**Supplementary Appendix to:**

**Experiences of COVID-19 policy measures and mental health in Uganda: cross-sectional evidence from a mobile phone-based population survey**

**Figure S1: Histogram of sampling weights**



**Figure S2: Weighted distributions of PHQ-4, PHQ-2, and GAD-2 scores in the study population**



Notes: Figure shows the distribution of PHQ-4, PHQ-2, and GAD-2 scores in the study population. Histograms reflect sample weighting. The distribution of PHQ-4 total scores is shown in blue, with darker shades representing moderate and severe distress, respectively. The distribution of PHQ-2 scores is shown in green, with the darker shade indicating elevated scores. The distribution of GAD-2 scores is shown in red, with the darker shade indicating elevated scores.

**Table S1: Survey questions and response options**

|  |  |
| --- | --- |
| **Questions** | **Response options** |
| How old are you?  | If you are under 18 years, press 1If you are between 18 to 24 years, press 2If you are between 25 to 34 years, press 3If you are between 35 to 44 years, press 4 If you are 45 years or older, press 5 |
| Do you live in an urban area (like a city or town) or a rural area (like a village)? | If you live in a City or town, press 1If you live in the Village, press 2If you do not know, press 9 |
| What is your gender? | If you are Male, press 1If you are Female, press 2 |
| What is your marital status? | If you have never married, press 1If you are married or living with your partner, press 2If you are Divorced/separated/widowed, press 3If you do not know, press 9 |
| *Please think about the last 14 days, from two weeks ago until today. We would like to know how often during this 14-day period you were bothered by the following problems. There are four possible answer choices for each question – “0-1 days”, “2-6 days”, “7-11 days” or “12-14 days”.* |
| In the last 14 days, how many days have you had little interest or enjoyment in doing things? | If it was between 0-1 days, press 1If it was between 2-6 days, press 2If it was between 7-11 days, press 3If it was between 12-14 days, press 4If you don't know, press 9 |
| In the last 14 days, how many days have you been feeling down, depressed or without hope? | If it was between 0-1 days, press 1If it was between 2-6 days, press 2If it was between 7-11 days, press 3If it was between 12-14 days, press 4If you do not know press 9 |
| In the last 14 days, how many days have you been feeling nervous, anxious, or on edge? | If it was between 0-1 days, press 1If it was between 2-6 days, press 2If it was between 7-11 days, press 3If it was between 12-14 days, press 4If you do not know, press 9 |
| In the last 14 days, how many days have you been unable to stop or control worrying? | If it was between 0-1 days, press 1If it was between 2-6 days, press 2If it was between 7-11 days, press 3If it was between 12-14 days, press 4If you do not know, press 9 |
| Do you have any long-term health issues such as diabetes, high blood pressure, heart disease, HIV, mental illness, or other? | If you do not have, press 1If you have, press 2If you don’t know, press 9 |
| *Now we would like to ask you about how COVID-19 has affected you.* |
| In the past 7 days, how many days have you stayed at home the whole day, without going out at all and without receiving any visitors? | If it was between 0-1 days, press 1If it was between 2-3 days, press 2If it was between 4-5 days, press 3If it was between 6-7 days, press 4If you do not know, press 9 |
| In the past 30 days, have you needed to care for a child who would normally be in school or day care? | If you have, press 1If you have not, press 2If you do not know, press 9 |
| In the past 30 days, have you or any other member of your household been unable to obtain medicine or medical care or treatment that was needed? | If you have been unable to obtain medicine or medical care, press 1If you have not had any problems obtaining medicine or medical care, press 2If no one in your household has needed any medicine or medical care, press 3If you do not know, press 9 |
| *For the next questions, think about the past months since March 20, 2020, the day the schools were closed.* |
| Since March 20th, 2020, have you experienced a change in income because of COVID-19 or related restrictions? | If you have experienced a large reduction in income, press 1If you have experienced a small reduction in income, press 2If you have not experienced any change in income, press 3If you have experienced a gain in income, press 4If you do not know, press 9 |
| Since March 20th, 2020, have you had to go and live somewhere else because of COVID-19 or related restrictions?  | If you have, press 1If you have not, press 2If you do not know, press 9 |
| At the moment, how much do you worry about you or someone close to you getting COVID-19?  | If you don’t worry at all, press 1If you worry some about it, press 2If you worry a lot about it, press 3If you do not know, press 9 |
| At the moment, how much do you worry about getting into trouble with the police or LDU for violating lockdown measures related to coronavirus, such as the curfew? | If you don’t worry at all, press 1If you worry some about it, press 2If you worry a lot about it, press 3If you do not know, press 9 |
| What is the highest level of education you ever completed? | If it is Less than primary, press 1If you completed primary, press 2If you completed secondary, press 3If you completed tertiary, press 4If you have had no formal schooling, press 5If you do not know, press 9 |
| What was your household’s main source of income before March 20th 2020, that is before the schools closed due to COVID-19? | If it is farming, livestock, fishing, press 1If it is Business income (This includes income from business such as any type of non-farm trade, shops, saloons etc) , press 2If it is from wage-employment, press 3If it is from Remittances, press 4If it is from other sources (such as: government assistance; assistance from NGO or charitable organization; pension; savings; income from property; investment; other), press 5If you do not know, press 9 |
| How many children (under 18) do you live with under the same roof? | If there are no children, press 1If they are 1 or 2 children, press 2If they are 3 or more children, press 3If you do not know, press 9 |
| What region are you currently in? | If it is the Central region, press 1If it is the Eastern region, press 2If it is the East central region, press 3If it is the Northern region, press 4If it is the north Eastern/ Karamoja region, press 5If it is the North west / west Nile region, press 6If it is the Western region, presss 7If it is the Southwestern region, press 8 |

**Table S2: Demographic characteristics of respondents who dropped out of the survey**

|  |  |  |  |
| --- | --- | --- | --- |
|   | **Drop-out sample** |  | **Mental health sample** |
| **Variable** | **No.** | **%** |  | **No.** | **%** |
| **Age of respondent** |  |  |  |  |  |
| 18 to 24 years | 1064 | 56.9 |  | 2232 | 62.8 |
| 25 to 34 years | 421 | 22.5 |  | 922 | 25.9 |
| 35 to 44 years | 189 | 10.1 |  | 235 | 6.6 |
| 45 years or older | 196 | 10.5 |  | 164 | 4.6 |
| Total | 1870 | 100 |  | 3553 | 100 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| **Place of residence** |  |  |  |  |  |
| City or town | 441 | 28 |  | 990 | 28.2 |
| Village | 1133 | 72 |  | 2524 | 71.8 |
| Total | 1574 | 100 |  | 3514 | 100 |
|  |  |  |  |  |  |
| **Gender of respondent** |  |  |  |  |  |
| Female | 704 | 44.6 |  | 1750 | 49.2 |
| Male | 873 | 55.4 |  | 1804 | 50.8 |
| Total | 1577 | 100 |  | 3554 | 100 |
|  |  |  |  |  |  |
| **Marital status of respondent** |  |  |  |  |  |
| Divorced/separated/widowed | 96 | 6.7 |  | 193 | 5.5 |
| Have never married | 613 | 43 |  | 1544 | 44.3 |
| Married or living with partner | 718 | 50.3 |  | 1745 | 50.1 |
| Total | 1427 | 100 |   | 3482 | 100 |

Notes: Columns 1 and 2 of the table show the characteristics of respondents in rounds 2-4 of the survey who completed demographic questions (“drop-out sample”) which were asked at the beginning of the survey but who did not complete any mental health questions because they dropped out. Columns 3 and 4 show the same characteristics for those who remained in the survey and completed all mental health questions.

**Table S3: Unweighted sample demographics by month**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 12/2020 | 01/2021 | 02/2021 | 03/2021 | 04/2021 |
|  | N=495 | N=842 | N=890 | N=934 | N=905 |
| *Age Group* |  |  |  |  |  |
|  18 to 24 years | 279 (56.4%) | 506 (60.1%) | 555 (62.4%) | 573 (61.3%) | 623 (68.8%) |
|  25 to 34 years | 144 (29.1%) | 206 (24.5%) | 238 (26.7%) | 253 (27.1%) | 219 (24.2%) |
|  35 to 44 years | 39 (7.9%) | 70 (8.3%) | 60 (6.7%) | 57 (6.1%) | 48 (5.3%) |
|  45 years or older | 33 (6.7%) | 60 (7.1%) | 37 (4.2%) | 51 (5.5%) | 15 (1.7%) |
| *Place of Residence* |  |  |  |  |  |
|  City or town | 125 (25.4%) | 246 (29.5%) | 224 (25.5%) | 260 (28.1%) | 279 (31.1%) |
|  Village | 367 (74.6%) | 588 (70.5%) | 654 (74.5%) | 664 (71.9%) | 619 (68.9%) |
| *Gender* |  |  |  |  |  |
|  Female | 244 (49.3%) | 272 (32.3%) | 563 (63.3%) | 466 (49.9%) | 452 (49.9%) |
|  Male | 251 (50.7%) | 570 (67.7%) | 327 (36.7%) | 468 (50.1%) | 453 (50.1%) |
| *Marital Status* |  |  |  |  |  |
|  Divorced/separated/widowed | 21 (4.3%) | 39 (4.7%) | 45 (5.2%) | 58 (6.3%) | 52 (5.9%) |
|  Have never married | 197 (40.3%) | 423 (51.3%) | 377 (43.3%) | 373 (40.5%) | 402 (45.3%) |
|  Married or living with partner | 271 (55.4%) | 362 (43.9%) | 449 (51.5%) | 489 (53.2%) | 433 (48.8%) |
| *Language* |  |  |  |  |  |
| Ateso | 9 (1.8%) | 1 (0.1%) | 13 (1.5%) | 5 (0.5%) | 32 (3.5%) |
|  English | 44 (8.9%) | 762 (90.5%) | 69 (7.8%) | 94 (10.1%) | 101 (11.2%) |
|  Luganda | 293 (59.2%) | 59 (7.0%) | 644 (72.4%) | 507 (54.3%) | 533 (58.9%) |
| Lugbara | 3 (0.6%) | 0 (0.0%) | 2 (0.2%) | 5 (0.5%) | 2 (0.2%) |
|  Luo | 31 (6.3%) | 2 (0.2%) | 36 (4.0%) | 70 (7.5%) | 45 (5.0%) |
| Runyakitara | 115 (23.2%) | 18 (2.1%) | 126 (14.2%) | 253 (27.1%) | 192 (21.2%) |
| *Highest Education* |  |  |  |  |  |
|  No formal schooling | 18 (3.6%) | 19 (2.3%) | 24 (2.7%) | 37 (4.0%) | 24 (2.7%) |
|  Less than primary | 84 (17.0%) | 85 (10.2%) | 130 (14.6%) | 170 (18.2%) | 148 (16.4%) |
|  Completed primary | 211 (42.7%) | 292 (35.0%) | 454 (51.1%) | 381 (40.9%) | 382 (42.4%) |
|  Completed secondary | 132 (26.7%) | 314 (37.6%) | 197 (22.2%) | 251 (26.9%) | 249 (27.7%) |
|  Completed tertiary | 49 (9.9%) | 124 (14.9%) | 83 (9.3%) | 93 (10.0%) | 97 (10.8%) |
| *Household's Main Income Source before March 2020* |  |  |  |  |  |
|  Business income | 162 (33.5%) | 332 (40.4%) | 295 (33.6%) | 290 (31.5%) | 296 (33.0%) |
|  Farming, livestock, fishing | 230 (47.6%) | 330 (40.1%) | 429 (48.9%) | 452 (49.0%) | 425 (47.4%) |
|  Remittances | 21 (4.3%) | 18 (2.2%) | 31 (3.5%) | 50 (5.4%) | 45 (5.0%) |
|  Wage-employment | 51 (10.6%) | 101 (12.3%) | 88 (10.0%) | 100 (10.8%) | 95 (10.6%) |
|  Other sources | 19 (3.9%) | 41 (5.0%) | 34 (3.9%) | 30 (3.3%) | 35 (3.9%) |
| *Region* |  |  |  |  |  |
|  Central | 132 (26.7%) | 256 (30.4%) | 284 (31.9%) | 216 (23.1%) | 263 (29.1%) |
|  Eastern | 222 (44.8%) | 318 (37.8%) | 404 (45.4%) | 406 (43.5%) | 389 (43.0%) |
|  Northern | 64 (12.9%) | 82 (9.7%) | 95 (10.7%) | 153 (16.4%) | 118 (13.0%) |
|  Western | 77 (15.6%) | 186 (22.1%) | 107 (12.0%) | 159 (17.0%) | 135 (14.9%) |
| *Number of Children in Household* |  |  |  |  |  |
|  No children | 84 (17.1%) | 191 (23.0%) | 218 (24.5%) | 235 (25.2%) | 243 (27.0%) |
|  1 or 2 children | 232 (47.2%) | 351 (42.3%) | 388 (43.7%) | 405 (43.5%) | 411 (45.7%) |
|  3 or more children | 176 (35.8%) | 287 (34.6%) | 282 (31.8%) | 291 (31.3%) | 245 (27.3%) |
| *Long-term Health Condition* |  |  |  |  |  |
|  Do not have | 220 (45.9%) | 615 (73.2%) | 348 (39.3%) | 455 (49.2%) | 405 (45.2%) |
|  You have | 259 (54.1%) | 225 (26.8%) | 537 (60.7%) | 469 (50.8%) | 492 (54.8%) |

**Table S4: PHQ-4 item responses and mental health outcomes in the study population (N=4,066)**

|  |  |
| --- | --- |
| **Outcome** | **% of respondents** **(95% Confidence Interval)** |
| **Composite outcomes** |  |
| PHQ-2 >= 3 | 50.0%(48.3% - 51.5%) |
| GAD-2 >= 3 | 44.8%(43.2% - 46.3%) |
| PHQ-4 > 6 & PHQ-4 <=8 (“Moderate distress”) | 29.2%(27.8% - 30.6%) |
| PHQ-4 > 8 (“Severe distress”) | 12.1%(11.1% - 13.1%) |
| PHQ-4 total score (Mean (SD)) | 5.05 (2.9) |
| **Individual questions** |  |
| In the past 14 days, how many days have you had little interest or enjoyment in doing things? |  |
| 0-1 days  | 20.0%(18.2% - 21.8%) |
|  2-6 days | 38.6%(36.4% - 40.9%) |
|  7-11 days | 23.4%(21.5% - 25.4%) |
|  12-14 days | 18.0%(16.2% - 20.0%) |
| In the past 14 days, how many days have you been feeling down, depressed, or without hope? |  |
|  0-1 days  | 26.4%(24.4% - 28.4%) |
|  2-6 days | 35.4%(33.2% - 37.7%) |
|  7-11 days | 21.2%(19.3% - 23.2%) |
|  12-14 days | 17.0%(15.3% - 18.9%) |
| In the past 14 days, how many days have you been feeling nervous, anxious, or on edge? |  |
|  0-1 days  | 28.9%(26.8% - 31.1%) |
|  2-6 days | 34.8%(32.6% - 37.0%) |
|  7-11 days | 20.8%(19.0% - 22.7%) |
|  12-14 days | 15.6%(13.9% - 17.4%) |
| In the past 14 days, how many days have you been unable to stop or control worrying? |  |
|  0-1 days  | 34.4%(32.2% - 36.7%) |
|  2-6 days | 32.9%(30.8% - 35.0%) |
|  7-11 days | 17.1%(15.4% - 18.9%) |
|  12-14 days | 15.6%(14.0% - 17.5%) |

Notes: This table shows the estimated prevalence of mental health outcomes and of specific responses to mental health questions in the study population. Estimates reflect sample weighting.

**Table S5: Distribution of responses to survey questions about COVID-19 experiences (weighted)**

|  |  |  |
| --- | --- | --- |
| **Outcome** | **N** | **%a** |
| In the past 7 days, how many days have you stayed at home the whole day, without going out at all and without receiving any visitors? | 3,939 |  |
| No problems getting medicine |  | 46 |
| Unable to get medicine |  | 31 |
| Medicine not required |  | 23 |
| In the past 7 days, how many days have you stayed at home the whole day, without going out at all and without receiving any visitors? | 3,792 |  |
| 0-1 days |  | 19 |
| 2-3 days |  | 25 |
| 4-5 days |  | 22 |
| 6-7 days |  | 35 |
| At the moment, how much do you worry about getting into trouble with the police or LDU for violating lockdown measures related to coronavirus, such as the curfew? | 3,993 |  |
| Don’t worry at all |  | 25 |
| Worry some |  | 43 |
| Worry a lot |  | 32 |
| At the moment, how much do you worry about you or someone close to you getting COVID-19?  | 3,998 |  |
| Don’t worry at all |  | 19  |
| Worry some |  | 52 |
| Worry a lot |  | 29 |
| Since March 20th, 2020, have you experienced a change in income because of COVID-19 or related restrictions? | 4,028 |  |
| A gain |  | 4 |
| No change |  | 3 |
| Small reduction |  | 60 |
| Large reduction |  | 33 |
| In the past 30 days, have you needed to care for a child who would normally be in school or day care? | 3,738 |  |
| Have not needed to |  | 43 |
| Have needed to |  | 57 |
| Since March 20th, 2020, have you had to go and live somewhere else because of COVID-19 or related restrictions? | 4,047 |  |
| Have not  |  | 54 |
| Have  |  | 46 |

Notes: aWeighted with sampling weights.

**Table S6: Linear regression results of COVID-19 related variables on PHQ-4 total score, adjusted for sociodemographics**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | **Unable to get med** | **Number days stayed home** | **Worried about police** | **Worried about COVID** | **Change in income** | **Childcare** | **Relocation** |
| **Able to get needed medicine/medical care** |  |  |  |  |  |  |  |
| No problems getting medicine (Ref) | 0 |  |  |  |  |  |  |
|  | (.) |  |  |  |  |  |  |
| Unable to get medicine | 0.420\*\* |  |  |  |  |  |  |
|  | (0.162) |  |  |  |  |  |  |
| Medicine not required | 0.447\* |  |  |  |  |  |  |
|  | (0.205) |  |  |  |  |  |  |
| **Number of days stayed home** |  |  |  |  |  |  |  |
| 0-1 days (Ref) |  | 0 |  |  |  |  |  |
|  |  | (.) |  |  |  |  |  |
| 2-3 days |  | 0.252 |  |  |  |  |  |
|  |  | (0.204) |  |  |  |  |  |
| 4-5 days |  | 0.873\*\*\* |  |  |  |  |  |
|  |  | (0.215) |  |  |  |  |  |
| 6-7 days |  | 1.600\*\*\* |  |  |  |  |  |
|  |  | (0.206) |  |  |  |  |  |
| **Worried about getting in trouble with police over lockdown** |  |  |  |  |  |  |  |
| Don't worry at all (Ref) |  |  | 0 |  |  |  |  |
|  |  |  | (.) |  |  |  |  |
| Worry some |  |  | 0.778\*\*\* |  |  |  |  |
|  |  |  | (0.181) |  |  |  |  |
| Worry a lot |  |  | 1.552\*\*\* |  |  |  |  |
|  |  |  | (0.189) |  |  |  |  |
| **Worried about someone close getting infected with COVID-19** |  |  |  |  |  |  |  |
| Don't worry at all (Ref) |  |  |  | 0 |  |  |  |
|  |  |  |  | (.) |  |  |  |
| Worry some |  |  |  | 0.623\*\*\* |  |  |  |
|  |  |  |  | (0.186) |  |  |  |
| Worry a lot |  |  |  | 1.133\*\*\* |  |  |  |
|  |  |  |  | (0.214) |  |  |  |
| **Change in income since March 2020** |  |  |  |  |  |  |  |
| A gain (Ref) |  |  |  |  | 0 |  |  |
|  |  |  |  |  | (.) |  |  |
| No change |  |  |  |  | -0.389 |  |  |
|  |  |  |  |  | (0.475) |  |  |
| Small reduction |  |  |  |  | -0.186 |  |  |
|  |  |  |  |  | (0.390) |  |  |
| Large Reduction |  |  |  |  | -0.426 |  |  |
|  |  |  |  |  | (0.394) |  |  |
| **Needed to care for a child who would normally be in school** |  |  |  |  |  |  |  |
| Do not have (Ref) |  |  |  |  |  | 0 |  |
|  |  |  |  |  |  | (.) |  |
| You have |  |  |  |  |  | 0.115 |  |
|  |  |  |  |  |  | (0.151) |  |
| **Needed to move elsewhere due to COVID-19** |  |  |  |  |  |  |  |
| You have not (Ref) |  |  |  |  |  |  | 0 |
|  |  |  |  |  |  |  | (.) |
| You have |  |  |  |  |  |  | 0.224 |
|  |  |  |  |  |  |  | (0.145) |
| **Survey round (ref. = round 1)** |  |  |  |  |  |  |  |
| round=2 | 0.381 | 0.361 | 0.443 | 0.339 | 0.367 | 0.376 | 0.332 |
|  | (0.273) | (0.260) | (0.271) | (0.272) | (0.273) | (0.280) | (0.269) |
| round=3 | -0.0819 | 0.0281 | 0.0132 | 0.0246 | -0.0443 | -0.0102 | -0.0234 |
|  | (0.259) | (0.252) | (0.258) | (0.261) | (0.256) | (0.265) | (0.256) |
| round=4 | -0.0324 | -0.0148 | 0.0989 | 0.0623 | -0.0440 | -0.00828 | -0.0594 |
|  | (0.252) | (0.244) | (0.251) | (0.253) | (0.250) | (0.257) | (0.250) |
| round=5 | 0.154 | 0.0845 | 0.110 | 0.156 | 0.148 | 0.128 | 0.117 |
|  | (0.254) | (0.248) | (0.249) | (0.252) | (0.249) | (0.257) | (0.249) |
| **Age group (ref. = 18-24 years)** |  |  |  |  |  |  |  |
| 25 to 34 years | 0.101 | 0.0500 | 0.0603 | 0.0669 | 0.0953 | 0.135 | 0.137 |
|  | (0.130) | (0.127) | (0.127) | (0.128) | (0.128) | (0.132) | (0.128) |
| 35 to 44 years | -0.164 | -0.258 | -0.140 | -0.137 | -0.122 | -0.0556 | -0.138 |
|  | (0.222) | (0.225) | (0.213) | (0.216) | (0.221) | (0.232) | (0.218) |
| 45 years or older | -0.0311 | -0.212 | 0.0623 | 0.0313 | -0.0141 | -0.0203 | 0.0375 |
|  | (0.253) | (0.243) | (0.249) | (0.250) | (0.252) | (0.255) | (0.251) |
| **Urban vs. rural (ref. = urban)** |  |  |  |  |  |  |  |
| Village | 0.0944 | 0.138 | 0.0570 | 0.0442 | 0.0804 | 0.119 | 0.0813 |
|  | (0.167) | (0.162) | (0.163) | (0.160) | (0.164) | (0.172) | (0.165) |
| **Gender (ref. = Male)** |  |  |  |  |  |  |  |
| Female | 0.417\*\* | 0.339\* | 0.403\*\* | 0.407\*\* | 0.447\*\* | 0.450\*\* | 0.429\*\* |
|  | (0.153) | (0.151) | (0.150) | (0.151) | (0.152) | (0.159) | (0.151) |
| **Region (ref. = Central)** |  |  |  |  |  |  |  |
| Eastern | 0.187 | 0.199 | 0.112 | 0.231 | 0.195 | 0.135 | 0.211 |
|  | (0.168) | (0.161) | (0.163) | (0.167) | (0.168) | (0.173) | (0.167) |
| Northern | 0.736\*\* | 0.822\*\*\* | 0.566\* | 0.793\*\*\* | 0.751\*\* | 0.774\*\* | 0.737\*\* |
|  | (0.232) | (0.233) | (0.223) | (0.222) | (0.228) | (0.239) | (0.228) |
| Western | 0.325 | 0.342 | 0.320 | 0.364 | 0.389 | 0.362 | 0.401 |
|  | (0.211) | (0.206) | (0.208) | (0.211) | (0.210) | (0.219) | (0.209) |
| **Marital status (ref. = never married)** |  |  |  |  |  |  |  |
| Divorced/separated/widowed | 0.872\* | 1.007\* | 1.029\*\* | 0.934\* | 0.957\* | 0.986\* | 0.998\* |
|  | (0.413) | (0.428) | (0.394) | (0.394) | (0.398) | (0.423) | (0.402) |
| Married or living with partner | 0.116 | 0.152 | 0.132 | 0.150 | 0.121 | 0.0952 | 0.156 |
|  | (0.144) | (0.140) | (0.142) | (0.139) | (0.142) | (0.148) | (0.140) |
| **Highest education completed (ref. = completed primary)** |  |  |  |  |  |  |  |
| No formal schooling | 0.800 | 0.802 | 1.019\*\* | 1.021\* | 0.933\* | 0.665 | 0.888\* |
|  | (0.426) | (0.423) | (0.381) | (0.440) | (0.429) | (0.472) | (0.425) |
| Less than primary | -0.225 | -0.172 | -0.0993 | -0.153 | -0.189 | -0.211 | -0.212 |
|  | (0.232) | (0.243) | (0.226) | (0.224) | (0.227) | (0.240) | (0.230) |
| Completed secondary | -0.141 | -0.205 | -0.111 | -0.0826 | -0.131 | -0.127 | -0.106 |
|  | (0.179) | (0.170) | (0.174) | (0.177) | (0.177) | (0.184) | (0.176) |
| Completed tertiary | -1.067\*\*\* | -0.824\*\*\* | -0.934\*\*\* | -0.969\*\*\* | -0.994\*\*\* | -1.054\*\*\* | -0.994\*\*\* |
|  | (0.226) | (0.226) | (0.225) | (0.232) | (0.231) | (0.240) | (0.231) |
| **Main household income source before March 2020 (ref. = business income)** |  |  |  |  |  |  |  |
| Farming, livestock, or fishing | -0.273 | -0.285 | -0.146 | -0.165 | -0.206 | -0.224 | -0.273 |
|  | (0.171) | (0.175) | (0.165) | (0.168) | (0.168) | (0.176) | (0.169) |
| Remittances | -0.0915 | -0.139 | -0.151 | -0.130 | -0.0563 | -0.173 | -0.0466 |
|  | (0.367) | (0.338) | (0.361) | (0.374) | (0.360) | (0.397) | (0.364) |
| Wage-employment | -0.0259 | -0.206 | 0.0367 | -0.0374 | -0.00761 | -0.0343 | -0.0103 |
|  | (0.266) | (0.230) | (0.262) | (0.263) | (0.270) | (0.275) | (0.264) |
| Other sources | 0.720 | 0.693 | 0.669 | 0.738\* | 0.631 | 0.692 | 0.677 |
|  | (0.369) | (0.376) | (0.375) | (0.369) | (0.365) | (0.360) | (0.363) |
| **Number of children < 18 in household (ref. = no children)** |  |  |  |  |  |  |  |
| 1 or 2 children | 0.324 | 0.294 | 0.262 | 0.317 | 0.349\* | 0.296 | 0.305 |
|  | (0.171) | (0.163) | (0.166) | (0.166) | (0.168) | (0.173) | (0.166) |
| 3 or more children | 0.791\*\*\* | 0.894\*\*\* | 0.703\*\*\* | 0.688\*\*\* | 0.788\*\*\* | 0.770\*\*\* | 0.770\*\*\* |
|  | (0.177) | (0.176) | (0.173) | (0.179) | (0.178) | (0.181) | (0.175) |
| Constant | 3.722\*\*\* | 3.091\*\*\* | 3.053\*\*\* | 3.187\*\*\* | 4.105\*\*\* | 3.746\*\*\* | 3.714\*\*\* |
|   | (0.347) | (0.350) | (0.362) | (0.362) | (0.504) | (0.367) | (0.349) |
|  |  |  |  |  |  |  |  |
| **Observations** | 3722 | 3594 | 3760 | 3766 | 3801 | 3546 | 3808 |
| **Adjusted R-squared** | 0.056 | 0.101 | 0.089 | 0.067 | 0.053 | 0.053 | 0.051 |

Notes: Table shows output from Ordinary Least Squares (OLS) regressions of the Patient Health Questionnaire (PHQ)-4 on covariates including demographic characteristics and COVID-related variables. Each column represents a different regression, using a different COVID-related variable. Regressions used sampling weights. Robust standard errors are shown in parentheses.

**Table S7: Regression sensitivity analysis**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|   | (1) | (2) | (3) | (4) | (5) |
| Variables | OLS weighted | OLS unweighted | OLS weighted – without  | NB RR weighted | Logit OR weighted PHQ4>6 |
|   |   |   |   |   |   |
| **Survey round (ref. = round 1)** |  |  |  |  |  |
| round = 2 | 0.35 | 0.20 |  | 1.07 | 1.09 |
|  | (0.27) | (0.17) |  | (0.06) | (0.20) |
| round = 3 | -0.03 | -0.06 | -0.00 | 0.99 | 0.93 |
|  | (0.25) | (0.16) | (0.25) | (0.05) | (0.16) |
| round = 4 | -0.05 | 0.00 | -0.06 | 0.99 | 0.98 |
|  | (0.25) | (0.16) | (0.24) | (0.05) | (0.17) |
| round =5 | 0.13 | 0.04 | 0.13 | 1.02 | 0.99 |
|  | (0.25) | (0.16) | (0.25) | (0.05) | (0.17) |
| **Gender (ref. = male)** |  |  |  |  |  |
| Female | 0.44\*\*\* | 0.20\*\* | 0.46\*\*\* | 1.09\*\*\* | 1.40\*\*\* |
|  | (0.15) | (0.09) | (0.17) | (0.03) | (0.15) |
| **Urban vs. rural (ref. = urban)** |  |  |  |  |  |
| Village | 0.08 | 0.02 | -0.00 | 1.02 | 1.05 |
|  | (0.16) | (0.10) | (0.18) | (0.03) | (0.12) |
| **Long-term health problem (ref. = Do not have)** |  |  |  |  |  |
| You have | 0.33\*\* | 0.32\*\*\* | 0.31\* | 1.07\*\* | 1.11 |
|  | (0.15) | (0.09) | (0.16) | (0.03) | (0.12) |
| **Age group (ref. = 18-24 years)** |  |  |  |  |  |
| 25 to 34 years | 0.12 | 0.14 | 0.10 | 1.02 | 1.17 |
|  | (0.13) | (0.11) | (0.14) | (0.03) | (0.11) |
| 35 to 44 years | -0.12 | -0.13 | -0.41\* | 0.97 | 0.78 |
|  | (0.22) | (0.20) | (0.25) | (0.04) | (0.12) |
| 45 years or older | 0.02 | -0.00 | 0.06 | 1.00 | 0.99 |
|  | (0.25) | (0.24) | (0.28) | (0.05) | (0.18) |
| **Region (ref. = Central)** |  |  |  |  |  |
| Eastern | 0.20 | 0.04 | 0.24 | 1.04 | 1.19 |
|  | (0.17) | (0.11) | (0.19) | (0.04) | (0.14) |
| Northern | 0.74\*\*\* | 0.47\*\*\* | 0.86\*\*\* | 1.15\*\*\* | 1.71\*\*\* |
|  | (0.23) | (0.16) | (0.25) | (0.05) | (0.27) |
| Western | 0.40\* | 0.27\* | 0.39 | 1.08\* | 1.29\* |
|  | (0.21) | (0.15) | (0.24) | (0.04) | (0.19) |
| **Marital status (ref. = never married)** |  |  |  |  |  |
| Divorced/separated/widowed | 0.97\*\* | 0.54\*\* | 0.96\*\* | 1.20\*\* | 1.71\*\* |
|  | (0.40) | (0.23) | (0.44) | (0.08) | (0.40) |
| Married or living with partner | 0.11 | 0.16 | 0.04 | 1.02 | 1.14 |
|  | (0.14) | (0.10) | (0.15) | (0.03) | (0.13) |
| **Highest education completed (ref. = completed primary)** |  |  |  |  |  |
| No formal schooling | 0.88\*\* | 0.94\*\*\* | 1.19\*\* | 1.17\*\* | 2.26\*\*\* |
|  | (0.43) | (0.29) | (0.47) | (0.08) | (0.70) |
| Less than primary | -0.20 | -0.16 | 0.03 | 0.96 | 0.83 |
|  | (0.23) | (0.14) | (0.25) | (0.04) | (0.13) |
| Completed secondary | -0.12 | -0.17 | -0.12 | 0.98 | 0.87 |
|  | (0.18) | (0.11) | (0.19) | (0.03) | (0.11) |
| Completed tertiary | -1.01\*\*\* | -0.69\*\*\* | -0.79\*\*\* | 0.81\*\*\* | 0.53\*\*\* |
|  | (0.23) | (0.16) | (0.26) | (0.04) | (0.09) |
| **Main household income source before March 2020 (ref. = business income)** |  |  |  |  |  |
| Farming, livestock, fishing | -0.23 | -0.26\*\* | -0.26 | 0.96 | 0.93 |
|  | (0.17) | (0.10) | (0.19) | (0.03) | (0.11) |
| Remittances | -0.05 | 0.15 | -0.06 | 0.99 | 0.93 |
|  | (0.36) | (0.24) | (0.39) | (0.07) | (0.23) |
| Wage-employment | -0.01 | -0.16 | 0.13 | 1.00 | 1.12 |
|  | (0.26) | (0.16) | (0.27) | (0.05) | (0.20) |
| Other sources | 0.67\* | 0.50\*\* | 0.68\* | 1.14\*\* | 1.35 |
|  | (0.36) | (0.25) | (0.38) | (0.07) | (0.37) |
| **Number of children < 18 in household (ref. = no children)** |  |  |  |  |  |
| 1 or 2 children | 0.32\* | 0.20\* | 0.46\*\* | 1.07\* | 1.19 |
|  | (0.17) | (0.12) | (0.19) | (0.04) | (0.15) |
| 3 or more children | 0.78\*\*\* | 0.67\*\*\* | 0.87\*\*\* | 1.17\*\*\* | 1.73\*\*\* |
|  | (0.17) | (0.13) | (0.20) | (0.04) | (0.24) |
|  |  |  |  |  |  |
| Constant | 3.84\*\*\* | 4.27\*\*\* | 3.81\*\*\* | 3.94\*\*\* | 0.33\*\*\* |
|  | (0.34) | (0.22) | (0.34) | (0.27) | (0.08) |
|  |  |  |  |  |  |
| Observations | 3,825 | 3,825 | 3,041 | 3,825 | 3,825 |
| R-squared | 0.06 | 0.03 | 0.06 |   |   |

Notes: Table shows output from Ordinary Least Squares (OLS) regressions of the Patient Health Questionnaire (PHQ)-4 on covariates including demographic characteristics and COVID-related variables. Each column represents a different regression, using a different COVID-related variable. Regressions used sampling weights. Robust standard errors are shown in parentheses.