Title

COVID-19: Public Compliance with and Public Support for Stay-at-Home Mitigation Strategies

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NOTE: This preprint reports new research that has not been certified by peer review and should not be used to guide clinical practice.
ABSTRACT

Objectives

Governments worldwide have recommended unprecedented measures to mitigate the coronavirus disease 2019 (COVID-19) pandemic. As pressure mounts to scale back these measures, understanding public compliance with and priorities for COVID-19 mitigation is critical. The main aim of this study was to assess public compliance with and support for government-imposed stay-at-home orders in nations and cities with different COVID-19 infection and death rates.

Design

In this cross-sectional study, questionnaires were administered to nationally representative respondents from April 2-8, 2020.

Setting

Regions with different disease prevalence included two nations [the United States (US—high) and Australia (AU—low)] and two cities [New York (NY—high) and Los Angeles (LA—low)].

Participants

For adults 18 years or older residing in specified regions, eligible respondents were empaneled until representative quotas were reached for age, gender, and either race and ethnicity (US, NY, LA) or ancestry (AU), matching the 2010 US or 2016 AU census. Of 8718 eligible potential respondents, 5573 (response rate, 63.9%) completed surveys (US: 3010; NY: 507; LA: 525; AU: 1531). The median age was 47 years (range, 18-89); 3039 (54.5%) were female.
Exposure

The prevalence of COVID-19 in each region (cumulative infections, deaths) as of April 8, 2020: US (458610, 15659), AU (5956, 45),\(^1\) NY (81803, 4571), LA (7530, 198).\(^2\)

Main Outcomes Measures

Public compliance with and attitudes regarding government-imposed stay-at-home orders were evaluated and compared between regions.

Results

Of 5573 total respondents, 4560 (81.8%) reported compliance with recommended quarantine or stay-at-home policies (range of samples, 75.5%-88.2%). Despite significant disruptions of social and work life, health, and behavior, 5022 respondents (90.1%) supported government-imposed stay-at-home orders (range of samples, 88.9%-93.1%). Of these, 90.8% believe orders should last at least three more weeks or until public health or government officials recommend, with such support spanning the political spectrum.

Conclusions

Public compliance with stringent quarantine and stay-at-home policies was very high, in both highly-affected (US, NY) and minimally-affected regions (AU, LA). Despite extensive disruption of respondents’ lives, the vast majority supported continuation of long-term government-imposed stay-at-home orders. These findings have important implications for policymakers grappling with the decision as to when to lift restrictions.
Introduction

To date, more than 2,500,000 confirmed cases and 175,000 deaths have been attributed to the novel coronavirus disease 2019 (COVID-19) pandemic. Absent widespread testing or safe and efficacious treatments, isolation and quarantine have been recommended worldwide for the first time in a century. Disease prevalence and associated public health policies have varied across jurisdictions and changed over time, largely without systematic assessment of public responses to the crisis or the mitigation strategies.

Methods

Study Design and Recruitment

To evaluate public compliance with and support for recommended COVID-19 mitigation strategies, we collected cross-sectional surveys of nationally representative respondents using demographic quota sampling. Surveys were administered to an online respondent panel by Qualtrics, LLC (Provo, Utah, and Seattle, Washington, US), a commercial survey company with a network of participant pools consisting of hundreds of suppliers. Recruitment methodologies include digital advertisements and promotions, word of mouth and membership referrals, social networks, TV and radio advertisements, and offline mail-based approaches.

Between April 2-8 2020 (a one-week period), samples were drawn from regions with markedly different infection and death rates from COVID-19 (Table 1), including nationwide samples in the United States (US, high incidence) and Australia (AU, low incidence), and two citywide samples in the New York (NY, high incidence) and Los
Angeles (LA, low incidence) metropolitan areas.

Study Approval

The study protocol was approved by the Monash University Human Research Ethics Committee (MUHREC) and conducted in accordance with ethical guidelines. Respondents were informed of the study purposes and provided electronic consent prior to commencement. Investigators received anonymized responses.

Population

Target numbers of respondent-completed surveys follows: US (3000), NY (500), LA (500), AU (1500). To be eligible to participate, respondents were required to report being aged 18 years or older with current residence in specified regions. Demographic sampling quotas were implemented for age, gender, and either race and ethnicity (US, NY, LA) or ancestry (AU), based on 2010 US and 2016 Australian census data. Potential respondents likely to qualify based on demographic characteristics listed in their Qualtrics panelist profile were targeted during recruitment; demographic questions were included in the survey to confirm eligibility. Potential respondents received invitations and could opt to participate by activating a survey link directing them to the participant information and consent page preceding the survey. Ineligible respondents who did not meet inclusion criteria (e.g., less than 18 years of age, not a resident of a targeted region) or exceeded set quotas (i.e., maximum demographic characteristic quota already met) were disempaneled from the survey.

Survey Instruments

The surveys contained 86 [United States (US), New York (NY), Los Angeles (LA)] or 85
[culturally adapted for Australia (AU)] items, with each item requiring a response, and was designed to take approximately 15 minutes to complete. Respondents were required to self-report demographic characteristics and respond to questions about COVID-19 and mitigation strategies including compliance, priorities, sources of concern, and comparisons of current lifestyle versus lifestyle between October and December 2019 (i.e., before COVID-19 and mitigation strategies). Additional health-related questions were asked independent of COVID-19. When possible, brief validated instruments were used, including the Short-Form Sleep Condition Indicator (SCI-01) for insomnia risk assessment, Patient Health Questionnaire-4 (PHQ-4) for anxiety and depression risk assessment, the Perceived Stress Scale-4 (PSS-4) for perceived stress assessment, and the Mini Z for burnout risk assessment.5-8 When required, validated instruments were adapted, including the Horne and Östberg Morningness-Eveningness Questionnaire (MEQ) for chronotype assessment, the μshort Munich ChronoType Questionnaire (μMCTQ) for chronotype and sleep behavior assessment, Obstructive Sleep Apnoea 50 (OSA50) for obstructive sleep apnea risk assessment, single-item physical activity measure, and Hurt-Insult-Threaten-Scream (HITS) screening tool for domestic violence.9-14

Quality Screening

To verify response quality, Qualtrics conducted standardized quality screening and data scrubbing procedures. Techniques included algorithmic analysis for attention patterns, click-through behavior, duplicate responses, keystroke analysis, machine responses, and inattentiveness. Country-specific geolocation verification via IP address mapping was used to ensure respondents were from the country specified in their response.
Respondents who failed an attention or speed check, along with any responses identified by the data scrubbing algorithms, were excluded from the final sample.

Results

Between April 2 and April 8, 2020, respondents completed 5573 surveys (US: 3010; NY: 507; LA: 525; AU: 1531) with a 63.9% response rate (Figure 1). Overall, 3039 (54.5%) were female; the median age of participants was 47 years (range, 18-89). See Table 2 for respondent characteristics. Cross-sectional results of COVID-19-mitigation compliance, public priorities, and life impact for each sample are reported by region (Figure 2; Table 1). Altogether, 4560 respondents (81.8%) reported quarantining or voluntarily self-isolating (range of samples, 75.5%-88.2%). Moreover, 5022 (90.1%) believe a government-imposed stay-at-home order is warranted (range of samples, 88.9%-93.1%). Of these, 90.8% believe the order should last at least three more weeks (9.1%), a month or longer (43.8%), or until public health (31.1%) or government officials (6.8%) determine it is safe to lift the restrictions. Of 5304 respondents (95.2%) who made predictions, the average predicted date by which COVID-19 would no longer affect their daily lives was between mid-June and mid-August, though there was high variability in predictions. Strong support for a government-imposed stay-at-home order spanned the political spectrum (Table 1).

Overall, 4431 respondents (79.5%, range of samples, 77.5%-82.1%) reported moderate to extreme concern about their own (61.9%) or others’ (75.5%) infection and 3974 (71.3%, range of samples, 69.8%-76.0%) about their own (43.4%) or others’ (68.7%) death. Access to testing (59.3%), medical care for COVID-19 (64.5%), medical care for pre-existing conditions due to hospital overload (59.2%), social or physical isolation
(58.1%), and sense of purpose (49.8%) were also sources of moderate to extreme concern. Overall, 1217 respondents (21.8%) identified as high risk for severe COVID-19 infection. Across regions, nearly half (42.0%-45.3%) reported spending considerable time (average, 23.2 hours per week) consuming information (media, government reports, health officials, family) about COVID-19. NY had the highest percentage of respondents who reported knowing someone who has tested positive for (27.0% vs. 5.6%-11.0%), been hospitalized for (14.6% vs. 2.4%-6.5%) or died from (9.5% vs. 0.7%-2.9%) COVID-19.

Consistent across regions, respondents reported that COVID-19 and mitigation strategies have caused moderate to extreme disruption of social life (75.3%), family life (41.0%), work/studies (43.5%), productivity (41.6%), physical activity (45.1%), sexual activity (23.6%), and sleep patterns (39.3%). Overall, 1999 respondents (35.9%) reported exercising less frequently, and 409 (7.4%) reported concerning weight gain. Daily outdoor light exposure was reduced by 1 hour or more in 2279 respondents (40.9%). The estimated percentage of virtual interactions (versus face-to-face) increased from 14.6% to 66.1%, and 1786 respondents (32.0%) reported more than 1 hour increase in daily screen time.

Widespread concerns included the possibility of an economic recession and open-endedness of COVID-19 and mitigation measures (79.2% and 72.2%, respectively). A total of 3119 respondents (56.0%) reported feeling anxious or nervous, 2453 (44.0%) depressed or hopeless, and 2511 (45.1%) unable to stop or control worrying at least several days in the prior two weeks.
Discussion

Resounding compliance with and support for disruptive mitigation measures evidenced in these nationally representative samples, despite belief by 91.4% of respondents that they will never be infected with COVID-19 (range of samples, 89.2%-92.6%), suggests that controlling COVID-19 is a top public priority.\(^{15}\) We used quota sample surveys to rapidly assess public compliance, priorities, and life impact related to COVID-19 and mitigation strategies. We recognize the potential for self-selection bias; however, the high response rate (63.9%) and consistency of responses across cities and countries despite different rates of infection, governments, and mitigation strategies indicate that these results are robust. Contrary to public attitudes and compliance with recommended mitigation during the last pandemic\(^{16-17}\) declared by the World Health Organization for novel influenza A (H1N1) in 2009,\(^{18}\) the public response to the COVID-19 pandemic represents a hitherto unprecedented and rapid level of compliance with public health emergency measures that have and will continue to have a profound impact on economics and public life. These results demonstrate an escalated public response compared to before shelter-in-place orders were widely implemented,\(^{19}\) and contribute to a growing body of evidence that mitigation strategies for COVID-19, like those for previous outbreaks, are associated with significant disruption of life and general health consequences.\(^{20-25}\) These findings may also provide insight into behavioral countermeasures related to sleep, exercise, and diet that may reduce adverse health consequences of COVID-19 mitigation measures. As controversies over the legality\(^{26}\) and balance between duration and nature of mitigation strategies and related consequences continue to mount, and with the recent prospect of repeated and
protracted stay-at-home orders being recommended over the next two years,\textsuperscript{27} assessment of public priorities, compliance, and life impact is paramount.

Compliance with and support for COVID-19 mitigation strategies, alongside concerns and life impact, were assessed in nationally representative samples in the United States and Australia. These timely findings indicate that the public is not only willing to accept current mitigation measures and their associated costs, but that people endorse their continuation until the COVID-19 pandemic is controlled.
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Author Contributions

M.É.C. had full access to all data in the study and takes responsibility for the integrity of
the data and accuracy of data analyses.

Concept and design: All authors.

Acquisition and analysis of data: M.É.C.

Drafting of the manuscript: M.É.C., S.M.W.R., C.A.C.

Critical revision of the manuscript for important intellectual content: All authors.

Supervision: M.E.H., S.M.W.R., C.A.C.

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Conflict of Interest Disclosures

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REFERENCES

1. Coronavirus disease 2019 (COVID-19) Situation Report – 76. World Health Organization. [Cited 2020 April 10]. Available from: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200405-sitrep-76-covid-19.pdf?sfvrsn=6ecf0977_4.

2. Coronavirus (Covid-19) Data in the United States; 2020 [cited 2020 April 10]. Database: The New York Times [Internet]. Available from: https://github.com/nytimes/covid-19-data.

3. Dong E, Du H, Gardner L. An interactive web-based dashboard to track COVID-19 in real time. Lancet Infect Dis; published online Feb 19. doi: 10.1016/S1473-3099(20)30120-1.

4. Miller CA, Guidry JPD, Dahman B, Thomson MD. A Tale of Two Diverse Qualtrics Samples: Information for Online Survey Researchers. Cancer Epidemiol Biomarkers Prev. 2020;29(4):731–735. doi: 10.1158/1055-9965.EPI-19-0846.

5. Espie CA, Kyle SD, Hames P, Gardani M, Fleming L, Cape J. The Sleep Condition Indicator: a clinical screening tool to evaluate insomnia disorder. BMJ Open. doi: 10.1136/bmjopen-2013-004183.

6. Löwe B, Wahl I, Rose M, et al. A 4-item measure of depression and anxiety: validation and standardization of the Patient Health Questionnaire-4 (PHQ-4) in the general population. J Affect Discord. 2010;122(1-2):86-95. doi: 10.1016/j.jad.2009.06.019.

7. Lee E-H. Review of the Psychometric Evidence of the Perceived Stress Scale. Asian Nurs Res. 2012;6(4):121-7. doi: 10.1016/j.anr.2012.08.004.

8. Dolan ED, Mohr D, Lempa M, et al. Using a Single Item to Measure Burnout in Primary Care Staff: A Psychometric Evaluation. J Gen Intern Med. 2015;30(5):582-7. doi: 10.1007/s11606-014-3112-6.

9. Horne JA, Östberg O. A self-assessment questionnaire to determine morningness-eveningness in human circadian rhythms. Int J Chronobiol. 1976;4(2):97-110.
10. Ghotbi N, Pilz LK, Winnebeck EC, et al. The μMCTQ: An Ultra-Short Version of the Munich ChronoType Questionnaire. *J Biol Rhythms*. 2020;35(1):98-110. doi: 10.1177/0748730419886986.

11. Chai-Coetzer CL, Antic NA, Rowland LS, et al. A simplified model of screening questionnaire and home monitoring for obstructive sleep apnoea in primary care. *Thorax*. 2011;66(3):213-9. doi: 10.1136/thx.2010.152801.

12. Milton K, Bull FC, Bauman A. Reliability and validity testing of a single-item physical activity measure. *Br J Sports Med*. 2011;45(3):203-8. doi: 10.1136/bjsm.2009.068395.

13. Sherin KM, Sinacore JM, Li XQ, Zitter RE, Sahkil A. HITS: a short domestic violence screening tool for use in a family practice setting. *Fam Med*. 1998;30(7):508-12.

14. Shakil A, Donald S, Sinacore JM, Krepcho M. Validation of the HITS domestic violence screening tool with males. *Fam Med*. 2005;37(3):193-8.

15. Zhang X, Wang F, Zhu C, Wang Z. Willingness to Self-Isolate hen Facing a Pandemic Risk: Model, Empirical Test, and Policy Recommendations. *Int J Environ Res Public Health*. 2019;17(1):197. Published online December 27, 2019. doi: 10.3390/ijerph17010197.

16. Jhummon-Mahadnac ND, Knott J, Marshall C. A cross-sectional study of pandemic influenza health literacy and the effect of a public health campaign. *BMC Res Notes*. 2012;5(377). doi: 10.1186/1756-0500-5-377.

17. Kavanagh AM, Bentley RJ, Mason KE, et al. Sources, perceived usefulness and understanding of information disseminated to families who entered home quarantine during the H1N1 pandemic in Victoria, Australia: a cross-sectional study. *BMC Infect Dis*. 2011;11(2). doi: 10.1186/1471-2334-11-2.

18. World now at the start of 2009 influenza pandemic. World Health Organization. [Cited 2020 April 13]. Available from: https://www.who.int/mediacentre/news/statements/2009/h1n1_pandemic_phase6_20090611/en/.
19. Nelson LM, Simard JF, Oluyomi A, et al. US Public Concerns About the COVID-19 Pandemic From Results of a Survey Given via Social Media. *JAMA Intern Med.* Published online April 07, 2020. doi: 10.1001/jamainternmed.2020.1369.

20. Hawryluck L, Gold WL, Robinson S, Pogorski S, Galea S, Styra R. SARS control and psychological effects of quarantine, Toronto, Canada. *Emerg Infect Dis.* 2004;10:1206-12. doi: 10.3201/eid1007.030703.

21. Van Bortel T, Basnayake A, Wurie F, Jambai M, Koroma AS, Muana AT, et al. Psychosocial effects of an Ebola outbreak at individual, community and international levels. *Bull World Health Organ.* 2016;94:210–4. doi: http://dx.doi.org/10.2471/BLT.15.158543.

22. Lai J, Ma S, Wang Y, et al. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Netw Open.* 2020;3(3):e203976. doi: 10.1001/jamanetworkopen.2020.3976.

23. Wang C, Pan R, Wan X, et al. Immediate Psychological Responses and Associated Factors during the Initial Stage of the 2019 Coronavirus Disease (COVID-19) Epidemic among the General Population in China. *Int J Environ Res Public Health.* 2020;17(5). pii: E1729. doi: 10.3390/ijerph17051729.

24. Li S, Wang Y, Xue J, Zhao N, Zhu T. The Impact of COVID-19 Epidemic Declaration on Psychological Consequences: A Study on Active Weibo Users. *Int J Environ Res Public Health.* 2020;17(6):2032. doi: 10.3390/ijerph17062032.

25. Brooks SK, Webster RK, Smith LE, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet.* 2020;395(10227):912–920. doi: 10.1016/S0140-6736(20)30460-8.

26. Parmet WE, Sinha MS. Covid-19 - The Law and Limits of Quarantine. *N Engl J Med.* 2020;382(15):e28. doi: 10.1056/NEJMp2004211.

27. Kissler SM, Tedijanto C, Goldstein E, Grad YH, Lipsitch M. Projecting the transmission dynamics of SARS-CoV-2 through the postpandemic period. *Science.* Published online April
14, 2020. doi: 10.1126/science.abb5793.

28. Coronavirus disease 2019 (COVID-19) Situation Report – 73. World Health Organization. [Cited 2020 April 10]. Available from: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200402-sitrep-73-covid-19.pdf?sfvrsn=5ae25bc7_6.

29. Coronavirus disease 2019 (COVID-19) Situation Report – 79. World Health Organization. [Cited 2020 April 10]. Available from: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200408-sitrep-79-covid-19.pdf?sfvrsn=4796b143_6.
Figure 1. Flow of Survey Respondents

17692 Potential respondents received survey invitation

8717 Eligible to participate

8975 Not in targeted cohort
  1462 not 18 years of age
  2105 not resident of targeted regions
  5039 over *a priori* specified quota limit
  369 algorithmically identified poor quality
  (e.g., failed location verification, duplicate or machine responders)

1915 Did not activate survey link

6802 Eligible to consent

1229 Did not consent

5573 Surveys included in analysis
**Fig 1.** The survey was managed through an online respondent panel by Qualtrics. *A priori* quota limits were determined prior to study initiation to ensure nationally representative samples were collected and included the following: age, gender, and either race and ethnicity (US, NY, LA) or ancestry (AU), based on 2010 US and 2016 Australian census data. Of 8718 eligible potential respondents, 5573 completed surveys, providing a 63.9% response rate.
Figure 2. Public COVID-19 Mitigation Compliance, Concerns, Policy Support and Experience

A. Compliance, Concerns and Policy Support

- Currently in quarantine or self-isolation
- Believe the government should impose stay-at-home order
- Believe eventual own infection
- Know someone with COVID-19
- Know someone who died due to COVID-19
- Concern of own or others’ risk of infection
- Concern of own or others’ risk of COVID-19 related death
- Concern of personal financial loss
- Concern of possible economic recession

B. Behavioral Changes

- Social life
- Family life
- Work/studies
- Productivity
- Sleep patterns
- Physical activity
- Sexual activity
- Virtual interactions (v. face-to-face)
- Time outdoors
- Time on screens
- Weekly work hours
- Commute time
- Weight

Percent Disrupted
Percent Improved
Percent Decreased
Percent Increased

- United States
- New York City
- Los Angeles
- Australia
Fig 2. (A) Percentage of respondents by region who report: compliance with nationally recommended mitigation strategies; support for a government-mandated stay-at-home order; perceived risk of eventual infection with COVID-19; personal experience with COVID-19 (i.e., knowing someone who was infected with or died from COVID-19); and moderate to extreme concerns regarding: one’s own or others’ risk of infection with or death from COVID-19, personal financial loss, and possible economic recession. (B) Upper quadrants: Impact by region of COVID-19 and mitigation strategies on social life, family life, work and/or study, productivity, sleep patterns, physical activity, and sexual activity; percentage of respondents reporting that the indicated behavioral category was moderately to extremely disrupted or improved is shown. Lower quadrants: Percentage of respondents reporting decreases or increases in six categories [virtual interactions vs. face-to-face interactions; time spent outdoors during daylight hours; time on light-emitting screens; weekly work hours (among respondents employed in the fourth quarter of 2019, n=3328); commute time; and weight] at the time of the survey in April, 2020 (after the COVID-19 pandemic was declared and mitigation was underway) as compared to the fourth quarter of 2019 (before the COVID-19 pandemic was declared).
Table 1. Summary of Results Overall and by Region

| Region                  | Overall (N=5573) | US (N=3010) | NY (N=507) | LA (N=525) | AU (N=1531) |
|-------------------------|------------------|-------------|------------|------------|------------|
| **Regional infections and deaths due to COVID-19** |                  |             |            |            |            |
| Cumulative regional confirmed cases |                  |             |            |            |            |
| Study midpoint (April 5 2020) | 352935           | 273808      | 67562      | 5940       | 5635       |
| Range (April 2—April 8, 2020) | 248133—458610    | 187302—363321 | 51810—61803 | 4045—7530 | 4976—5965 |
| Cumulative regional deaths |                  |             |            |            |            |
| Study midpoint (April 5 2020) | 9658             | 7020        | 2472       | 132        | 34         |
| Range (April 2—April 8, 2020) | 5507—15659       | 3846—10845  | 1562—4571  | 78—198     | 21—45      |
| **Compliance with COVID-19 Mitigation Strategies** |                  |             |            |            |            |
| Social/Physical Distance—No. (%) |                  |             |            |            |            |
| In quarantine or self-isolation | 1013 (18.2) | 508 (16.9) | 68 (13.4) | 62 (11.8) | 375 (24.5) |
| Quarantine* | 1946 (34.9) | 1151 (38.2) | 214 (42.2) | 224 (42.7) | 357 (23.3) |
| Self-isolation | 2614 (46.9) | 1373 (45.9) | 225 (44.4) | 239 (45.5) | 799 (52.2) |
| **Predictions for When COVID-19 Will Stop Affecting Daily Life** |                  |             |            |            |            |
| Respondents offering predictions—No. (%) |                  |             |            |            |            |
| Number of days from survey completion date—mean, sd |                  |             |            |            |            |
| Respondents offering predictions | 5304 | 2878 (95.6) | 480 (94.7) | 501 (95.4) | 1445 (94.4) |
| **Public Priorities for COVID-19 Mitigation Strategies** |                  |             |            |            |            |
| Government should impose stay-at-home order—No. (%) |                  |             |            |            |            |
| No | 551 (9.9) | 300 (10.0) | 45 (8.9) | 36 (6.9) | 170 (11.1) |
| Yes | 5022 (90.1) | 2710 (90.0) | 462 (91.1) | 489 (93.1) | 1361 (88.9) |
| **Experience with COVID-19** |                  |             |            |            |            |
| Believe to have been exposed to COVID-19 in the past two weeks—No. (%) |                  |             |            |            |            |
| No | 5302 (95.1) | 2854 (94.8) | 463 (91.3) | 496 (94.5) | 1489 (97.3) |
| Yes | 271 (4.9) | 156 (5.2) | 50 (9.7) | 29 (5.5) | 42 (2.7) |
| **Hospitalized for COVID-19—No. (%)** |                  |             |            |            |            |
| No | 5355 (99.3) | 2990 (99.3) | 500 (98.6) | 519 (98.9) | 1526 (99.7) |
| Yes | 38 (0.7) | 20 (0.7) | 7 (1.4) | 6 (1.1) | 5 (0.3) |

*a Quarantine was defined as "not attending public places, including work, supermarkets or pharmacies, school or childcare, places of worship, etc. Individuals in quarantine do not have visitors and only live with people who usually live in your home. They stay at home or accommodation until medical care is required."

*b Predictions in the year 2030 or beyond were excluded. There were six such predictions, which follow: (US, 8/6/2064, 2/1/2071), (LA, 1/1/2030, 1/1/2032, 12/31/2050), (AU, 8/10/2068)

*c Stay-at-home was defined as "all non-essential services, such as dine-in restaurants, bars, social venues, gyms, fitness studios, and convention centers, are shut down. Essential services, such as groceries, pharmacies, gas stations, food banks, convenience stores, and delivery restaurants, remain open. Banks, local governments that provide services, and law enforcement agencies also remain open."
### Experience with COVID-19

| Experience | Overall (N=5573) | US (N=3010) | NY (N=507) | LA (N=525) | AU (N=1531) |
|------------|------------------|-------------|------------|------------|-------------|
| **Know someone who has…** |
| Tested positive for COVID-19—No. (%) | 4971 (89.2) | 2679 (89.0) | 370 (73.0) | 476 (90.7) | 1446 (94.4) |
| | 602 (10.8) | 331 (11.0) | 137 (27.0) | 49 (9.3) | 85 (5.6) |
| Colleague(s) | 141 (2.5) | 74 (2.5) | 40 (7.9) | 4 (0.8) | 23 (1.5) |
| Family Member(s) | 120 (2.2) | 71 (2.4) | 30 (5.9) | 7 (1.3) | 12 (0.8) |
| Friend(s) | 315 (5.7) | 165 (5.5) | 83 (16.4) | 30 (5.7) | 37 (2.4) |
| Significant other(s) | 28 (0.5) | 18 (0.6) | 0 (0.0) | 6 (0.4) | 0 (0.0) |
| Other | 141 (2.5) | 74 (2.4) | 137 (27.0) | 49 (9.3) | 85 (5.6) |
| **Been hospitalized due to COVID-19** |
| No | 5237 (94.0) | 2818 (93.6) | 431 (85.4) | 491 (93.5) | 1495 (97.6) |
| | 120 (2.2) | 71 (2.4) | 30 (5.9) | 7 (1.3) | 12 (0.8) |
| Colleague(s) | 68 (1.2) | 39 (1.3) | 16 (3.2) | 4 (0.8) | 9 (0.6) |
| Family Member(s) | 80 (1.4) | 51 (1.7) | 14 (2.8) | 7 (1.3) | 6 (0.4) |
| Friend(s) | 168 (3.0) | 85 (2.8) | 42 (8.3) | 6 (1.1) | 21 (1.4) |
| Significant other(s) | 15 (0.3) | 8 (0.3) | 3 (0.6) | 2 (0.4) | 2 (0.1) |
| Other | 42 (0.8) | 28 (0.9) | 5 (1.0) | 2 (0.4) | 3 (0.2) |
| **Died due to COVID-19** |
| No | 5415 (97.2) | 2924 (97.1) | 459 (90.5) | 512 (97.5) | 1520 (99.3) |
| | 158 (2.8) | 86 (2.9) | 48 (9.5) | 13 (2.5) | 11 (0.7) |
| Colleague(s) | 27 (0.5) | 13 (0.4) | 9 (1.8) | 1 (0.2) | 4 (0.3) |
| Family Member(s) | 15 (0.3) | 7 (0.2) | 6 (1.2) | 1 (0.2) | 1 (0.1) |
| Friend(s) | 81 (1.5) | 44 (1.5) | 26 (5.1) | 6 (1.1) | 5 (0.3) |
| Significant other(s) | 12 (0.2) | 6 (0.2) | 1 (0.2) | 0 (0.0) | 2 (0.1) |
| Other | 39 (0.7) | 22 (0.7) | 5 (1.0) | 1 (0.2) | 3 (0.2) |

### Concerns Related to COVID-19 and Mitigation Strategies

| Concern | Overall (N=5573) | US (N=3010) | NY (N=507) | LA (N=525) | AU (N=1531) |
|---------|------------------|-------------|------------|------------|-------------|
| Believe eventual infection—No. (%) | 5091 (91.4) | 2748 (91.3) | 452 (89.2) | 473 (90.1) | 1418 (92.6) |
| | 482 (8.6) | 262 (8.7) | 55 (10.8) | 52 (9.9) | 113 (7.4) |
| Believe high risk for severe illness if infected—No. (%) | 4356 (78.2) | 2318 (77.0) | 404 (79.7) | 406 (77.3) | 1228 (80.2) |
| | 120 (21.8) | 692 (23.0) | 103 (20.3) | 119 (22.7) | 303 (19.8) |
| Degree, if any, of concern about the following—No. (%) |
| Risk of own infection Moderate | 1513 (27.1) | 831 (27.6) | 120 (23.7) | 94 (17.9) | 247 (16.1) |
| | 1021 (18.3) | 553 (17.8) | 120 (23.7) | 115 (21.9) | 223 (14.6) |
| Strong | 917 (16.5) | 477 (15.8) | 99 (18.5) | 94 (17.9) | 247 (16.1) |
| Extreme | 1447 (26.0) | 788 (26.2) | 109 (21.5) | 115 (21.9) | 435 (28.4) |
| Risk of others’ infection Moderate | 1344 (24.1) | 710 (23.6) | 131 (25.8) | 135 (25.7) | 368 (24.0) |
| | 1417 (25.4) | 790 (26.2) | 151 (29.8) | 157 (29.9) | 319 (20.8) |
| Strong | 602 (10.8) | 324 (10.8) | 64 (12.6) | 65 (12.4) | 149 (9.7) |
| Extreme | 799 (14.3) | 444 (14.8) | 87 (17.2) | 84 (16.0) | 184 (12.0) |
| Risk of own death Moderate | 1015 (18.2) | 542 (18.0) | 92 (18.1) | 96 (18.3) | 285 (18.6) |
| | 602 (10.8) | 324 (10.8) | 64 (12.6) | 65 (12.4) | 149 (9.7) |
| Strong | 799 (14.3) | 444 (14.8) | 87 (17.2) | 84 (16.0) | 184 (12.0) |
| Extreme | 1347 (24.2) | 743 (24.7) | 110 (21.7) | 107 (20.4) | 387 (25.3) |
| Risk of others’ death Moderate | 1154 (20.7) | 598 (19.9) | 119 (23.5) | 115 (21.9) | 322 (21.0) |
| | 1327 (23.8) | 723 (24.0) | 138 (26.8) | 151 (28.8) | 317 (20.7) |
| Strong | 905 (16.2) | 512 (17.0) | 79 (15.6) | 104 (19.8) | 210 (13.7) |
| Extreme | 1053 (18.9) | 610 (20.3) | 132 (26.0) | 119 (22.7) | 192 (12.5) |
| Access to testing for COVID-19 Moderate | 1349 (24.2) | 692 (23.0) | 122 (24.1) | 134 (25.5) | 401 (26.2) |
| | 1053 (18.9) | 610 (20.3) | 132 (26.0) | 119 (22.7) | 192 (12.5) |
| Strong | 1222 (21.9) | 689 (22.9) | 141 (27.8) | 140 (26.7) | 252 (16.5) |
| Access to medical care for COVID-19 Moderate | 1325 (23.8) | 698 (23.2) | 99 (19.5) | 121 (23.0) | 407 (26.6) |
| | 1047 (18.8) | 562 (18.7) | 107 (21.1) | 102 (19.4) | 276 (18.0) |
| Strong | 1140 (20.5) | 624 (20.7) | 127 (25.0) | 124 (23.6) | 265 (17.3) |
| Overall           | US      | NY       | LA       | AU      |
|-------------------|---------|----------|----------|---------|
| (N=5573)          | (N=3010)| (N=507)  | (N=525)  | (N=1531)|
| **Concerns Related to COVID-19 and Mitigation Strategies** |         |          |          |         |
|                   |         |          |          |         |
| **Degree, if any, of concern about the following—No. (%)** |         |          |          |         |
| Social or physical isolation                      |         |          |          |         |
| Moderate          | 1302    | 704      | 122      | 109     |
| Strong            | 961     | 504      | 83       | 107     |
| Extreme           | 974     | 526      | 108      | 101     |
| Sense of purpose                                         |         |          |          |         |
| Moderate          | 1270    | 662      | 128      | 117     |
| Strong            | 817     | 443      | 66       | 78      |
| Extreme           | 690     | 352      | 73       | 82      |
| Personal financial loss                                 |         |          |          |         |
| Moderate          | 1050    | 563      | 81       | 111     |
| Strong            | 867     | 454      | 86       | 164     |
| Extreme           | 1260    | 642      | 130      | 267     |
| Possible economic recession                              |         |          |          |         |
| Moderate          | 1157    | 620      | 103      | 88      |
| Strong            | 1317    | 717      | 118      | 123     |
| Extreme           | 1942    | 1004     | 182      | 223     |
| Food and/or water insecurity                             |         |          |          |         |
| Moderate          | 1314    | 726      | 106      | 99      |
| Strong            | 764     | 404      | 83       | 73      |
| Extreme           | 755     | 395      | 88       | 83      |
| Open-endedness of the timeline of pandemic                |         |          |          |         |
| Moderate          | 1485    | 785      | 137      | 141     |
| Strong            | 1249    | 659      | 113      | 111     |
| Extreme           | 1290    | 706      | 133      | 146     |
| **Life Disruption due to COVID-19**                     |         |          |          |         |
| Spend considerable time consuming info—No. (%)         |         |          |          |         |
| No               | 3102    | 1689     | 294      | 287     |
| Yes              | 2471    | 1341     | 213      | 238     |
| Hours spent weekly—mean, sd                             | 23.2    | 20.9     | 23.7     | 20.9    |
| Sources of information                                  |         |          |          |         |
| Family           | 1022    | 551      | 82       | 90      |
| Workplace        | 637     | 341      | 50       | 53      |
| Healthcare providers                                   | 963     | 514      | 75       | 104     |
| Government officials                                   | 1619    | 847      | 137      | 150     |
| Media reports                                           | 1890    | 1013     | 167      | 184     |
| Social media                                            | 766     | 378      | 63       | 78      |
| Other                                                      | 100     | 58       | 5       | 13      |
| Social Life—No. (%)                                      |         |          |          |         |
| Not at all affected                                      | 662     | 411      | 38      | 45      |
| Disrupted                                                 | 4195    | 2183     | 393      | 417    |
| Moderately                                                | 1879    | 1050     | 138      | 156     |
| Extremely                                                 | 2316    | 1133     | 128      | 156     |
| Improved                                                  | 437     | 255      | 49      | 41      |
| Moderately                                                | 260     | 151      | 32      | 21      |
| Extremely                                                 | 177     | 104      | 17      | 20      |
| Family Life—No. (%)                                      |         |          |          |         |
| Not at all affected                                       | 2227    | 1269     | 166      | 204     |
| Disrupted                                                 | 2284    | 1160     | 233      | 214     |
| Moderately                                                | 1550    | 791      | 156      | 177     |
| Extremely                                                 | 746     | 411      | 72      | 72      |
| Improved                                                  | 488     | 263      | 37      | 35      |
| Moderately                                                | 257     | 148      | 25      | 49      |
| Work/Studies—No. (%)                                     |         |          |          |         |
| Not at all affected                                       | 1167    | 677      | 71       | 114     |
| Disrupted                                                 | 2422    | 1254     | 239      | 243     |
| Moderately                                                | 1287    | 687      | 121      | 127     |
| Extremely                                                 | 1135    | 587      | 118      | 122     |
| Improved                                                  | 405     | 225      | 48      | 41      |
| Moderately                                                | 234     | 127      | 22      | 25      |
| Productivity—No. (%)                                      |         |          |          |         |
| Not at all affected                                       | 2127    | 1197     | 162      | 191     |
| Disrupted                                                 | 2317    | 1195     | 225      | 223     |
| Moderately                                                | 1607    | 838      | 148      | 146     |
| Extremely                                                 | 710     | 357      | 77      | 77      |
| Improved                                                  | 799     | 446      | 84      | 85      |
| Moderately                                                | 536     | 286      | 55      | 62      |
| Extremely                                                 | 263     | 160      | 29      | 23      |

*For Life Disruption categories including Social Life, Family Life, Work/Studies, Productivity, Physical Activity, Sexual Activity, and Sleep Patterns, respondents had the option to select “does not apply.” These answers are not included in the table and account for differences between the sum of “Not at all affected,” “Disrupted,” and “Improved” and 100%.
### Life Disruption due to COVID-19

#### Physical activity—No. (%)

|                | Overall (N=5573) | US (N=3010) | NY (N=5057) | LA (N=525) | AU (N=1531) |
|----------------|------------------|-------------|-------------|------------|-------------|
| Not at all affected | 1859 (33.4)      | 1084 (36.0) | 122 (24.1)  | 159 (30.3) | 494 (32.3)  |
| Disrupted       | 2515 (45.1)      | 1245 (41.4) | 258 (50.9)  | 265 (50.5) | 747 (48.8)  |
| Moderately      | 1496 (26.8)      | 738 (24.5)  | 597 (118.7) | 147 (29.0) | 570 (36.1)  |
| Extremely       | 1019 (18.3)      | 597 (18.0)  | 50 (10.2)   | 111 (21.9) | 430 (27.8)  |
| Improved        | 627 (11.4)       | 484 (16.1)  | 83 (16.4)   | 75 (14.3)  | 185 (12.1)  |
| Moderately      | 551 (9.9)        | 66 (22.8)   | 50 (10.2)   | 49 (9.3)   | 120 (7.8)   |
| Extremely       | 276 (5.0)        | 33 (11.4)   | 29 (5.7)    | 26 (5.0)   | 65 (4.2)    |

#### Sexual activity—No. (%)

|                | Overall (N=5573) | US (N=3010) | NY (N=5057) | LA (N=525) | AU (N=1531) |
|----------------|------------------|-------------|-------------|------------|-------------|
| Not at all affected | 2546 (45.7)      | 1429 (47.5) | 190 (37.5)  | 212 (40.4) | 715 (46.7)  |
| Disrupted       | 1313 (23.6)      | 688 (22.2)  | 134 (26.4)  | 148 (28.2) | 363 (23.7)  |
| Moderately      | 641 (11.5)       | 340 (11.3)  | 51 (10.1)   | 64 (12.2)  | 186 (12.1)  |
| Extremely       | 672 (12.1)       | 328 (10.9)  | 83 (16.4)   | 84 (16.0)  | 177 (11.6)  |
| Improved        | 559 (10.0)       | 329 (10.9)  | 70 (13.8)   | 51 (9.7)   | 109 (7.1)   |
| Moderately      | 319 (5.7)        | 183 (6.1)   | 42 (8.3)    | 28 (5.3)   | 66 (4.3)    |
| Extremely       | 240 (4.3)        | 146 (4.9)   | 28 (5.5)    | 23 (4.4)   | 43 (2.8)    |

#### Sleep patterns—No. (%)

|                | Overall (N=5573) | US (N=3010) | NY (N=5057) | LA (N=525) | AU (N=1531) |
|----------------|------------------|-------------|-------------|------------|-------------|
| Not at all affected | 2447 (43.9)      | 1377 (45.7) | 187 (36.9)  | 201 (38.3) | 682 (44.5)  |
| Disrupted       | 2188 (38.3)      | 1128 (37.5) | 204 (40.2)  | 223 (42.6) | 618 (40.2)  |
| Moderately      | 1563 (28.0)      | 799 (26.0)  | 130 (25.6)  | 167 (31.5) | 467 (30.5)  |
| Extremely       | 625 (11.2)       | 329 (10.9)  | 74 (14.6)   | 73 (13.9)  | 149 (9.7)   |
| Improved        | 666 (12.0)       | 354 (11.8)  | 85 (16.8)   | 62 (11.8)  | 165 (10.8)  |
| Moderately      | 476 (8.5)        | 254 (8.4)   | 66 (13.0)   | 41 (7.8)   | 115 (7.5)   |
| Extremely       | 190 (3.4)        | 90 (3.2)    | 19 (3.7)    | 21 (4.0)   | 50 (3.3)    |

#### Specific Changes to Daily Activity Comparing Between October and December 2019 with Current Life

| Interactions with others—No. (%) | Overall (N=5573) | US (N=3010) | NY (N=5057) | LA (N=525) | AU (N=1531) |
|---------------------------------|------------------|-------------|-------------|------------|-------------|
| Not at all affected             | 330 (5.9)        | 188 (6.2)   | 33 (6.5)    | 32 (6.1)   | 77 (5.0)    |
| More virtual than face to face  | 484 (8.7)        | 271 (9.0)   | 50 (9.9)    | 47 (9.0)   | 116 (7.8)   |
| About equally virtual and face to face | 1588 (28.5)   | 903 (30.0)  | 122 (24.1)  | 139 (26.5) | 424 (27.7)  |
| More face to virtual than usual | 1605 (28.8)      | 838 (27.6)  | 135 (26.6)  | 174 (33.1) | 458 (29.9)  |
| Almost all face to face         | 1232 (22.1)      | 624 (20.7)  | 133 (26.2)  | 110 (21.0) | 365 (23.8)  |

#### Days of paid work per week

| Not changed—No. (%) | Overall (N=5573) | US (N=3010) | NY (N=5057) | LA (N=525) | AU (N=1531) |
|---------------------|------------------|-------------|-------------|------------|-------------|
| 1757 (31.5)         | 953 (31.7)       | 184 (36.3)  | 163 (31.0)  | 457 (29.8)  |
| Decreased—No. (%)   | 1529 (28.3)      | 799 (26.0)  | 130 (25.6)  | 167 (31.5) | 467 (30.5)  |
| Increased—No. (%)   | 242 (4.3)        | 147 (4.9)   | 19 (3.7)    | 18 (3.4)   | 58 (3.8)    |

#### Hours of paid work per week

| Not changed—No. (%) | Overall (N=5573) | US (N=3010) | NY (N=5057) | LA (N=525) | AU (N=1531) |
|---------------------|------------------|-------------|-------------|------------|-------------|
| 231 (4.1)           | 129 (4.3)        | 18 (3.8)    | 18 (3.4)    | 67 (4.4)   |

#### Commute—No. (%)

| Not changed | Overall (N=5573) | US (N=3010) | NY (N=5057) | LA (N=525) | AU (N=1531) |
|-------------|------------------|-------------|-------------|------------|-------------|
| 3328 (59.7) | 1785 (35.9)      | 337 (66.5)  | 327 (62.3)  | 879 (57.4) |

#### Weekly exercise frequency

| Not changed | Overall (N=5573) | US (N=3010) | NY (N=5057) | LA (N=525) | AU (N=1531) |
|-------------|------------------|-------------|-------------|------------|-------------|
| 2649 (47.5) | 1479 (49.1)      | 230 (45.4)  | 221 (42.1)  | 719 (47.0) |

*For Interactions with others, respondents had the option to select "does not apply." These answers are not included in the table and account for difference between the other summed categories and 100%.*
## Table 1

Survey responses are reported using descriptive statistics as indicated, including number of respondents (No.), percentage of respondents within a region (%), mean, and standard deviation (sd). For cases in which subgroups are stratified, the percentage of the total sample is reported first, and then percentage of the subgroup is reported in the second parentheses. For cases in which subgroups are not stratified, or...
where means and standard deviations are reported, the to the right is left blank. For the "Concerns Related to COVID-19 and Mitigation Strategies" section, only respondents rating moderate to extreme concern are reported (respondents reporting no or slight concern, or that the concern does not apply, are not shown). Country-level cumulative cases and deaths for US and AU were retrieved from World Health Organization COVID-19 Situational Reports.\textsuperscript{1,28-29} City-level cumulative cases and deaths for NY and LA were retrieved from The New York Times Coronavirus (Covid-19) Data in the United States project, based on reports from state and local health agencies.\textsuperscript{2}
### Table 2. Self-Reported Respondent Characteristics

| Characteristic                          | Overall (N=5573) | US (N=3010) | NY (N=507) | LA (N=525) | AU (N=1531) |
|-----------------------------------------|-----------------|------------|------------|------------|-------------|
| **Age (years)**                         |                 |            |            |            |             |
| Mean (SD)                               | 47.1 (17.3)     | 47.4 (16.9)| 46.7 (18.0)| 45.5 (17.0)| 45.6 (17.3) |
| Median                                  | 47              | 48         | 45         | 45         | 44.5        |
| Range                                   | 18-89           | 18-89      | 18-86      | 18-87      | 18-89       |
| **Gender—No. (%)**                      |                 |            |            |            |             |
| Female                                  | 3039 (54.5)     | 1683 (55.9)| 239 (47.1) | 275 (52.4) | 842 (55.0)  |
| Male                                    | 2530 (45.4)     | 1325 (44.0)| 268 (52.9) | 250 (47.6) | 687 (44.9)  |
| Other                                   | 4 (0.1)         | 2 (0.1)    | 0 (0.0)    | 0 (0.0)    | 2 (0.1)     |
| **Racea (All US, N=4042)—No. (%)**     |                 |            |            |            |             |
| White                                   | 3196 (79.1)     | 2423 (80.5)| 373 (73.6) | 400 (76.2) |
| Black or African American               | 428 (10.6)      | 313 (10.4) | 63 (12.4)  | 52 (9.9)   |
| Asian                                   | 256 (6.3)       | 192 (6.4)  | 32 (6.3)   | 32 (6.1)   |
| American Indian or Alaskan Native       | 80 (2.0)        | 60 (2.0)   | 9 (1.8)    | 11 (2.1)   |
| Native Hawaiian or Pacific Islander     | 22 (0.5)        | 17 (0.6)   | 3 (0.6)    | 2 (0.4)    |
| Other                                   | 182 (4.5)       | 104 (3.5)  | 38 (7.5)   | 40 (7.6)   |
| **Ethnicity (All US, N=4042)—No. (%)** |                 |            |            |            |             |
| Hispanic or Latino                      | 424 (10.5)      | 265 (8.8)  | 69 (13.6)  | 90 (17.1)  |
| Not Hispanic or Latino                  | 3618 (89.5)     | 2745 (91.2)| 438 (86.4) | 435 (82.9) |
| **Ancestryb (AU, N=1531)—No. (%)**     |                 |            |            |            |             |
| Australian                              | 556 (36.3)      |             |            |            |             |
| English                                 | 501 (32.7)      |             |            |            |             |
| Other European (Irish, Scottish, German, Italian, Greek, Dutch) | 346 (22.6) | | | | |
| Scottish                                | 95 (6.2)        |             |            |            |             |
| Chinese                                 | 90 (5.9)        |             |            |            |             |
| Indian                                  | 45 (2.9)        |             |            |            |             |
| Indigenous—Aboriginal Australians and Torres Strait Islanders | 16 (1.0) | | | | |
| Other                                   | 455 (29.8)      |             |            |            |             |
| **Highest degree or level of education completed—No. (%)** | | | | | |
| Less than high school                   | 107 (1.9)       | 61 (2.0)    | 4 (0.8)    | 5 (1.0)    | 37 (2.4)    |
| High school or equivalent               | 1257 (22.6)     | 524 (17.4)  | 81 (16.0)  | 61 (11.6)  | 591 (38.6)  |
| Some college                            | 1444 (25.9)     | 910 (30.2)  | 121 (23.9) | 157 (29.9) | 256 (16.7)  |
| Bachelor's degree (4-year) or equivalent| 1806 (32.4)     | 927 (30.8)  | 159 (31.4) | 212 (40.4) | 508 (33.2)  |
| Doctoral or professional degree         | 917 (16.5)      | 567 (18.8)  | 137 (27.0) | 88 (16.8)  | 125 (8.2)   |
| Prefer not to say                       | 42 (0.8)        | 21 (0.7)    | 5 (1.0)    | 2 (0.4)    | 14 (0.9)    |

*a* For the US sample, respondents had the option to select more than one racial affiliation.

*b* For the AU sample, respondents had the option to select up to two ancestral affiliations. The ‘Other’ category includes Filipino, Vietnamese, Lebanese, Hmong, Kurdish, Maori, and Australian South Sea Islander.
| Characteristic                          | Overall (N=5573) | US (N=3010) | NY (N=507) | LA (N=525) | AU (N=1531) |
|----------------------------------------|------------------|-------------|------------|------------|-------------|
| **Marital status—No. (%)**             |                  |             |            |            |             |
| Married                                | 2724 (48.9)      | 1567 (52.1) | 231 (45.6) | 226 (43.0) | 700 (45.7)  |
| Living with partner                    | 533 (9.6)        | 241 (8.0)   | 43 (8.5)   | 51 (9.7)   | 198 (12.9)  |
| Separated                              | 92 (1.7)         | 32 (1.1)    | 7 (1.4)    | 2 (0.4)    | 51 (3.3)    |
| Divorced                               | 490 (8.8)        | 291 (9.7)   | 40 (7.9)   | 46 (8.8)   | 113 (7.4)   |
| Widowed                                | 178 (3.2)        | 109 (3.6)   | 12 (2.4)   | 21 (4.0)   | 36 (2.4)    |
| Never married                          | 1490 (26.7)      | 739 (24.6)  | 165 (32.5) | 169 (32.2) | 417 (27.2)  |
| Prefer not to say                      | 66 (1.2)         | 31 (1.0)    | 9 (1.8)    | 10 (1.9)   | 16 (1.0)    |
| **2019 household income (USD)—No. (%)**|                  |             |            |            |             |
| Less than $24,999                      | 940 (16.9)       | 454 (15.1)  | 57 (11.2)  | 67 (12.8)  | 362 (23.6)  |
| $25,000 to $49,999                     | 1296 (23.3)      | 641 (21.3)  | 88 (17.4)  | 88 (16.8)  | 479 (31.3)  |
| $50,000 to $99,999                     | 1723 (30.9)      | 989 (32.9)  | 139 (27.4) | 164 (31.2) | 431 (28.2)  |
| $100,000 to $199,999                   | 1054 (18.9)      | 657 (21.8)  | 151 (29.8) | 134 (25.5) | 112 (7.3)   |
| More than $200,000                     | 229 (4.1)        | 132 (4.4)   | 41 (8.1)   | 42 (8.0)   | 14 (0.9)    |
| Prefer not to say                      | 331 (5.9)        | 137 (4.6)   | 31 (6.1)   | 30 (5.7)   | 133 (8.7)   |
| **2019 employment status—No. (%)**    |                  |             |            |            |             |
| Employed full-time                     | 2245 (40.3)      | 1284 (42.7) | 246 (48.5) | 217 (41.3) | 498 (32.5)  |
| Employed part-time                     | 760 (13.6)       | 338 (11.2)  | 63 (12.4)  | 61 (11.6)  | 298 (19.5)  |
| Self-employed                          | 361 (6.5)        | 189 (6.3)   | 30 (5.9)   | 52 (9.9)   | 90 (5.9)    |
| Student                                | 337 (6.0)        | 147 (4.9)   | 30 (5.9)   | 36 (6.9)   | 124 (8.1)   |
| Retired                                | 1268 (22.8)      | 734 (24.4)  | 101 (19.9) | 110 (21.0) | 323 (21.1)  |
| Unemployed                             | 714 (12.8)       | 384 (12.8)  | 45 (8.9)   | 55 (10.5)  | 230 (15.0)  |
| **Political ideology—No. (%)**         |                  |             |            |            |             |
| Very liberal                           | 701 (12.6)       | 410 (13.6)  | 97 (19.1)  | 94 (17.9)  | 100 (6.5)   |
| Slightly liberal                       | 1121 (20.1)      | 586 (19.5)  | 107 (21.1) | 129 (24.6) | 299 (19.5)  |
| Neither liberal nor conservative        | 1465 (26.3)      | 727 (24.2)  | 122 (24.1) | 126 (24.0) | 490 (32.0)  |
| Slightly conservative                  | 1097 (19.7)      | 621 (20.6)  | 80 (15.8)  | 84 (16.0)  | 312 (20.4)  |
| Very conservative                      | 701 (12.6)       | 484 (16.1)  | 60 (11.8)  | 58 (11.0)  | 99 (6.5)    |
| Apolitical and/or prefer not to say    | 488 (8.8)        | 182 (6.0)   | 41 (8.1)   | 34 (6.5)   | 231 (15.1)  |

**Table 2.** Self-reported characteristics overall and in quota samples collected in the US, NY, LA, and AU. For age, mean (standard deviation), median, and range are shown per sample. For all other characteristics, the number and percentage of respondents are reported by cohort. Race and ethnicity (US, NY, LA) or ancestry (AU) were reported in based on questions culturally adapted to match the characteristic data collected in the 2010 United States and 2016 Australian Census, respectively.