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Who has not been vaccinated, fully vaccinated, or boosted for COVID-19?

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ABSTRACT

We assessed COVID-19 vaccination coverage (≥1 dose, full vaccination, and booster vaccination) using a large, nationally representative survey of US households (December 29, 2021-January 10, 2022). Almost 1 in 6 adults have not been vaccinated or not been fully vaccinated, and almost one-half of fully vaccinated adults have not received a booster vaccine. All eligible individuals should receive the recommended number of vaccines to prevent further transmission of COVID-19.

INTRODUCTION

COVID-19 vaccines and booster doses have been authorized and recommended for use among adults in the United States since December 2020 and October 2021, respectively, yet many people remain unvaccinated, not fully vaccinated, or not boosted for COVID-19.1 For example, as of July 1, 2022, approximately 10% of adults had not received any dose of the COVID-19 vaccine, 23% of adults were not fully vaccinated, and 49% of fully vaccinated adults have not received a booster vaccine.2 This is concerning, especially for vulnerable and high-risk populations, such as certain sociodemographic groups, essential worker groups, people in some employment categories, people with disabilities and mental health disorders, people with food insecurity, people living in some residential structures, and households with children.3,4 The recent surge in cases and hospitalizations due to new variants of COVID-19 viruses underscores the importance of achieving high and equitable vaccination coverage for preventing further transmission of COVID-19 and protecting all individuals from COVID-19 infection and severe health outcomes.5

Previous studies have examined possible reasons for nonvaccination, which include concerns about safety and side effects, wanting to 'wait to see' if it is safe, and mistrust of vaccines or the government.6 However, most studies have utilized data prior to August 2021 and to our knowledge, none have assessed uptake of the booster dose by groups with elevated risk for COVID-19 infection.

This study assessed receipt of at least one dose of COVID-19 vaccine, full vaccination, as well as receipt of a booster vaccine, overall and by sociodemographic factors and select high risk groups using a large, nationally representative survey of US households. In addition, factors associated with each vaccination status were examined. Understanding gaps and disparities in vaccination coverage is fundamental to reducing COVID-19-related morbidity and mortality, and preventing further transmission of SARS-CoV-2 variants.

METHODS

Data were collected from December 29, 2021 to January 10, 2022 in the Household Pulse Survey (HPS) (sample size = 74,995, response rate = 7.2%).7 The survey design of the HPS has been described

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RESULTS

For all categories of vaccination, coverage was lowest for younger age groups (Table 1, Fig 1). For example, one in 5 adults ages 18-29 years had not received any COVID-19 vaccines and almost two thirds of fully vaccinated adults ages 18-29 years had not received a booster vaccine. NH Black adults were also more likely to not have received the booster vaccination than NH White adults (adjusted prevalence ratio = 1.22, 95% confidence interval = 1.16,1.29).

Adults with lower educational status and income levels were also more likely to have lower vaccination coverage across all vaccination groups. Adults without health insurance and those with a previous COVID-19 infection were less likely to be vaccinated, fully vaccinated, or boosted. Adults in the South, Midwest, and West (HHS regions 4, 6, 7, and 10) were more likely than adults in the Northeast (HHS region 1) to have lower vaccination coverage across all vaccination groups.

People who are unemployed, frontline essential workers, and those working in family businesses were more likely to be unvaccinated (Table 2). Households with children, particularly children <5 years, were more likely to be unvaccinated than households without children. Adults who often do not have enough to eat, or live in transient homes such as mobile home, boat, van, or recreational vehicles, were more likely not to have received any doses, not to be fully vaccinated, or not to be boosted than those with enough to eat or those living in single family homes, respectively.

* Health and human services regions are defined as the following: Region 1 – Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont; Region 2 – New Jersey, and New York; Region 3 – Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, and West Virginia; Region 4 – Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee; Region 5 – Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin; Region 6 – Arkansas, Louisiana, New Mexico, Oklahoma, and Texas; Region 7 – Iowa, Kansas, Missouri, and Nebraska; Region 8 – Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming; Region 9 – Arizona, California, Hawaii, and Nevada; Region 10 – Alaska, Idaho, Oregon, and Washington.

† Employment status was assessed by the following question: “In the last 7 days, did you do any work for either pay or profit?” (yes/no).

‡ Essential worker status was assessed by the following questions: “In the last 7 days, have you worked or volunteered outside your home?” (yes/no). If respondents answered “yes,” they were asked the following question: “Since January 1, 2021, which best describes the primary location/setting where you worked or volunteered outside your home?” Based on definitions from the U.S. Department of Homeland Security’s Cybersecurity and Infrastructure Security Agency’s (CISA), respondents were categorized as healthcare personnel (HCP) if their response falls in one of the following primary location/setting categories: 1) healthcare (such as hospital, doctor, dentist or mental health specialist office, outpatient facility, long-term care, home health care, pharmacy, and medical laboratory), 2) social service (such as child, youth, family, elderly, disability services), or 3) death care (such as funeral home, crematory, cemetery). Respondents were categorized as school if they replied with either one of the following settings: 1) education (pre-K, K-12 school) or childcare, or 2) other education (such as business or technical school, college, university). Furthermore, respondents were categorized as non-healthcare frontline essential workers if respondents replied with one of the following 8 settings: 1) first responder (such as police or fire protection, emergency relief services), 2) correctional facility (such as jail, prison, detention center, reforma-

§ Employment type was assessed by the following question, “Are you employed by the government, by a private company, a nonprofit organization or are you self-employed or working in a family business?” Response options were 1) government, 2) private company, 3) non-profit organization including tax exempt and charitable organizations, 4) self-employed, or 5) working in a family business. Due to small sample sizes, respondents that work in a family business were combined with those who were self-employed.

|| Questions on disability and functional status were derived from previously established measures: 1) Do you have difficulty seeing, even when wearing glasses? 2) Do you have difficulty hearing, even when using a hearing aid? 3) Do you have difficulty remembering or concentrating?, and 4) Do you have difficulty walking or climbing stairs? Response options were 1) no difficulty, 2) some difficulty, 3) a lot of difficulty, and 4) cannot do at all. Those who answered “a lot of difficulty” or “cannot do at all” were categorized as having the specific disability pertaining to that question (e.g., hearing disability). This produced four non-mutually exclusive groups for disability. An overall disability status variable was created for those who reported any of the four categories of disability.

** Full vaccination was defined as receiving ≥2 doses of the Johnson and Johnson (Janssen vaccine), ≥2 doses of Pfizer-Biontech or Moderna vaccine, or ≥2 doses of “one of the brands that requires two initial shots, but not sure which brand”.

†† Booster vaccination was defined as receiving ≥2 doses of the Johnson and Johnson (Janssen vaccine), ≥3 doses of Pfizer-Biontech or Moderna vaccine, or ≥3 doses of “one of the brands that requires two initial shots, but not sure which brand,” among adults who are fully vaccinated for COVID-19.
Table 1  
COVID-19 vaccination status by socioeconomic characteristics, United States, December 29, 2021 – January 10, 2022

| Age group (years) | Gender | Female | Male | Adjusted prevalence ratio | 95% CI | Unweighted (n) | Not vaccinated (n = 7,314) | Not fully vaccinated (n = 8,076) | Not boosted (n = 22,904)* |
|------------------|--------|--------|------|---------------------------|-------|---------------|----------------------------|-------------------------------|---------------------------|
| <65              |        |        |      |                           |       | 74,995        | 14.9 (14,4, 15.4)           | 16.6 (16,0, 17.2)            | 44.9 (44,1, 45.5)          |
| 65+              |        |        |      |                           |       | 19,593        | 22.2 (21,1, 22.4)           | 23.0 (22,1, 23.4)            | 4.4 (3.9, 4.8)            |
| 20-24            |        |        |      |                           |       | 21,413        | 25.5 (25,3, 25.7)           | 26.2 (25,9, 26.6)            | 2.8 (2.6, 3.0)            |
| 25-49            |        |        |      |                           |       | 14,108        | 16.5 (16,3, 16.8)           | 17.2 (16,9, 17.5)            | 2.4 (2.2, 2.6)            |
| 50-64            |        |        |      |                           |       | 13,455        | 18.7 (18,5, 19.0)           | 19.4 (19,1, 19.8)            | 2.6 (2.4, 2.8)            |
| >65              |        |        |      |                           |       | 6,426         | 17.0 (16,6, 17.3)           | 18.5 (18,2, 18.9)            | 2.9 (2.7, 3.1)            |
| Female           |        |        |      |                           |       | 30,672        | 48.4 (48,4, 48.8)           | 50.3 (49,9, 50.7)            | 3.2 (3.0, 3.4)            |
| Male             |        |        |      |                           |       | 44,323        | 51.6 (51,6, 51.8)           | 49.7 (49,3, 50.1)            | 2.8 (2.6, 3.0)            |
| Age/ethnicity    |        |        |      |                           |       | 54,977        | 62.2 (62,1, 62.3)           | 63.8 (63,5, 64.2)            | 2.6 (2.4, 2.8)            |
| White            |        |        |      |                           |       | 5,752         | 11.3 (11,1, 11.5)           | 12.5 (12,3, 12.7)            | 1.2 (1.1, 1.3)            |
| Black            |        |        |      |                           |       | 4,065         | 5.6 (5,4, 5.7)             | 6.2 (5.9, 6.5)              | 1.1 (1.0, 1.2)            |
| Asian            |        |        |      |                           |       | 2,734         | 3.9 (3,5, 3.7)             | 4.7 (4.3, 5.1)              | 1.2 (1.1, 1.3)            |
| Multi/other      |        |        |      |                           |       | 20,140        | 13.5 (13,5, 13.5)           | 14.0 (13,9, 13.9)            | 1.0 (1.0, 1.0)            |
| Educational attainment|     |        |      |                           |       | 10,062        | 39 (38,8, 39.3)           | 40.6 (40,2, 41.0)            | 1.1 (1.1, 1.1)            |
| College graduate (Bachelor degree) |        |        |      |                           |       | 22,707        | 30.2 (30,2, 30.5)           | 30.8 (30,2, 31.1)            | 1.0 (1.0, 1.0)            |
| Above college graduate |        |        |      |                           |       | 22,086        | 17.2 (16,9, 17)            | 17.6 (17,3, 18.0)            | 1.0 (1.0, 1.0)            |
| Annual household income|         |        |      |                           |       | 32,795        | 33.8 (33,4, 34.2)          | 34.2 (33,9, 34.7)            | 1.0 (1.0, 1.0)            |
| Less than $35,000 |        |        |      |                           |       | 13,116        | 22.1 (21,5, 22.7)          | 22.5 (22,1, 23.0)            | 1.0 (1.0, 1.0)            |
| $35,000-$49,999  |        |        |      |                           |       | 6,831         | 9.8 (9,3, 10.2)            | 10.2 (9,8, 10.6)            | 1.0 (1.0, 1.0)            |
| $50,000-$74,999  |        |        |      |                           |       | 10,093        | 13.7 (13,1, 14.4)          | 14.1 (13,6, 14.6)            | 1.0 (1.0, 1.0)            |
| $75,000 and above|        |        |      |                           |       | 32,795        | 33.8 (33,4, 34.2)          | 34.2 (33,9, 34.7)            | 1.0 (1.0, 1.0)            |
| Did not report   |        |        |      |                           |       | 11,648        | 20.7 (20,2, 21.3)          | 21.6 (21,2, 22.6)            | 1.0 (1.0, 1.0)            |
| Health insurance |        |        |      |                           |       | 63,922        | 91.4 (91,0, 91.8)          | 91.7 (91,4, 92.0)            | 1.0 (1.0, 1.0)            |
| Yes              |        |        |      |                           |       | 3,281         | 8.6 (8,2, 9.0)             | 8.3 (8,0, 8.6)              | 1.0 (1.0, 1.0)            |
| No               |        |        |      |                           |       | 58,529        | 76.4 (75,8, 77,0)          | 76.1 (75,8, 76.4)            | 1.0 (1.0, 1.0)            |
| Previous COVID-19 infection|     |        |      |                           |       | 14,682        | 23.6 (23,1, 24.2)          | 23.9 (23,5, 24.4)            | 1.0 (1.0, 1.0)            |
| Yes              |        |        |      |                           |       | 58,529        | 76.4 (75,8, 77,0)          | 76.1 (75,8, 76.4)            | 1.0 (1.0, 1.0)            |
| No               |        |        |      |                           |       | 13,116        | 22.1 (21,5, 22.7)          | 22.5 (22,1, 23.0)            | 1.0 (1.0, 1.0)            |

*aPR* adjusted prevalence ratio; CI, confidence interval; HHS, Health and Human Services.

Full vaccination was defined as receiving ≥1 dose of the Johnson and Johnson (Janssen vaccine), ≥2 doses of Pfizer-Biontech or Moderna vaccine, or ≥3 doses of "one of the brands that requires two initial shots, but not sure which brand".

Booster vaccination was defined as receiving ≥2 dose of the Johnson and Johnson (Janssen vaccine), ≥3 doses of Pfizer-Biontech or Moderna vaccine, or ≥3 doses of "one of the brands that requires two initial shots, but not sure which brand," among adults who are fully vaccinated for COVID-19.

Model adjusted for age, gender, race/ethnicity, educational attainment, annual household income, health insurance, previous COVID-19 infection, and HHS region.

Health and human services regions (HHS) are defined as the following: Region 1 – Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont; Region 2 – New Jersey, and New York; Region 3 – Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, and West Virginia; Region 4 – Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee; Region 5 – Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin; Region 6 – Arkansas, Louisiana, New Mexico, Oklahoma, and Texas; Region 7 – Iowa, Kansas, Missouri, and Nebraska; Region 8 – Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming; Region 9 – Arizona, California, Hawaii, and Nevada; Region 10 – Alaska, Idaho, Oregon, and Washington.

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The main reasons for not being vaccinated were concerns about side effects (53.4%), lack of trust in vaccines (42.4%), lack of trust in the government (36.3%), and belief that a vaccine is not needed (29.8%; Fig 2)

CONCLUSION AND DISCUSSION

Despite increases in vaccination coverage since the beginning of the vaccination campaign,6 almost 1 in 6 adults have not been vaccinated or not been fully vaccinated, and almost one-half have not received a booster vaccine. Similar to sociodemographic characteristics for nonvaccination found in previous studies,4,6 lack of booster vaccination was highest among younger adults, Hispanic and NH Black adults, adults with lower educational attainment and income levels, adults with no insurance, adults with a previous COVID-19 diagnosis, and adults living in the Southern region of the United States. Furthermore, adults who were not employed, were frontline essential workers or worked in a family business were more likely not to be vaccinated or boosted.

The findings in this study are subject to several limitations. First, although sampling methods and data weighting were designed to produce nationally representative results, respondents might not be fully representative of the general US adult population. Second, despite increases in vaccination coverage since the beginning of the vaccination campaign,6 almost 1 in 6 adults have not been vaccinated or not been fully vaccinated, and almost one-half have not received a booster vaccine. Similar to sociodemographic characteristics for nonvaccination found in previous studies,4,6 lack of booster vaccination was highest among younger adults, Hispanic and NH Black adults, adults with lower educational attainment and income levels, adults with no insurance, adults with a previous COVID-19 diagnosis, and adults living in the Southern region of the United States. Furthermore, adults who were not employed, were frontline essential workers or worked in a family business were more likely not to be vaccinated or boosted.

The findings in this study are subject to several limitations. First, although sampling methods and data weighting were designed to produce nationally representative results, respondents might not be fully representative of the general US adult population. Second,

Table 2
COVID-19 vaccination status by select groups, United States, December 29, 2021 – January 10, 2022.

| Overall | Not vaccinated | Not fully vaccinated | Not boosted |
|---------|----------------|---------------------|-------------|
|         | % (95% CI)     | % (95% CI)          | aPR (95% CI) | % (95% CI) | aPR (95% CI) |
| Employed |                |                     |             |           |               |
| No       | 44.4 (43.7, 45.0) | 15.4 (14.5, 16.4) | ref. | 17.3 (16.2, 18.4) | ref. | 42.5 (41.4, 43.7) | ref. |
| Yes      | 55.6 (55.0, 56.3) | 13.1 (12.4, 13.8) | 0.83 (0.76, 0.89) | 14.5 (13.8, 15.2) | 0.82 (0.76, 0.89) | 46.2 (45.3, 47.2) | 1.00 (0.96, 1.04) |
| Essential worker group |                 |                     |             |           |               |
| Non-essential worker | 64.8 (63.9, 65.8) | 12.3 (11.5, 13.1) | ref. | 13.5 (12.7, 14.3) | ref. | 46.0 (44.7, 47.2) | ref. |
| Healthcare personnel | 8.9 (8.4, 9.4) | 5.9 (4.7, 7.0) | 0.54 (0.45, 0.67) | 7.9 (6.6, 9.1) | 0.65 (0.55, 0.77) | 40.6 (37.5, 43.8) | 0.86 (0.79, 0.83) |
| School | 4.7 (4.4, 5.0) | 7.5 (5.9, 9.1) | 0.91 (0.74, 1.12) | 8.9 (7.1, 10.7) | 0.96 (0.79, 1.17) | 36.2 (32.8, 39.7) | 0.88 (0.79, 0.98) |
| Frontline worker | 9.5 (9.0, 10.0) | 21.5 (19.2, 23.8) | 1.36 (1.19, 1.56) | 22.8 (20.4, 25.1) | 1.32 (1.16, 1.49) | 53.6 (50.4, 56.8) | 1.03 (0.96, 1.11) |
| Other essential worker | 12.0 (11.3, 12.7) | 17.7 (15.3, 20.2) | 1.15 (0.96, 1.39) | 19.8 (17.3, 22.2) | 1.78 (1.00, 1.38) | 50.0 (46.6, 53.4) | 0.98 (0.91, 1.06) |
| Employment type |                 |                     |             |           |               |
| Non-profit | 9.3 (8.8, 9.8) | 6.1 (4.7, 7.6) | ref. | 6.7 (5.3, 8.1) | ref. | 35.2 (32.7, 37.8) | ref. |
| Private | 63.4 (62.6, 64.1) | 13.4 (12.5, 14.3) | 1.37 (1.06, 1.76) | 145.0 (139.1, 15.8) | 1.42 (1.13, 1.78) | 48.5 (47.2, 49.7) | 1.18 (1.09, 1.27) |
| Government | 14.0 (13.5, 14.6) | 9.6 (8.1, 11.1) | 1.24 (0.91, 1.69) | 10.7 (9.1, 12.2) | 0.95 (0.71, 1.28) | 43.0 (40.8, 45.6) | 1.11 (1.01, 1.22) |
| Family business (including self-employment) | 13.2 (12.6, 13.9) | 19.5 (17.1, 21.9) | 2.26 (1.69, 3.03) | 21.2 (18.7, 23.7) | 2.29 (1.76, 2.98) | 45.5 (42.9, 48.0) | 1.15 (1.06, 1.26) |
| Disability status |               |                     |             |           |               |
| No | 86.0 (85.4, 86.5) | 12.9 (12.3, 13.5) | ref. | 14.3 (13.6, 15.0) | ref. | 42.4 (41.5, 43.3) | ref. |
| Yes | 14.0 (13.5, 14.6) | 16.1 (14.2, 17.9) | 0.97 (0.87, 1.09) | 18.4 (16.6, 20.1) | 0.99 (0.91, 1.09) | 48.4 (46.1, 50.7) | 1.03 (0.98, 1.08) |
| Mental health symptoms |               |                     |             |           |               |
| None | 67.9 (67.2, 68.7) | 13.0 (12.4, 13.6) | ref. | 14.3 (13.6, 14.9) | ref. | 39.9 (39.0, 40.8) | ref. |
| Anxiety or depression | 32.1 (31.3, 32.8) | 14.6 (13.7, 15.5) | 0.79 (0.72, 0.87) | 16.7 (15.7, 17.8) | 0.83 (0.76, 0.90) | 50.9 (49.3, 52.5) | 1.02 (0.97, 1.06) |

(continued)
vaccination status for respondents was self-reported and is subject to social desirability bias. Third, the survey did not collect dates of vaccination, so lack of full vaccination coverage or booster vaccination may be due to eligibility in a small percentage of individuals. Finally, the HPS has a low response rate (<10%); although non-response bias assessment conducted by the Census Bureau found that the survey weights mitigated most of this bias.9

With preventive measures, such as social distancing and mask mandates, lifting throughout the United States,10 it is crucial that all eligible individuals receive the recommended number of vaccines as soon as possible to prevent further transmission of COVID-19 and to bring an end to the pandemic.

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Table 2 (Continued)

| Housing type | Overall | % (95% CI) | Overall | % (95% CI) | Overall | % (95% CI) | Overall | % (95% CI) | Overall | % (95% CI) |
|--------------|---------|----------|---------|----------|---------|----------|---------|----------|---------|----------|
| None         | 63.3 (62.6, 64.1) | 10.8 (10.3, 11.4) | ref.     | 12.1 (11.6, 12.7) | ref.     | 39.5 (38.6, 40.4) | ref.     | 55.5 (52.6, 58.4) | 1.13 (1.05, 1.21) |
| <5 years old | 7.1 (6.7, 7.5) | 24.9 (21.5, 28.2) | 1.75 (1.48, 2.06) | 28.8 (25.0, 32.5) | 1.86 (1.63, 2.13) | 36.3 (34.3, 38.4) | 1.16 (1.08, 1.24) |
| 5-11 years old | 10.9 (10.5, 11.4) | 22.0 (20.4, 23.6) | 1.53 (1.37, 1.72) | 24.1 (22.5, 25.7) | 1.51 (1.37, 1.67) | 36.3 (34.3, 38.4) | 1.16 (1.08, 1.24) |
| 12-17 years old | 18.7 (18.1, 19.3) | 20.8 (19.3, 22.3) | 1.51 (1.37, 1.68) | 22.5 (21.0, 24.1) | 1.48 (1.34, 1.62) | 36.3 (34.3, 38.4) | 1.16 (1.08, 1.24) |
| Food sufficiency | 2.2 (2.0, 2.5) | 29.4 (24.6, 34.3) | 1.33 (1.08, 1.66) | 33.4 (28.3, 38.4) | 1.34 (1.11, 1.62) | 41.4 (36.6, 46.2) | 1.07 (1.01, 1.13) |
| Enough food to eat | 89.8 (89.4, 90.3) | 12.5 (11.9, 13.0) | ref.     | 13.7 (13.2, 14.3) | ref.     | 41.4 (36.6, 46.2) | 1.07 (1.01, 1.13) |
| Sometimes | 7.9 (7.5, 8.4) | 22.2 (19.3, 25.1) | 1.14 (0.98, 1.32) | 26.4 (23.3, 29.4) | 1.21 (1.06, 1.38) | 65.3 (62.4, 68.3) | 1.12 (1.07, 1.18) |
| Often not enough to eat | 2.2 (2.0, 2.5) | 29.4 (24.6, 34.3) | 1.33 (1.08, 1.66) | 33.4 (28.3, 38.4) | 1.34 (1.11, 1.62) | 72.2 (66.9, 77.5) | 1.17 (1.12, 1.21) |
| Housing type | 5.5 (5.1, 5.9) | 26.9 (23.8, 30.1) | 1.26 (1.09, 1.45) | 30.8 (27.4, 34.3) | 1.27 (1.13, 1.43) | 56.5 (52.5, 60.4) | 1.11 (1.03, 1.19) |

aPR, adjusted prevalence ratio; CI, confidence interval; ref, reference.

“Full vaccination was defined as receiving ≥1 dose of the Johnson and Johnson (Janssen vaccine), ≥2 doses of Pfizer-Biontech or Moderna vaccine, or ≥3 doses of ʻone of the brands that requires two initial shots, but not sure which brand.ʻ

1 Booster vaccination was defined as receiving ≥2 dose of the Johnson and Johnson (Janssen vaccine), ≥3 doses of Pfizer-Biontech or Moderna vaccine, or ≥3 doses of ʻone of the brands that requires two initial shots, but not sure which brand,ʻ among adults who are fully vaccinated for COVID-19.

Separate multivariable logistic models were conducted for each group as the explanatory variable and adjusted for age, gender, race/ethnicity, educational attainment, annual household income, health insurance, previous COVID-19 infection, and Health and Human services region.

Table 2. Main reasons for not intending to receive COVID-19 vaccination in United States.