Supplemental Table 1. Comparison of participating sample to benchmark estimates— COVID Experiences Survey, United States, October 2020 – May 2021

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| --- | --- | --- |
|  | Wave 1 (Oct – Nov 2020) | Wave 2 (March – May 2021) |
|  | Unweighted % | Weighted % | Benchmark %a | Unweighted % | Weighted % | Benchmark %a |
| Household Income  |  |  |  |  |  |  |
|  Less than $29,999 | 19.4 | 22.3 | 10.6 | 18.6 | 23.2 | 10.6 |
|  $30,000 to $74,999 | 37.5 | 37.3 | 28.7 | 36.2 | 36.8 | 28.7 |
|  $75,000 to $124,999 | 27.8 | 24.4 | 24.9 | 29.4 | 24.3 | 24.9 |
|  $125,000 Plus | 15.2 | 16.1 | 35.8 | 15.9 | 15.7 | 35.8 |
| Age |  |  |  |  |  |  |
|  18 - 34 | 28.7 | 26.5 | 26.5 | 26.4 | 26.5 | 26.5 |
|  35 - 49 | 59.2 | 64.1 | 64.1 | 61.1 | 64.1 | 64.1 |
|  50 + | 12.1 | 9.4 | 9.4 | 12.4 | 9.4 | 9.4 |
| Race/Ethnicity |  |  |  |  |  |
|  White | 66.6 | 55.2 | 55.2 | 68.8 | 55.2 | 55.2 |
|  Black | 11.2 | 11.3 | 11.3 | 9.9 | 11.3 | 11.3 |
|  Hispanic | 12.3 | 23.1 | 23.1 | 11.3 | 23.1 | 23.1 |
|  Asian/Pacific Islander | 3.9 | 5.9 | 8.2 | 3.8 | 5.0 | 8.2 |
|  Others | 6.0 | 4.5 | 2.2 | 6.1 | 5.4 | 2.2 |
| Education Status |  |  |  |  |  |
|  Less than High School | 3.7 | 9.7 | 9.7 | 3.0 | 9.7 | 9.7 |
|  High School Equivalent | 14.2 | 24.2 | 24.2 | 14.5 | 24.2 | 24.2 |
|  Some College/Associate Degree | 37.3 | 25.2 | 25.2 | 35.7 | 25.2 | 25.2 |
|  Bachelor’s Degree | 26.7 | 24.8 | 24.5 | 27.2 | 24.0 | 24.5 |
|  Graduate Degree | 18.0 | 16.1 | 16.5 | 19.5 | 16.9 | 16.5 |
| Household Ownership |  |  |  |  |  |
|  Owner Occupied | 63.9 | 63.7 | 68.8 | 65.1 | 61.4 | 68.8 |
|  Renter Occupied/Other | 36.1 | 36.3 | 31.2 | 34.9 | 38.6 | 31.2 |
| Marital Status |  |  |  |  |  |
|  Currently Married | 71.7 | 70.5 | 79.3 | 74.0 | 70.7 | 79.3 |
|  Separated/Divorced/Widowed/Never Married/ Living with a Partner | 28.3 | 29.5 | 20.7 | 26.0 | 29.3 | 20.7 |
| Sex |  |  |  |  |  |  |
|  Male | 32.7 | 44.6 | 44.6 | 33.3 | 44.6 | 44.6 |
|  Female | 67.3 | 55.4 | 55.4 | 66.7 | 55.4 | 55.4 |

aBenchmark estimates represent the population of parents of children ages 5-12 in the United States, and were obtained from the March 2020 Census Bureau’s Current Population Survey.

Supplemental Table 2. Study measures, questionnaire wording, and operationalization

|  |  |  |
| --- | --- | --- |
| Construct | Question or instrument  | Operationalization |
| Depressive symptoms  | PROMIS® Parent Proxy Item Bank v2.0 – Depressive Symptoms – Short Form 6a excluding one item (“felt lonely”)  | T-score (continuous)  |
| Anxiety symptoms  | PROMIS Parent Proxy Item Bank v2.0 – Anxiety – Short Form 8a | T-score (continuous)  |
| Psychological stress symptoms  | PROMIS Parent Proxy Item Bank v1.0 - Psychological Stress Experiences – Short Form 4a | T-score (continuous)  |
| Elevated poor mental health symptoms  | -PROMIS® Parent Proxy Item Bank v2.0 – Depressive Symptoms – Short Form 6a minus one question (“felt lonely”) -PROMIS Parent Proxy Item Bank v2.0 – Anxiety – Short Form 8a)-PROMIS Parent Proxy Item Bank v1.0 - Psychological Stress Experiences – Short Form 4a) | T-scores≥65 (i.e., 1.5 SDs higher than the mean of the reference population) for depression, anxiety, or psychological stress vs. no T-scores≥65 for depression, anxiety, and psychological stress |
| Sex of child  | Please specify your child’s sex.* Male
* Female
* Other – please specify:
 | Male vs. female  |
| Age of child  | How old is [child’s name]?   | 5 to 8 vs. 9 to 12 years |
| Emotional, mental, developmental, behavioral condition for child | Does [child’s name] have any kind of emotional, mental, developmental, or behavioral condition for which they need or get treatment, therapy, or counseling? * Yes
* No
 | Yes vs. no |
| Physical condition for child | Does [child’s name] have any kind of physical condition or delay for which they need or get special therapy such as occupational, physical, or speech therapy?* Yes
* No
 | Yes vs. no |
| Medical condition  | Prior to the COVID-19 outbreak, did [child’s name] have a medical condition that put them at risk for severe illness from COVID-19? Examples include a breathing or lung problem, heart condition, suppressed immune system, diabetes, high blood pressure, congenital health disease, obesity, or some other significant health problem or medically complex condition.* Yes
* No
 | Yes vs. no |
| Race/ethnicity of respondent  | Race/ethnicity was based on information gathered during the initial recruitment of participants into the AmeriSpeak® national panels. Participants self-reported their Hispanic ethnicity and race, which were categorized as White, non-Hispanic; Black, non-Hispanic; Hispanic/Latinx; or another race non-Hispanic inclusive of Asian, American Indian or Alaska Native, Native Hawaiian or Pacific Islander, some other race, or selection of more than one race category. | White, non-Hispanic; Black, non-Hispanic; Hispanic; Other, non-Hispanic  |
| Employment status of respondent  | Participants self-reported current employment status selecting from the following response options: Working as a paid employee; working self-employed; not working-on temporary layoff from a job; not working looking for work; not working retired; not working disabled; not working other | Working as paid employee; Working self employed vs. Not working on temporary layoff from a job; not working looking for work; not working retired; not working disabled; not working other . = missing  |
| Annual household income  | Participants self-reported annual household income selecting from the following options: Less than $5,000; $5,000 to $9,999; $10,000 to $14,999; $15,000 to $19,999; $20,000 to $24,999; $25,000 to $29,999; $30,000 to $34,999; $35,000 to $39,999; $40,000 to $49,999; $50,000 to $59,999; $60,000 to $74,999; $75,000 to $84,999; $85,000 to $99,999; $100,000 to $124,999; $125,000 to $149,999; $150,000 to $174,999; $175,000 to $199,999; $200,000 or more | <$30,000 vs. ≥$30,000  |
| Marital status of respondent  | Are you …?   * Married
* Widowed
* Divorced
* Separated
* Never married
* Living with partner
 | Married or living with partner vs. Never married, divorced, widowed, or separated |
| Persistent economic stressors  | Since the COVID-19 outbreak began (February 2020), how frequently have you experienced the following?1. Worry whether your food would run out before you got money to buy more
2. Trouble paying the rent, mortgage, or utilities like electricity

RESPONSE OPTIONS: * Often
* Sometimes
* Never
 | Yes (often for A or B) vs. No (not “often” for A and B) |
| Persistent Household conflict  | Since the COVID-19 outbreak began (February 2020), how frequently have you experienced the following?Household conflict with spouse/partner or other adult family membersRESPONSE OPTIONS: * Often
* Sometimes
* Never
 | Yes (often) vs. No (sometimes, never)  |
| COVID-19 related death  | As a result of the COVID-19 outbreak, have you experienced or are you experiencing an increase in any of the following?Death or loss of a loved oneRESPONSE OPTIONS: * Yes
* No
 | Yes vs. no  |
| Parental emotional strain  | Overall, how much emotional distress like increased sadness, anxiety, and worry have you experienced related to the COVID-19 outbreak?* A lot of distress
* Moderate distress
* Little distress
* No distress
 | A lot of distress vs. moderate, little, no distress  |
| In-person schooling | During the current school year (2020/2021), how has [child’s name] attended school? Please select all that apply. RESPONSE OPTIONS: * In-person full time
* Virtual/online full-time
* In-person PART-TIME and virtual PART-TIME (meaning in school several days a week or several weeks each month, and virtual learning the other days/weeks)
* Other, please specify:
 | Any in-person (in-person full time or in-person part-time and virtual part-time) vs. no in-person (virtual/online full-time). Other responses categorized as missing.   |
| Protective factors |  |  |
| Family resilience  | In the past month, when [child’s name] faced problems how likely were you to do the following?A. Talk together about what to doB. Work together to solve the problemsC. Stay hopeful even in difficult timesRESPONSE OPTIONS: * All of the time
* Most of the time
* Some of the time
* None of the time
 | Recode responses on a 4-point scale from 0-“none of the time” to 3-“all of the time.” Responses summed to create a continuous measure of family resilience cohesion ranging from 0 to 9. The continuous measure was further categorized into low (0 to 3), medium (4 to 6), and high scores (7 to 9).  |
| Daily routines for child | In the past month, how likely were you to do the following to help [child’s name] cope with stress related to the COVID-19 outbreak? Help [child’s name] establish and maintain a  daily routine RESPONSE OPTIONS: * Often
* Sometimes
* Rarely
* Never
 | Often vs. Sometimes, rarely, never |
| Neighborhood built environment  | In your neighborhood, is/are there…?A. Sidewalks or walking pathsB. A park or playground RESPONSE OPTIONS: * Yes
* No
* Don’t know
 | Either sidewalks, walking paths, park or playgrounds vs. neither sidewalks, walking paths, park or playgrounds |
| Neighborhood cohesion | Please rate how much you agree or disagree with the following statements about your neighborhood or community.A. People in this neighborhood help each other outB. We watch out for each other’s children in this neighborhood C. [child’s name] is safe in our neighborhoodD. When I encounter difficulties, I know where to go for help in my communityE. I like my neighborhoodRESPONSE OPTIONS: * Strongly Agree
* Agree
* Neither agree nor disagree
* Disagree
* Strongly Disagree
 | Recode responses on a 5-point scale from 0-“strongly disagree” to 4-“strongly agree.” Responses summed to create a continuous measure of neighborhood cohesion ranging from 0 to 20. The continuous measure was further categorized into low (0 to 6), medium (7 to 15), and high scores (16 to 20).  |

Supplemental Table 3. Changes in children’s symptoms of anxiety, depression, and psychological stressby demographic characteristics from Wave 1 to Wave 2a among children ages 5–12 — COVID Experiences Survey, United States, October 2020 – May 2021

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Mean Anxiety score at W1 | Δ Anxiety score W1 to W2 (95% CI)b | p-valuec | Mean Depression score at W1 | Δ Depression score W1 to W2 (95% CI)b | p-valuec | Mean Psychological stress score at W1 | Δ Psychological stress score W1 to W2 (95% CI)b | p-valuec |
| Total | 47.9 | -1.8 (-2.5, -1.0) | <.001 | 49.0 | -1.0 (-1.7, -0.3) | .006 | 49.9 | -0.5 (-1.4, 0.4)  | .29 |
| **Child characteristics**  |  |  |  |  |  |  |  |  |  |
| Sex |  |  | .83 |  |  | .31 |  |  | .35 |
|  Male | 47.9 | -1.9 (-3.1, -0.7) |  | 48.6 | -0.7 (-1.5, 0.1) |  | 49.9 | -0.2 (-1.3, 1.0) |  |
|  Female | 48.2 | -1.7 (-2.6, -0.8) |  | 49.3 | -1.3 (-2.4, -0.3) |  | 50.1 | -0.8 (-1.8, 0.3) |  |
| Age group, yrs |  |  | .04 |  |  | .34 |  |  | .95 |
|  5-8 | 47.2 | -2.5 (-3.4, -1.6) |  | 47.7 | -1.4 (-2.2, -0.6) |  | 47.9 | -0.5 (-1.5, 0.5) |  |
|  9-12 | 48.7 | -1.3 (-2.3, -0.3) |  | 50.0 | -0.7 (-1.9, 0.4) |  | 51.7 | -0.5 (-1.6, 0.7) |  |
| Emotional, mental, developmental, behavioral condition for childd |  |  | .54 |  |  | .87 |  |  | .87 |
|  Yes | 53.2 | -2.3 (-4.0, -0.5) |  | 53.2 | -1.1 (-2.9, 0.7) |  | 55.1 | -0.6 (-2.3, 1.1) |  |
|  No | 46.9 | -1.6 (-2.5, -0.8) |  | 48.0 | -0.9 (-1.7, -0.1) |  | 48.8 | -0.4 (-1.4, 0.5) |  |
| Physical condition for childe |  |  | .85 |  |  | .93 |  |  | .24 |
|  Yes | 51.8 | -1.5 (-3.8, 0.7) |  | 51.7 | -1.1 (-3.4, 1.3) |  | 53.4 | -1.5 (-3.5, 0.4) |  |
|  No | 47.6 | -1.8 (-2.6, -1.0) |  | 48.7 | -1.0 (-1.7, -0.2) |  | 49.6 | -0.3 (-1.3, 0.6) |  |
| Medical conditionf |  |  | .63 |  |  | .45 |  |  | .50 |
|  Yes | 51.4 | -1.2 (-3.5, 1.1) |  | 51.2 | -0.2 (-2.5, 2.2) |  | 52.4 | 0.2 (-2.1, 2.6) |  |
|  No | 47.5 | -1.9 (-2.7, -1.0) |  | 48.6 | -1.1 (-1.9, -0.4) |  | 49.7 | -0.6 (-1.6, 0.3) |  |
| **Parent and household characteristics**  |  |  |  |  |  |  |  |  |  |
| Race/ethnicity  |  |  | .13 |  |  | .61 |  |  | .07 |
|  White, non-  Hispanic  | 48.4 | -2.0 (-2.6, -1.5) |  | 49.2 | -1.0 (-1.6, -0.3) |  | 50.6 | -0.8 (-1.4, -0.1) |  |
|  Black, non- Hispanic  | 46.4 | 0.5 (-1.6, 2.7) |  | 48.5 | -0.7 (-2.3, 1.0) |  | 48.1 | 1.8 (-0.2, 3.8) |  |
|  Hispanic  | 48.0 | -2.1 (-4.6, 0.4) |  | 48.2 | -0.8 (-3.1, 1.6) |  | 49.5 | -0.6 (-3.0, 1.7) |  |
|  Other, non- Hispanic  | 48.1 | -2.1 (-3.7, -0.5) |  | 50.0 | -2.0 (-3.6, -0.4) |  | 50.2 | -1.0 (-3.2, 1.2) |  |
| Annual household income  |  |  | .83 |  |  | .75 |  |  | .31 |
|  <$30,000 | 47.7 | -1.6 (-3.5, 0.3) |  | 49.2 | -1.3 (-3.5, 0.9) |  | 48.9 | 0.3 (-1.5, 2.2) |  |
|  ≥$30,000 | 48.2 | -1.8 (-2.7, -1.0) |  | 48.9 | -0.9 (-1.6, -0.2) |  | 50.4 | -0.7 (-1.7, 0.3) |  |
| **COVID-19 related experiences**   |  |   |  |  |  |  |  |  |  |
| Persistent economic stressors   |  |   | 0.049 |  |   | 0.08 |  |   | 0.83 |
|    Yes  | 52.3 | -3.5 (-5.3, -1.7) |   | 52.6 | -2.8 (-5.1, -0.5) |   | 52.9 | -0.7 (-2.3, 1.0) |   |
|    No  | 47.1 | -1.4 (-2.3, -0.4) |   | 48.1 | -0.6 (-1.3, 0.1) |   | 49.4 | -0.4 (-1.5, 0.7) |   |
| Household conflict   |  |   | 0.17  |  |   | 0.08 |  |   | 0.83 |
|    Yes  | 56.3 | -3.6 (-6.4, -0.9)  |   | 57.2 | -4.3 (-8.2, -0.3)  |   | 56.8 | -0.8 (-3.7, 2.2)  |   |
|    No  | 47.2 | -1.6 (-2.4, -0.8)  |   | 48.1 | -0.6 (-1.3, 0.0)  |   | 49.3 | -0.4 (-1.4, 0.5)  |   |
| COVID-19 related death   |  |   | 0.90  |  |   | 0.28 |  |   | 0.99  |
|    Yes  | 49.9 | -1.9 (-4.5, 0.6)  |   | 51.2 | -2.6 (-5.8, 0.6)  |   | 50.2 | -0.5 (-3.0, 2.0)  |   |
|    No  | 47.8 | -1.8 (-2.6, -0.9)  |   | 48.7 | -0.8 (-1.4, -0.1)  |   | 50.0 | -0.5 (-1.5, 0.6)  |   |
| Parental emotional strain   |  |   | 0.07  |  |   | 0.08 |  |   | 0.39 |
|    Yes  | 54.9 | -3.2 (-4.7, -1.7)  |   | 54.8 | -2.5 (-4.3, -0.7)  |   | 55.4 | -1.2 (-2.9, 0.5)  |   |
|    No  | 46.9 | -1.5 (-2.4, -0.7)  |   | 48.0 | -0.7 (-1.5, 0.0)  |   | 49.2 | -0.4 (-1.4, 0.6)  |   |
| Mode of school instruction   |  |   | 0.86 |  |   | 0.78 |  |   | 0.62 |
|    Any in-person   | 48.1 | -1.9 (-2.9, -0.9)  |   | 49.0 | -1.1 (-1.8, -0.3) |   | 50.0 | -0.6 (-1.8, 0.5) |   |
|    No in-person   | 48.3 | -2.0 (-3.5, -0.6)  |   | 49.2 | -1.3 (-2.7, 0.1)  |   | 50.0 | -0.2 (-1.6, 1.1) |   |
| **Protective factors**  |  |   |   |  |   |   |  |   |   |
| Family resilience   |  |   | 0.63  |  |   | 0.16  |  |   | 0.64  |
|  Low | 49.3 | 0.2 (-4.4, 4.8)  |   | 49.3 | 1.4 (-1.3, 4.1)  |   | 52.1 | 0.2 (-3.6, 3.9)  |   |
|    Mid | 50.3 | -1.8 (-3.2, -0.5)  |   | 50.9 | -1.0 (-2.0, 0.0)  |   | 52.1 | -1.0 (-2.3, 0.3)  |   |
|    High | 46.7 | -2.0 (-2.9, -1.0)  |   | 47.9 | -1.3 (-2.3, -0.2)  |   | 48.6 | -0.3 (-1.4, 0.8)  |   |
| Daily routines for child  |  |   | 0.53 |  |   | 0.19 |  |   | 0.17 |
|    Yes  | 46.8 | -1.5 (-2.3, -0.7)  |   | 47.7 | -0.6 (-1.2, 0.1)  |   | 48.8 | 0.1 (-1.0, 1.2)  |   |
|    No  | 49.6 | -2.1 (-3.7, -0.6)  |   | 50.6 | -1.5 (-2.9, -0.2)  |   | 51.6 | -1.2 (-2.8, 0.3)  |   |
| Neighborhood built environment   |  |   | 0.60  |  |   | 0.97  |  |   | 0.78 |
|    Either sidewalks,     walking paths, park     or playgrounds  | 48.4 | -2.0 (-2.7, -1.3)  |   | 49.1 | -1.1 (-1.8, -0.3)  |   | 50.1 | -0.6 (-1.6, 0.3)  |   |
|    Neither sidewalks,        walking paths, park     or playgrounds  | 46.9 | -1.5 (-3.1, -0.0)  |   | 48.5 | -1.0 (-3.0, 0.9)  |   | 50.0 | -0.4 (-2.0, 1.2)  |   |
| Neighborhood cohesion    |  |   | 0.27 |  |   | 0.39  |  |   | 0.60 |
|   Low | 50.4 | 0.5 (-3.4, 4.4)  |  | 51.9 | 1.5 (-2.8, 5.7)  |   | 53.5 | -2.3 (-7.0, 2.3)  |   |
|   Mid  | 48.4 | -2.2 (-3.2, -1.2)  |  | 48.8 | -0.9 (-1.6, -0.2)  |   | 50.0 | -0.3 (-1.4, 0.9)  |   |
|   High  | 47.0 | -1.2 (-2.4, -0.0)  |  | 49.0 | -1.5 (-3.0, 0.0)  |   | 49.8 | -0.9 (-2.3, 0.6)  |   |

aWave 1 (W1) surveys were administered between October 8 and November 13, 2020 and Wave 2 (W2) surveys were administered between March 24, 2021 and May 7, 2021.

bLinear regression models were fit with changes in anxiety, depression, and psychological stress t-scores from W1 to W2 as the outcomes, adjusting for each demographic characteristic separately. Model-based marginal probabilities of changes in mean depression, anxiety, and psychological stress scores from W1 to W2 by demographic characteristics are presented, representing the average change in t-scores for the population and by subgroups.

cWald F test used to determine if changes in depression, anxiety, and psychological stress t-scores from W1 to W2 varied by demographic characteristics. P-values presented.

dBased on affirmative response to the question: “Does [child’s name] have any kind of emotional, mental, developmental, or behavioral condition for which they need or get treatment, therapy, or counseling?”

eBased on affirmative response to the question: “Does [child’s name] have any kind of physical condition or delay for which they need or get special therapy such as occupational, physical, or speech therapy?”

fBased on affirmative response to the question: “Prior to the COVID-19 outbreak, did [child’s name] have a medical condition that put them at risk for severe illness from COVID-19?”