe the quality of the _____ in your neighborhood?[xiv]	Excellent	Very good	Good	Fair	Poor	Don't know or unsure
63. Health and wellness						
64. Economy						
65. Safety						
66. Education						
67. Transportation						
68. Environment						
69. Housing						

70. Please select the **five** most important health problems that need to be fixed in your community.[xv]

- ☐ A shortage of health professionals
- ☐ Air quality
- ☐ Asthma
- ☐ Cancer
- ☐ Cardiovascular disease (heart attacks, etc.)
- ☐ Delays in access to health care
- ☐ Diabetes
- ☐ Disabilities (hearing loss, blindness, etc.)
- ☐ Environmental pollution
- ☐ High blood pressure
- ☐ Infant mortality
- ☐ Insufficient physical activity
- ☐ Limited access to healthy foods
- ☐ Mental health problems (anxiety, depression, etc.)
- ☐ Not having a usual source of health care
- ☐ Not having health insurance coverage
- ☐ Obesity/overweight
- ☐ Poor dental hygiene
- ☐ Poor nutrition/diet
- ☐ Respiratory/lung disease
- ☐ Sexually transmitted diseases (STDs)
- ☐ Smoking/tobacco use/vaping/e-cigarette access & use
- ☐ Stroke
- ☐ Suicide
- ☐ Teen pregnancy
- ☐ Traffic injuries
- ☐ Other (please specify) _____ _____

71. Please select the **five** most important social problems that need to be fixed in your community.[xvi]

- ☐ Child abuse
- ☐ Climate change
- ☐ Domestic violence
- ☐ Gun violence
- ☐ High housing costs (purchase or rental)
- ☐ Homelessness
- ☐ Low college readiness
- ☐ Low English literacy
- ☐ Low reading proficiency
- ☐ Low school attendance
- ☐ Low walkability or bikeability
- ☐ Marijuana growing (illegal)
- ☐ Police brutality
- ☐ Poor educational attainment
- ☐ Poor high school graduation rates
- ☐ Poor school drop-out rates
- ☐ Poor student-teacher ratios
- ☐ Poverty
- ☐ Property crime
- ☐ Public transportation (quantity or quality)
- ☐ Racism
- ☐ Rape/sexual assault
- ☐ Traffic injuries
- ☐ Unemployment/underemployment
- ☐ Violent crime
- ☐ Other (please specify) _____ _____

Would you say, in general, that your _____ is excellent, good, very good, fair, or poor?	Excellent	Very good	Good	Fair	Poor
72. Physical health					
73. Mental health					

74. Do you have any children under the age of 18?

- ☐ Yes
- ☐ No **(skip to next page, #79)**

	Yes	No	Not sure
75. Are the child's or children's parents divorced or separated?			
76. During the child's or children's lifetime, has anyone in the household been to jail or prison?			
77. During the child's or children's lifetime, has anyone in the household been a problem drinker or alcoholic, or used street drugs?			
78. During the child's or children's lifetime, has anyone in the household been depressed, mentally ill, or attempted suicide?			

79. Have you accessed any of these resources during the pandemic? *Please check all that apply.*

- ☐ Food bank/food pantry/free delivered meals
- ☐ Prescriptions delivered
- ☐ Stimulus check received
- ☐ Rent deferral or forgiveness
- ☐ Utility bill discounts
- ☐ Unemployment insurance
- ☐ I did not access any of these resources
- ☐ Other: Please Specify: _____

The department of Public Health within Riverside County has worked to reduce the impact of COVID-19 throughout the community. Please rate whether you were aware of Public Health's following activities:	Knew about it	Knew and used it	Unaware and didn't need it	Unaware and would have liked to know about this
80. Mask distribution				
81. Food assistance/Great Plates Program				
82. Childcare assistance				
83. Educational information and videos				
84. Opened vaccine sites				
85. Opened testing sites				
86. Provided data to the community				
87. Gave information to support small business				

88. In your own words, what could Riverside County Public Health have done differently to reduce the impact of COVID-19?

_____

_____

89. How much do you trust local government such as County Public Health departments?

- ☐ A lot
- ☐ A moderate amount
- ☐ A little
- ☐ None at all

90. Are you of Hispanic, Latino, or Spanish origin?

- ☐ No, not of Hispanic, Latino, or Spanish origin
- ☐ Yes, Mexican, Mexican American, Chicano
- ☐ Yes, Puerto Rican
- ☐ Yes, Cuban
- ☐ Yes, Other Hispanic, Latino, or Spanish origin (specify): _____

91. Which one of these groups would you say best represents your race? For the purposes of this survey, Hispanic is not a race.

- ☐ White/Caucasian
- ☐ Black/African American
- ☐ Asian
- ☐ American Indian/Alaska Native
- ☐ Native Hawaiian/Pacific Islander
- ☐ Multiracial/more than one race
- ☐ Other (specify): _____

92. Last year, what was your household income from all sources before taxes? _____

93. How many people, including you, reside in your household? Please include adults and children.

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9
- ☐ 10 or more

94. What sex were you assigned at birth, on your original birth certificate?

- ☐ Male
- ☐ Female

95. How do you describe yourself? *Select one response.*

- ☐ Male
- ☐ Female
- ☐ Transgender
- ☐ Do not identify as female, male, or transgender

96. Do you consider yourself to be…

- ☐ Heterosexual
- ☐ Homosexual
- ☐ Bisexual
- ☐ Questioning
- ☐ Other (please specify) _____

97. Generally speaking, do you think of yourself as a _____?[xvii] *Select one response.*

- ☐ Democrat
- ☐ Republican
- ☐ Independent
- ☐ Not sure
- ☐ Choose not to respond
- ☐ Other (please specify) _____

98. What is your age, in years? _____

99. About how tall are you without shoes? Please answer in feet/inches. _____

100. How much do you weigh, in pounds, without shoes? _____

That concludes the survey!

Thank you so much for your time and responses. We truly appreciate it.

Appendix C: Weighting Methodology

This is a brief report on the weighting procedure and outcome for the HARC COVID mail survey, created by Brian Kriz, statistician. A total of 9,232 cases were provided in a .sav file. Missing data were imputed using a hotdeck method. Iterative proportional fitting was used to ensure marginal distributions for age, sex, race, ethnicity, and household income aligned. Weights were rescaled to the 2020 Census population estimates (1,823,505 residents of Riverside County).

Crosscheck coding

First, the statistician conducted a check to confirm all variable recodes used for weighting were properly recoded, with the exception of income (as this required subjective judgment by HARC staff). Codes were confirmed as accurate.

Missingness

Over 71% of cases were complete and just under a quarter had one missing variable. Less than 1% were missing all weighting information. Income is the most common missing variable, making up roughly 20% of cases. Imputation using hotdeck occurred in two stages: The first stage imputed all variables simultaneously, except income.

As income is likely heavily influenced by many of the other weighting variables, the statistician decided to impute this value within the race x ethnicity domain. This means that income hotdeck imputation took place within each level of race x ethnicity. This is an effort to ensure the distribution of the income variable remains correlated with race and ethnicity.

Imputation

Imputation was conducted in three steps: baseline, all variables except income, and final income alone. After the first round of imputation, the statistician recomputed the race and ethnicity variable to account for the imputation of these variables. Finally, the statistician ran a double-check to ensure the recategorization of the race and ethnicity variable was properly executed.

Weighting diagnostics

The data was weighted using an iterative proportional fitting (i.e., raking or rim weighting) algorithm. The weighting procedure converged. Below are diagnostics of the weights winsorized at the 0.01 and 0.99 level and not winsorized. The design effect is 1.98 in both cases, which is within a tolerable level. The ratio of min and max weights is also tolerable.

Because there is no decrease in the design effect after winsorizing, the statistician recommended staying with the non-winsorized set of weights. Using the winsorized weights would add bias with no variance reduction benefit.

Table 13. Comparison of Weighting Metrics with and without Winsorizing

Weight	Population Estimate	Min. Weight	Mean Weight	Median Weight	Max Weight	Ratio	Deff
Weight	1,823,505	46.33	197.52	135.63	987.61	21.32	1.92
Winsorized Weight	1,823,505	47.27	197.52	135.63	987.61	20.89	1.92

Check Targets and Weight

Finally, the statistician ran an analysis to examine the unweighted and weighted distribution in comparison to the targets. Unweighted, some distributions are off by as much as 17 percentage points. The largest difference was with young adults (underrepresented by 17 percentage points), Hispanics/Latinos (underrepresented by 15 percentage points), and White Non-Hispanics (over-represented by 16 percentage points). When weighted, we achieved the exact same distribution as the targets, as illustrated in the table below.

Table 14. Comparison of Weighted and Unweighted Estimates Against Weighting Targets

Variable/Category	Unweighted	Weighted	Target	Difference without Weight	Difference with Weight
Income					
Less than $14,999	6.9%	8.7%	8.7%	1.8	0
$15,000 to $34,999	17.2%	14.1%	14.1%	3.1	0
$35,000 to $74,999	29.3%	28.3%	28.3%	1	0
$75,000 to $149,999	31.4%	31.9%	31.9%	0.5	0
$150,000 or more	15.3%	17.0%	17.0%	1.7	0
Total	*100.00%*	*100.00%*	*100.00%*	*8.1*	*0*
Age					
18 to 29	5.2%	22.3%	22.3%	17.1	0
30s	11.0%	18.0%	18.0%	6.9	0
40s	14.8%	16.6%	16.6%	1.8	0
50s	18.0%	16.0%	16.0%	2	0
60s	23.6%	13.3%	13.3%	10.3	0
70s and up	27.4%	13.9%	13.9%	13.6	0
Total	*100.0%*	*100.0%*	*100.0%*	*51.7*	*0*

Variable/Category	Unweighted	Weighted	Target	Difference without Weight	Difference with Weight
Sex at Birth					
Male	37.7%	49.50%	49.5%	11.8	0
Female	62.3%	50.50%	50.5%	11.8	0
Total	*100.0%*	*100.00%*	*100.0%*	*23.6*	*0*
Race x Ethnicity					
Hispanic/Latino	30.2%	45.6%	45.6%	15.4	0
Not Hispanic, White Alone	52.6%	36.6%	36.6%	16.1	0
Not Hispanic, Black Alone	5.9%	6.2%	6.2%	0.4	0
Not Hispanic, Asian Alone	6.5%	7.4%	7.4%	0.8	0
Not Hispanic, Other	4.8%	4.3%	4.3%	0.5	0
Total	*100.0%*	*100.0%*	*100.0%*	*33.1*	*0*

Final Data Set

The final data set was provided back to HARC with original weights (recommended for use, used by HARC) as well as winsorized weights (not recommended for use, not used by HARC).

Appendix D: Survey References

[i] PhenX Toolkit. MESA COVID-19 Questionnaire. Recovery topic. https://www.phenxtoolkit.org/toolkit_content/PDF/MESA_COVID_19_Diagnosis.pdf . Note: HARC modified from original, "Have you ever had an overnight stay in a hospital for suspected or diagnoses COVID-19?"

[ii] PhenX Toolkit. MESA COVID-19 Questionnaire. Recovery topic. https://www.phenxtoolkit.org/toolkit_content/PDF/MESA_COVID_19_Diagnosis.pdf Note: HARC modified response option from "How long did take for you to recover? _____days"

[iii] Reiter, P. L., Pennell, M. L., & Katz, M. L. (2020). Acceptability of a COVID-19 vaccine among adults in the United States: How many people would get vaccinated?. Vaccine, 38(42), 6500–6507. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7440153/

[iv] KFF Health Tracking Poll/ KFF COVID-19 Vaccine Monitor https://files.kff.org/attachment/Topline-KFF-COVID-19-Vaccine-Monitor-December-2020.pdf Modified by HARC: Changed from "How confident are you that when a COVID-19 vaccine becomes available, it will be distributed in a way that is fair?"

[v] Pogue, K., Jensen, J. L., Stancil, C. K., Ferguson, D. G., Hughes, S. J., Mello, E. J., ... & Poole, B. D. (2020). Influences on attitudes regarding potential COVID-19 vaccination in the United States. Vaccines, 8(4), 582. https://www.mdpi.com/2076-393X/8/4/582/htm Note: Modified by HARC: changed question from, "Please answer the following questions in your own words: The biggest fear I have about a COVID-19 vaccine is..."

[vi] Phenx Toolkit. Telling our stories in the age of COVID-19. Overall impact topic. https://www.phenxtoolkit.org/toolkit_content/PDF/CU_TOSC_Impact.pdf

[vii] Reiter, P. L., Pennell, M. L., & Katz, M. L. (2020). Acceptability of a COVID-19 vaccine among adults in the United States: How many people would get vaccinated?. Vaccine, 38(42), 6500‑6507. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7440153/ Note: Modified by HARC: Added an "other" option to the responses.

[viii] Reiter, P. L., Pennell, M. L., & Katz, M. L. (2020). Acceptability of a COVID-19 vaccine among adults in the United States: How many people would get vaccinated?. Vaccine, 38(42), 6500‑6507. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7440153/

[ix] Reiter, P. L., Pennell, M. L., & Katz, M. L. (2020). Acceptability of a COVID-19 vaccine among adults in the United States: How many people would get vaccinated?. Vaccine, 38(42), 6500‑6507. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7440153/

[x] Axios/Ipsos panel survey found in "(SEAN) COVID-19 Survey Archive" https://covid-19.parc.us.com/client/index.html#/ Note: Modified by HARC: removed "each of the following at end of question" and modified response from "Social distancing, that is staying at home and avoiding others as much as possible"

[xi] Phenx Toolkit. COVID-19 Household Pulse Questionnaire. Risk Reduction Topic. https://www.phenxtoolkit.org/toolkit_content/PDF/Census_HPS_Health.pdf

[xii] Ibid.

[xiii] COVID-19 and the Experiences of Populations at Greater Risk: Description and Top-Line Summary Data https://www.rand.org/pubs/research_reports/RRA764-2.html - Question developed by RWJF (Robert Woods Johnson Foundation) and RAND.

[xiv] 2019 CHA San Bernardino County Community Vital Signs

[xv] Ibid. Note: HARC modified the options to be alphabetical. Also modified to select the top 5 rather than the top 7.

[xvi] Ibid. Note: HARC included "racism" as a social problem and modified the options to be alphabetical. From review of the listening sessions, "climate change", "police brutality", and "marijuana growing" were included.

[xvii] PhenX Toolkit - RAND American Life Panel Survey: Impacts of COVID-19