

**Urgent COVID-19 Quantitative and Qualitative Data Collection in Ghana:  
Supporting Pandemic Planning and Response**

**A survey of the knowledge and experiences of Ghana population during the COVID-19  
pandemic**

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**About the study**

This study was funded by the University of Southampton, UK, and was led in-country by Ghanaian and Togolese partners.

**Website:** <https://www.the-ciru.com/resin-global-health-pandemic>

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## Introduction

The COVID-19 pandemic has delivered a profound shock to countries all around the world, including Ghana. The threat of the virus, as well as the measures administered by the Ghanaian government, has infiltrated deep into the lives of its residents. As part of the University of Southampton Strategic Development Fund in collaboration with PACKS Africa (Ghana) and CROP (Togo), we recently sought to shed light on a number of important aspects of the pandemic, including its impact on Ghanaian resident's public knowledge of COVID-19, risk reduction behaviours, attitudes toward the pandemic, and the influence of government procedures on its residents' physical and mental health.

This was one of the first studies to comprehensively shed light on these factors in a sub-Saharan African country since the pandemic began. The primary aim of the survey was to generate immediately useful data in the short-term, but could also inform decision-making and research agendas in the longer term.

## Methods

**Participants.** Respondents were 3036 Ghanaian residents residing in all 16 regions of Ghana (61.4% male; *Age Range* = 18–75,  $M_{age} = 29.33$ ,  $SD = 7.17$ ). Among the largest ethnic groups were Akan (1379; 45.4%) and Ewe (615; 20.3%), and the majority of respondents lived in Greater Accra (1016; 33.5%) and Ashanti (485; 16.0%). Further, 82.4% had completed higher education, and 16.4% had completed senior secondary or vocational training. Approximately 11.0% of participants reported at least one long-term health condition, and 77.5% (2348) of respondents reported having caring responsibilities for adults or children.

**Materials and procedure.** The online survey was hosted on Qualtrics and was distributed through Whatsapp groups and Facebook ads. The survey was completed by residents across all 16 regions of Ghana via random sampling. First, we measured the negative effects of COVID-19 on finances, including employment rates. Next, we utilised validated self-report scales that have been used previously in other COVID-19 pre-prints and

research summaries. These scales assessed individual behaviours in response to COVID-19 (e.g., handwashing, mask-wearing, social distancing), knowledge of COVID-19 (e.g., symptoms, transmission, and sources of COVID-19), and attitudes toward COVID-19 (e.g., fear, shame, and perceived danger). We also measured perceived physical health, sleep quality, and happiness during the past 2 weeks, as well as mental health variables (e.g., depression, loneliness). Finally, respondents reported the average amount of time spent engaging in hedonistic behaviors daily during the past 2 weeks (e.g., on social media, spending time outdoors, sleeping, exercising, and under the influence of alcohol). Upon completion of the survey, participants were provided with a debriefing statement detailing information about the study, and COVID-19 statistics and information as reported on the Ghana Health Service website.

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## **Results**

**Employment, income and negative financial impact of COVID-19.** In terms of the economic impact of COVID-19, 40.2% (1221) of respondents stated that they were currently unemployed, whereas 59.8% stated that they were employed to some degree (e.g., 12.4% (376) self-employed; 10.7% (326) employed part-time; 36.6% (1112) employed full-time). Approximately 21.0% (644) of respondents expressed that their basic needs were not being met based on their current income, whereas 34.9% (1059) stated that their needs were only just met, 33.4% (1013) reported that their needs were met with some left, and 10.5% (317) stated that they were comfortable financially. Only 4.6% (139) of respondents reported that COVID-19 had had no negative impact on them financially, whereas 95% of respondents reported that COVID-19 had affected them at least a little bit. In fact, 44.6% (1354) stated COVID-19 had negatively impacted them ‘a lot’ and 17.7% (537) ‘extremely’.

**Symptoms, testing, and diagnoses of COVID-19.** Approximately 17.5% (528) of respondents reported that they had symptoms of COVID-19 previously, and 12.6% (383) said that they had been previously tested for COVID-19. Of those respondents who were tested,

11.8% (45) tested positive for COVID-19. However, a larger percentage of participants reported that they knew somebody personally who had tested positive for COVID-19 (25.8%; 782). A small percentage (4.7%; 143) expressed that they would choose not to get tested for COVID-19 if they ever experienced symptoms, whereas 8.4% (256) said that they were unsure if they would. Finally, 63.2% (1918) of participants stated that they would seek out a COVID-19 vaccination should one become available, whereas 18.5% (562) stated that they would not, and 18.3% (556) expressed indifference toward a vaccine. This finding is similar to other international surveys (<https://psyarxiv.com/fs9wk/>), and highlights how important health promotion and public communications will be to ensure high uptake of any new vaccine. Further research is needed to dig deeper into why certain individuals may refuse to get tested and/or vaccinated for COVID-19, and why others remain indifferent.

**Knowledge of COVID-19.** An overwhelming percentage of respondents (97.0%) reported that they think COVID-19 is real and that it is possible to die from COVID-19. There was some degree of disparity in beliefs regarding how much longer they thought COVID-19 would last; 30.8% (934) of respondents believe that it will last between 7 months and 1 year, and 35.0% (1063) of respondents believe that it will last 1-2 years.

There also exists conspiracy theories surrounding the disease among Ghanaian residents. For example, 21.0% of respondents believe that COVID-19 is a biological weapon designed by the government of China, and 20.0% believe that it has been designed specifically to reduce or control the population. See Fig. 1. for the full list of conspiracy theories. There were also reported differences in perceived knowledge of COVID-19 symptoms (Fig. 2) and transmission of COVID-19 (Fig. 3). Finally, results showed that Whatsapp groups (84.7%) were the main source of COVID-19-related information for Ghanaian residents, followed by Facebook (69.2%) and the mass media (68.4%). Only 4.1% of respondents reported that they retrieve COVID-19-related information from government officials.

**Compliance to preventative measures.** Respondents reported reasonably high compliance with infection control practice; 85.0% of respondents reported regular hand washing practices, 80.2% reported adhering to social distancing guidelines, and 91.3%

reported wearing masks in public places. See Tables 6a-6c for the full list of preventative measures assessed. Further analyses revealed that individual differences influenced the extent to which people adhered to preventative measures. For example, our analyses showed that women (compared to men) were significantly more likely to adhere to preventative measures such as risk reduction and limiting contact; whereas older respondents (35+) were more likely to adhere to risk reduction strategies compared to 18-24 year olds and 25-34 year olds. It is worth acknowledging that these results may be skewed due to the biased sample of respondents, which consisted mostly of university educated individuals. Further tests are needed on samples of lower socio-economic status (e.g., individuals with little or no education).

**Attitudes toward COVID-19.** Respondents reported personal fears around COVID-19, with 59.9% reporting that they were afraid of losing their life to COVID-19, and 85.6% reported worries about family members or friends becoming infected. There was an element of stigma attached to the virus, with almost 25.0% of respondents expressing that they would feel embarrassed and ashamed if they ever tested positive for COVID-19. Almost 80.0% stated that they felt that COVID-19 was ‘very’ or ‘extremely’ dangerous to themselves or to their family. However, a greater number of people thought that COVID-19 would be more dangerous to their society (85.6%). See Tables 7-8 for the full list of items used.

Finally, there was an overall difference of opinion in respondents’ perceptions of trust in the government’s response to the pandemic: 27.6% (839) expressed distrust in the government’s response, 57.1% (1734) stated that they trusted government’s response toward the pandemic, and 12.6% (392) reported indifference. Further research is needed to tap into disparities in opinion toward the government’s response.

**Perceptions of Physical and Mental Health.** Respondents’ perceptions of their own physical health were generally good. Most respondents reported that their overall physical health was ‘excellent’ or ‘good’ during the past 2 weeks (83.4%; 2559); 71.6% reported ‘excellent’ or ‘good’ sleep quality, and 57.0% reported ‘excellent’ or ‘good’ levels of happiness. Perceptions of happiness ranked lower – presumably due to the drastic overhaul to the individuals’ lives due to COVID-19. Likewise with our mental health items, at least

62.3% of respondents reported ‘little interest or pleasure in doing things’ during the past 2 weeks, with 17.0% reporting these feelings almost every day. Similar results were found for the items ‘feeling down, depressed, or hopeless’, and ‘feeling anxious or uneasy’. Loneliness was the most common effect of COVID-19, with 19.0% (570) of respondents reporting ‘feeling lonely’ almost every day. Digging deeper, these results are influenced by one’s level of employment, income, and the extent to which COVID-19 has impacted them negatively, with unemployed respondents and those most negatively affected by COVID-19 reporting significantly lower levels of physical health and higher mental health issues. Further, mental health problems were reported more by younger respondents (18-24) compared to older respondents (25+). There is also a strong and significant correlation between reported mental health issues and the reported duration of time spent on social media, with 31.9% (953) reporting that they spend 8 hours or more per day on social media (see Table 11).

## **Conclusions**

We have reported findings from our sample of 3036 respondents, in which we have shed light on the public knowledge, behaviours, and attitudes of Ghanaian residents toward COVID-19. We hope that this report proves useful to Ghanaian stakeholders in informing decision-making and research agendas in the short and longer term. We also plan to disseminate these findings more widely through our extensive international networks and research publications.

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**Table 1. Characteristics of final sample ( $N = 3036$ ); Age ( $M = 29.31$ ;  $SD = 7.20$ )**

<b>Variables</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentage</b>
Gender	Male	1863	61.3%
	Female	1156	38.1%
	<i>Undisclosed</i>	<i>17</i>	<i>0.6%</i>
Age	18-24	731	24.0%
	25-34	1747	57.5%
	35-44	408	13.5%
	45-54	50	1.6%
	55-64	29	1.0%
	65+	15	0.5%
	<i>Undisclosed</i>	<i>59</i>	<i>1.9%</i>
Ethnic group	Akan	1379	45.44%
	Ewe	615	20.3%
	Ga-Adangbe	270	8.9%
	Grusi	54	1.8%
	Guan	70	2.3%
	Gurma	18	0.6%
	Konkomba	34	1.1%
	Kusassi	35	1.2%
	Mole-Dagbon	160	5.3%
	Other	395	13.2%
Education	No formal education	4	0.1%
	Primary	4	0.1%
	Junior secondary	26	0.9%
	Senior secondary	498	16.4%
	Higher education	2503	82.5%
Region	Ashanti	485	16.0%
	Ahafo	86	2.8%
	Bono	57	1.9%
	Bono East	24	0.8%
	Central	185	6.1%
	Eastern	238	7.8%
	Greater Accra	1016	33.5%
	Northern	179	5.9%
	North East	20	0.7%
	Oti	103	3.4%
	Other	97	3.2%
Savannah	16	0.5%	



	Upper East	112	3.7%
	Upper West	65	2.1%
	Volta	191	6.3%
	Western	132	4.3%
	Western North	30	1.0%
	<i>Undisclosed</i>	97	3.2
Religion	Christianity	2594	85.6%
	Islam	343	11.3%
	Traditional	12	0.4%
	Other	22	0.7%
	No religion	60	2.0%

**Table 2. Employment, income and negative impact of COVID-19 on finances**

<b>Variables</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentage</b>
Employment	Unemployed	1221	40.2%
	Self-employed	376	12.4%
	Part-time	326	10.7%
	Full-time	1112	36.6%
Do you have caring responsibilities for adults or children?	No	681	22.5%
	Yes	2348	77.5%
Income	Needs not met	644	21.2%
	Needs only just met	1059	34.9%
	Needs met with some left	1013	33.4%
	Comfortable	317	10.5%
Negative impact	Not at all	139	4.6%
	A little bit	483	15.9%
	Moderately	523	17.2%
	A lot	1354	44.6%
	Extremely	537	17.7%

**Table 3. Symptoms, testing, and diagnoses of COVID-19**

<b>Variables</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentage</b>
Do you have any long-term conditions?	No	2689	88.9%
	Yes	344	11.1%
Category of illness	Heart	48	14.0%
	Lung	27	7.8%
	Liver	42	12.2%
	Diabetes	17	4.9%
	Immuno-suppressant	17	4.9%
	Other	191	55.5%

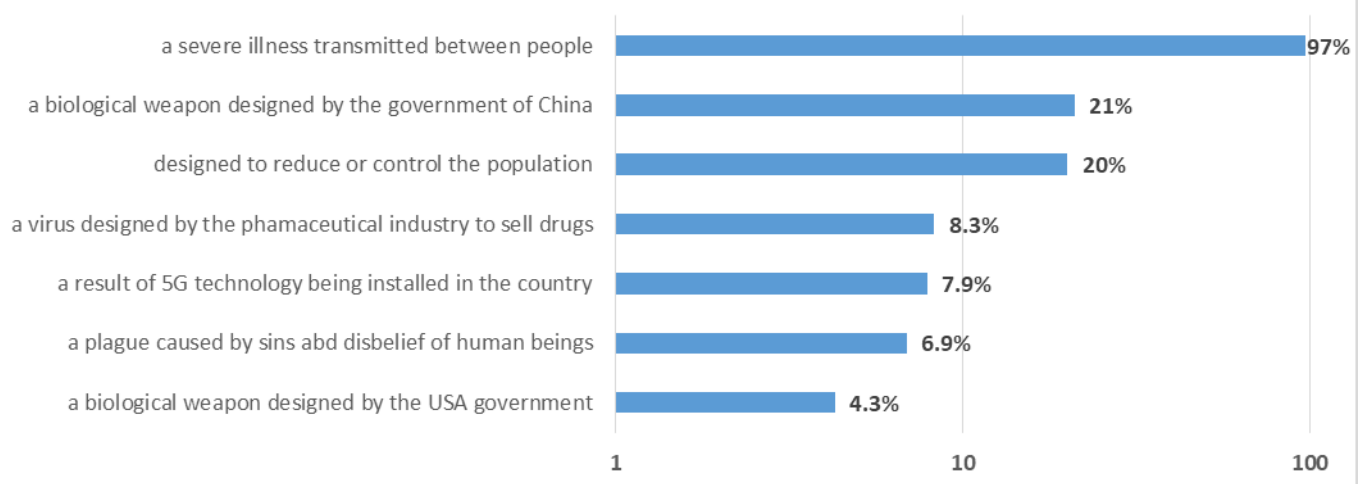
**Table 4. Symptoms, testing, and diagnoses of COVID-19**

<b>Variables</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentage</b>
Previous symptoms of COVID	No	2487	82.5%
	Yes	528	17.5%
Previously tested for COVID	No	2647	87.4%
	<b>Yes</b>	<b>383</b>	<b>12.6%</b>
<b>Previously diagnosed with COVID-19?</b>	No	329	86.1%
	Yes	45	11.8%
	Don't know	8	2.1%
Know anybody personally with COVID-19?	No	2247	74.2%
	Yes	782	25.8%
Would you ever get tested?	No	143	4.7%
	Yes	2636	86.9%
	Don't know	256	8.4%
If a vaccine became available, would you get vaccinated?	No	562	18.5%
	Yes	1918	63.2%
	Don't know	556	18.3%

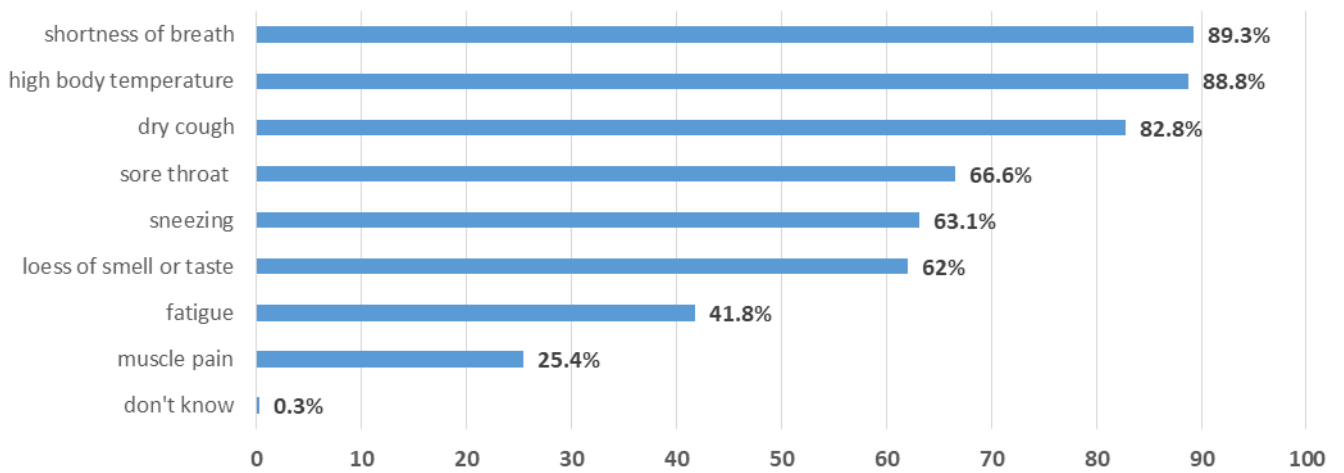
**Table 5. Knowledge of COVID-19**

Variables	Categories	Frequency	Percentage
Is COVID-19 real?	No	14	0.5%
	Not sure	77	2.5%
	Yes	2944	97.0%
Possible to die from COVID-19?	No	38	1.3%
	Not sure	1	0.0%
	Yes	2944	97.0%
	<i>Undisclosed</i>	53	1.7%
How much longer will COVID-19 last?	1-3 months	102	3.4%
	4-6 months	149	4.9%
	7 months – 1 year	934	30.8%
	1-2 years	1063	35.0%
	2 years +	769	25.3%
	<i>Undisclosed</i>	19	0.6%

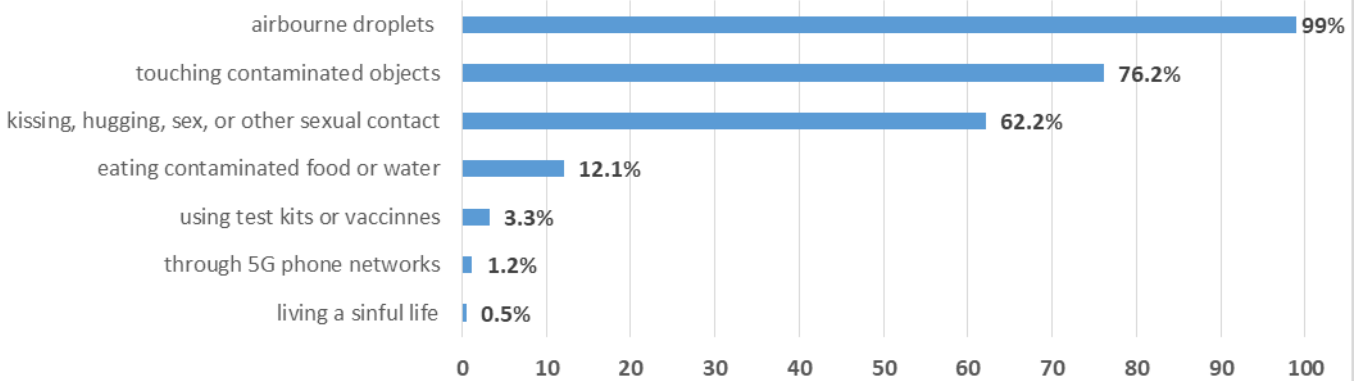
**Fig. 1: Sources of COVID-19 in Ghana**



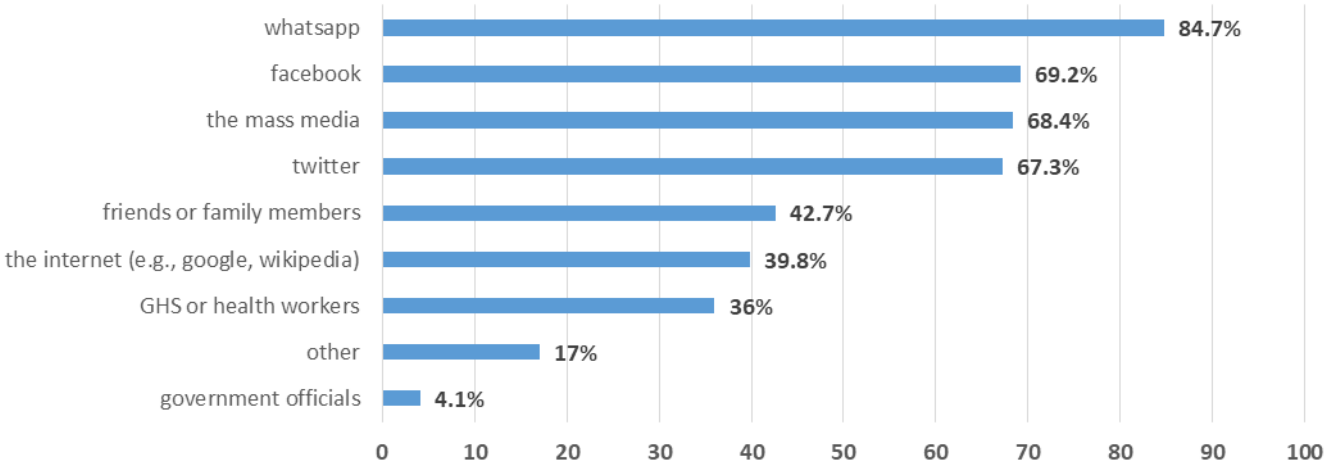
**Fig. 2: Symptoms of COVID-19**



**Fig. 3: Transmission of COVID-19**



**Fig. 4: Sources of COVID-19 information**



**Table 6a. Compliance to preventative measures**

<b>Variables</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentage</b>
Practicing regular hand washing	Not at all	8	0.3%
	Rarely	35	1.2%
	Sometimes	413	13.6%
	Very often	1309	43.1%
	Always	1271	41.9%
Social distancing guidelines	Not at all	23	0.8%
	Rarely	70	2.3%
	Sometimes	507	16.7%
	Very often	1177	38.8%
	Always	1258	41.4%
Wearing mask in public place	Not at all	30	1.0%
	Rarely	30	1.0%
	Sometimes	204	6.7%
	Very often	623	20.5%
	Always	2148	70.8%
Disinfecting surfaces at home	Not at all	427	14.1%
	Rarely	459	15.1%
	Sometimes	1065	35.1%
	Very often	694	22.9%
	Always	387	12.8%
Limiting contact with others	Not at all	36	1.2%
	Rarely	125	4.1%
	Sometimes	655	21.6%
	Very often	1179	38.8%
	Always	1034	34.1%
Staying home from school/work/other unless necessary	Not at all	214	7.0%
	Rarely	186	6.1%
	Sometimes	523	17.2%
	Very often	842	27.7%
	Always	1271	41.9%

**Table 6b. Compliance to preventative measures**

<b>Variables</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentage</b>
Avoiding social activities	Not at all	48	1.6%
	Rarely	102	3.4%
	Sometimes	626	20.6%
	Very often	1097	36.2%
	Always	1160	38.2%
Avoiding public spaces	Not at all	33	1.1%
	Rarely	107	3.5%
	Sometimes	736	24.3%
	Very often	1291	42.7%
	Always	858	28.4%
Stopping hugging/kissing	Not at all	164	5.4%
	Rarely	146	4.8%
	Sometimes	363	12.0%
	Very often	682	22.5%
	Always	1671	55.2%
Avoiding being with friends and family outside my household	Not at all	333	11.0%
	Rarely	426	14.0%
	Sometimes	1309	43.2%
	Very often	748	24.7%
	Always	217	7.2%
Avoiding touching my face	Not at all	144	4.7%
	Rarely	401	13.2%
	Sometimes	1064	35.1%
	Very often	941	31.1%
	Always	480	15.8%
Coughing/sneezing into my elbow	Not at all	222	7.3%
	Rarely	288	9.5%
	Sometimes	655	21.6%
	Very often	826	27.3%
	Always	1038	34.3%

**Table 6c. Compliance to preventative measures**

<b>Variables</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentage</b>
Stocking up on supplies	Not at all	372	12.3%
	Rarely	524	17.3%
	Sometimes	978	32.3%
	Very often	766	25.3%
	Always	387	12.8%
Using hand sanitizer	Not at all	22	0.7%
	Rarely	69	2.3%
	Sometimes	414	13.7%
	Very often	961	31.8%
	Always	1557	51.5%
Reducing visits to places of worship	Not at all	154	5.1%
	Rarely	185	6.1%
	Sometimes	644	21.2%
	Very often	856	28.2%
	Always	1193	39.3%
Stopping relatives and friends visiting me at home	Not at all	457	15.1%
	Rarely	416	13.7%
	Sometimes	994	32.8%
	Very often	715	23.7%
	Always	452	14.9%

**Table 7. Feelings toward COVID-19**

<b>Variables</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentage</b>
It makes me feel uncomfortable to think about COVID-19	Strongly disagree	515	17.0%
	Somewhat disagree	328	10.8%
	Neither	367	12.1%
	Somewhat agree	854	28.1%
	Strongly agree	971	32.0%
I am afraid of losing my life because of COVID-19	Strongly disagree	655	21.6%
	Somewhat disagree	262	8.6%
	Neither	300	9.9%
	Somewhat agree	614	20.3%
	Strongly agree	1198	39.6%
When watching news stories about COVID-19 on social media, I become nervous or anxious	Strongly disagree	516	17.0%
	Somewhat disagree	343	11.3%
	Neither	325	10.7%
	Somewhat agree	953	31.5%
	Strongly agree	893	29.5%
Worry about family members or friends getting COVID-19	Strongly disagree	198	6.5%
	Somewhat disagree	104	3.4%
	Neither	105	3.5%
	Somewhat agree	715	23.6%
	Strongly agree	1910	63.0%
I would feel embarrassed if I was ever tested positive for COVID-19	Strongly disagree	1592	52.5%
	Somewhat disagree	385	12.7%
	Neither	301	9.9%
	Somewhat agree	358	11.8%
	Strongly agree	395	13.0%
I would feel ashamed if I was ever tested positive for COVID-19	Strongly disagree	1799	59.5%
	Somewhat disagree	384	12.7%
	Neither	263	8.7%
	Somewhat agree	310	10.3%
	Strongly agree	267	8.8%
I would feel disappointed in myself if I was ever tested positive for COVID-19	Strongly disagree	1577	52.0%
	Somewhat disagree	380	12.5%
	Neither	260	8.6%
	Somewhat agree	428	14.1%
	Strongly agree	387	12.8%



**Table 8. Perceived danger of COVID-19 and governmental trust**

<b>Variables</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentage</b>
How dangerous is COVID-19 to you as a person?	Not dangerous	55	1.8%
	Slightly dangerous	216	7.1%
	Mod dangerous	442	14.6%
	Very dangerous	1350	44.5%
	Extreme dangerous	972	32.0%
How dangerous is COVID-19 to your family?	Not dangerous	41	1.4%
	Slightly dangerous	174	5.7%
	Mod dangerous	401	13.2%
	Very dangerous	1329	43.9%
	Extreme dangerous	1082	35.7%
How dangerous is COVID-19 to your society?	Not dangerous	27	0.9%
	Slightly dangerous	118	3.9%
	Mod dangerous	289	9.5%
	Very dangerous	1196	39.4%
	Extreme dangerous	1404	46.2%
I have trust in my government's response to the COVID-19 pandemic	Strongly disagree	458	15.1%
	Somewhat disagree	381	12.5%
	Neither	392	12.6%
	Somewhat agree	910	30.0%
	Strongly agree	824	27.1%
	<i>Undisclosed</i>	81	2.7%

**Table 9. Physical health, sleep quality, and happiness**

<b>Variables</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentage</b>
Overall physical health	Poor	26	0.9%
	Fair	63	2.1%
	Average	387	12.7%
	Good	1637	53.9%
	Excellent	922	30.4%
Sleep quality	Poor	101	3.3%
	Fair	147	4.9%
	Average	612	20.2%
	Good	1415	46.8%
	Excellent	749	24.8%
Level of happiness	Poor	133	4.4%
	Fair	263	8.7%
	Average	908	29.9%
	Good	1206	39.7%
	Excellent	525	17.3%

**Table 10. Mental health**

<b>Variables</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentage</b>
Little interest or pleasure in doing things	Not at all	1134	18.0%
	1-2 days	648	14.8%
	3-4 days	523	12.6%
	5-7 days	190	29.4%
	Nearly every day	511	25.2%
Feeling down, depressed, or hopeless	Not at all	1506	50.2%
	1-2 days	655	21.8%
	3-4 days	312	10.4%
	5-7 days	148	4.9%
	Nearly every day	378	12.6%
Feeling anxious or uneasy	Not at all	1390	46.3%
	1-2 days	775	25.8%
	3-4 days	314	10.5%
	5-7 days	139	4.6%
	Nearly every day	383	12.8%

Feeling lonely	Not at all	1390	46.2%
	1-2 days	601	20.0%
	3-4 days	303	10.1%
	5-7 days	142	4.7%
	Nearly every day	570	19.0%

**Table 11. Behaviours during past 2 weeks - average time (hours) spent each day**

Variables	Categories	Frequency	Percentage
On social media	0	16	0.5%
	Up to 1 hour	317	10.6%
	1-3 hours	824	27.6%
	4-7 hours	876	29.3%
	8 hours or more	953	31.9%
Outdoors	0	279	9.4%
	Up to 1 hour	732	24.6%
	1-3 hours	829	27.9%
	4-7 hours	585	19.7%
	8 hours or more	551	18.5%
Sleeping	0	30	1.0%
	Up to 1 hour	60	2.0%
	1-3 hours	325	10.9%
	4-7 hours	1569	52.6%
	8 hours or more	997	33.5%
Under influence of alcohol or other recreational substances	0	2685	90.0%
	Up to 1 hour	156	5.2%
	1-3 hours	91	3.0%
	4-7 hours	33	1.1%
	8 hours or more	19	0.6%
Exercising	0	738	24.7%
	Up to 1 hour	1477	49.5%
	1-3 hours	577	19.3%
	4-7 hours	136	4.6%
	8 hours or more	58	1.9%

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