The 2019 coronavirus disease (COVID-19) epidemic is a public health emergency of international concern and poses a challenge to not only physical health but also psychological resilience. Harnessing the power of social media, this study aims to survey the general public as to provide a detailed picture of daily life - its joys and challenges - in the context of people's experiences and their levels of psychological impact, anxiety, depression, and stress during the global pandemic COVID-19 outbreak.

ETHNOGRAPHY REPORT

COVID-19 PANDEMIC WITH REGARDS TO PEOPLES' REACTION AND THE FUTURE DEVELOPMENT OF INTERACTIVE SYSTEMS

DAVEROSE M.M. THOLLEY
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COVID-19 pandemic with regards to peoples' reaction and the future development of interactive systems

By Tholley, D. M. M

INTRODUCTION

Coronavirus (COVID 19) is by far the largest outbreak of typical pneumonia since the Severe Acute Respiratory Syndrome (SARS) outbreak in 2003 and other viruses, like Ebola. The outbreak was first spotted in late December 2019 when “clusters of pneumonia cases of unknown etiology were found to be associated with epidemiologically linked exposure to a seafood market and untraced exposures in the city of Wuhan of Hubei Province”, China (Wang, et al., 2020). Since then the cases have vastly increased spreading within and beyond the borders of Wuhan, first spreading to all 34 regions of China, then capturing over 184 countries worldwide. COVID 19, similar to the 2003’s SARS, is a beta-coronavirus that is known to spread to a human through intermediate hosts such as bats, “though the actual route of transmission is still debatable”. However human-to-human transmission has been observed to be through respiratory droplets, as a growing number of victims have no known animal exposure. The transmission rate is indicated to be 4.08, which is on average every case creates 4 new cases. Also, the average incubation is estimated to be about 5.2 days with significant variation among patients ranging from 2-14 days more or less. The fatality for a provisional case is about 2% earlier this year but it has since increased to 6.45 (Wang, et al., 2020).

Most governments around the world have made swift response efforts since the outbreak, Within days of it first case, the global pandemic, coronavirus has seen many entire countries worldwide effectively placed under mass quarantine, while many thousands of foreign nationals returning home from overseas have been asked to self-isolate at home or in state-run facilities. Previous research has shown “a profound and wide range of psychosocial impacts on people at the individual, community, and international levels during outbreaks of infection” (Wang, et al., 2020). With the foreclosure of businesses in the United States, nearly 20 million workers will likely be laid off or furloughed by July (Cooper & Wolfe, 2020). Also with the foreclosure of schools, worldwide, 91.3 % of enrolled students and startling 1,575,270,054 students in 191 countries are affected (UNESCO, 2020). This is hundreds of millions of people worldwide restricted to their
homes with many losing their source of livelihood. There is a wave of paranoia, economic stress, social isolation, loneliness, and experts worry about the rise in suicides (Reinberg, 2020). Also, research shows that even in non-infected communities 10% to 30% were very worried about the possibility of contracting the virus.

There is not much-known information on how coronavirus has impacted the lives of the general public, affected or otherwise, during the outbreak. To the best of my knowledge, most research focuses on identifying the clinical characteristics of infected patients, viruses, and the challenges of the government, especially in third world countries.

Therefore, harnessing the power of social media, this study goes beyond what scratching the surface, it aims to start with the general public’s perspectives about ongoing issues, as to get a detailed picture of daily life - its joys and challenges - in the context of people’s experiences during the peak of the coronavirus outbreak. This survey does not establish to serve generalizable ‘facts’ about populations as generalizing comes through triangulation and through developing and testing concepts. Insights, however, from this survey will inspire ideas to try and principles to apply for the future development of ground-breaking interactive systems.

**Scope and Delimitations**

Doing prior research via interviews surfaced a wealth of insights about their experiences and perspectives. Recurring themes were noted as key aspects, and the questionnaire was specifically tailored to gain further insight into these aspects. Of course, any observation or reflection on several individuals needs to be understood with the limited scope of depth and understanding an online survey and an hour’s discussion via social media affords. The intended purpose of this study is to effectively evaluate the respondent’s perspective taken from acquired insights into their thoughts and experiences. This does not claim to be a representative study. However, insights drawn out are strengthened by recurring themes along with several responses. And grounded in our knowledge and understanding arising from prior discussions with some individuals. I posted the link on my status for the general public, However, I targeted
a certain demographic of contacts (See Assumptions). I wanted to investigate how even when not in a high-risk zone, how will people react. I believe that if you are in a high-risk zone, it is expected for you to be very cautious, i.e. your reaction has been tainted by your environment. I wanted novel reactions (unbiased views) not clouded by fear of immediate situations, to get some insight on how people think technology will help ease their concerns (if any), and also to get thoughts on how COVID-19 is the catalyst for the future development of interactive systems, especially in developing countries.

This questionnaire was shared on Whatsapp because that's the only social media I am active at. However, the link will remain open for further research that deepens the insights from the perspective of a larger demographic. A major limitation of this survey is, it was more focused on knowing the why and how to adjust to the coronavirus with interactive systems as our aid. This was because of my efforts to capture the reaction at its most basic form. However, the analysis will be drawn from more accredited research on recent technologies. This way, I will align my responses to these researches for a more authentic presentation of people's reactions and the recent technologies developed to ease these worries.

**Assumptions**

Before conducting this survey, I, as the ethnographer had some assumptions about the demographic. Since there has not been much research done about the people's reactions to COVID-19, I didn't have much to work with. The closest research I found was done in china which was solely on the psychological impact of the current pandemic on mental health. So when I posted the questionnaire via social media, I assumed my contacts has never been diagnosed with coronavirus and are currently not in a highly unsafe or infected community that requires quarantine. I also made assumptions that they have never been at extreme risk of contracting the virus. I believe reality is only your reality. You are the only one who sees the world exactly as you do and this is because only you have lived your life. This is why I needed fresh perspectives. This isn't meant to discriminate or hinder persons diagnosed or otherwise with coronavirus from stating their perspectives, it simply means I assume my chosen demographic has
perspectives untouched by the harsh realities of our current state and free from bias. My intended demographic are contacts that I assumed where never diagnosed or in high-risk zones.

Some identifying characteristics were:

- Parties may be in a country with above 100 cases, but do not reside in a quarantined area
- Parties were online I was interested to see how coronavirus has impacted key aspects of these people's lives, and how they have made found ways to 'swim' with the current.

**Methodology**

I. **Setting and Participants**

I adopted a cross-sectional survey design to assess the public's immediate reactions during the epidemic of COVID-19 by using an anonymous online questionnaire. I tried to utilize the snowball sampling strategy, focusing on recruiting the general public, where the online survey was first disseminated to university students. Over the week, they were encouraged to pass it on to others, but only a small percentage responded.

II. **Procedure**

The Ghanaian government has recommended social distancing, self-isolation to the public to minimize face-to-face interaction. The link accompanied by a short description was posted on my status and sent out individually to targeted contacts. Potential respondents were then invited by existing respondents. The survey was completed through an online questionnaire, in English, through an online survey platform, Google Forms (See link below). The questions were well-reviewed and each has its unique significance. Data collection took place over 5 days (20 April - 25 April 2020), more or less a month, since Ghana declared COVID-19 outbreak as a public health emergency, and the first lockdown was enforced.
III. SURVEY DEVELOPMENT

Drawing inspiration from my prior research via online interviews, I included additional questions related to the COVID-19 outbreak. Socio-demographic data were collected on gender, age, residential status, employment status, household size, and support system. To capture the true essence of respondent's reactions, I used similarities across multiple stories from my prior research and clustered the insights emerging from these conversations around 5 themes: Finances, Works, School life, Support Network, Health (See below). The structured questionnaire consisted of questions that covered several areas (See Research Questions):

1. Demographic data (e.g. age, nationality, gender, nationality)
2. Employment Status
3. How has the pandemic affected your institution and measure taken
4. Concerns about COVID-19
   a. How it has affected your finances and measures taken
   b. It asks the importance of support groups
   c. How it has affected ones social life and what adjustments have been made
   d. How anxious are you about your health and precautions taken
   e. Thoughts on precautions taken by the government
   f. Major concerns and how technology can render a helping hand
These drawn-out themes helped identify the hypotheses underpinning the research.

These were:

- How people look after themselves and their wellbeing – what is their ‘survival kit’;
- Seeing foreclosures to many institutions, how have theirs (if any) ensured continuity;
- People’s attitude towards measures put in place by the current country of residence;
- Also following the foreclosures, how the precariousness of finances impacts an individual and what adjustments were made to cope;
- How concerned are people about their health and precautions are taken to ease these concerns?
- How their social life has been affected and the adjustments made to align with the social distancing and self-isolation advised.
- How people think technology will help ease their concerns (if any), and also, how COVID-19 is the catalyst for the future development of interactive systems, especially in developing countries

Therefore, to satisfy the scope of this study (See Scope and Delimitations), this survey employed a mixed type of methods as much as an online survey can afford. When necessary, closed-ended questions
where given followed by a lot of open-ended questions and rating scales (five-point Likert scale). This was to uncover trends in thoughts and opinions as to gain insight into people’s experiences and perspectives during the coronavirus outbreak. This questionnaire was designed and reviewed following the Pew Research Center’s criteria for Questionnaires design (Pew Research Organisation, 2012).

With these synthesized methods, this survey aims to reflect on emerging insights and cross-cutting themes shared by the respondent. These themes and areas of opportunity are set out in this report.

IV. Statistical Analysis

Descriptive statistics were calculated for socio-demographic characteristics, concern-related and precautionary measures, and technology-related variables were calculated according to the percentage of respondents per response concerning the number of total responses of a question. Also, data will be categorized by themes stated above (See Survey Development) and visualized by the use of techniques like pie charts and bar charts and summarized. For the validity of this study, we will calculate from the five-point Likert scale feedback question stated below (See Qu. 25). This will be calculated by averaging the Likert responses suggested by (Decker, 2018) and (Documentation Infocenter, 2014).

Working

\[
\text{SUM} = (1 \times 20) + (0 \times 40) + (13 \times 60) + (21 \times 80) + (24 \times 100) \\
\text{SUM} = 4880 \\
\text{Therefore average satisfaction} = 4880/48 \\
\text{Validity of Work} = 82.7\%
\]

The average validity of this work is 82.7 which means it did its intended purpose of
RESEARCH QUESTIONS

Based on the Doing prior research via interviews surfaced a wealth of insights about their experiences and perspectives. Recurring themes were noted as key aspects, and the questionnaire was specifically tailored to gain further insight into these aspects. Of course, any observation or reflection on several individuals needs to be understood with the limited scope of depth and understanding an online survey and an hour’s discussion via social media affords. The intended purpose of this study is to effectively evaluate the respondent’s perspective taken from acquired insights into their thoughts and experiences. This does not claim to be a representative study. However, insights drawn out are strengthened by recurring themes along with several responses. And grounded in our knowledge and understanding arising from prior discussions with some individuals. I posted the link on my status for the general public, However, I targeted a certain demographic of contacts (See Assumptions). I wanted to investigate how even when not in a high-risk zone, how will people react. I believe that if you are in a high-risk zone, it is expected for you to be very cautious, i.e. your reaction has been tainted by your environment. I wanted novel reactions (unbiased views) not clouded by fear of immediate situations, to get some insight on how people think technology will help ease their concerns (if any), and also to get thoughts on how COVID-19 is the catalyst for the future development of interactive systems, especially in developing countries.
This questionnaire was shared on Whatsapp because that's the only social media I am active at. However, the link will remain open for further research that deepens the insights from the perspective of a larger demographic. A major limitation of this survey is, it was more focused on knowing the why and how to adjust to the coronavirus with interactive systems as our aid. This was because of my efforts to capture the reaction at its most basic form. However, the analysis will be drawn from more accredited research on recent technologies. This way, I will align my responses to these researches for a more authentic presentation of people's reactions and the recent technologies developed to ease these worries.

**ASSUMPTIONS** and **Scope and Delimitations** mentioned above, the following questions were constructed:

1. Age (Multiple choice)
2. Gender (Multiple choice)
3. Nationality (Multiple choice)
4. Employment Status (Multiple choice)
5. Has the COVID-19 pandemic affected your institution (if any)? (Closed-ended questions)
6. If yes, what adjustments and measures have your institution made regarding the pandemic? (Open-ended questions)
7. Overall, how satisfied or dissatisfied are you with said adjustments by your institution? (Five-point Likert scale)
8. Are you concerned about your finances? (Closed-ended questions)
9. If yes, what compromises have you made in regards to said financial concerns? (Open-ended questions)
10. On a scale from 1-5, how have the stated adjustments helped ease your financial concerns? (Five-point Likert scale)
11. Are you in your home country? (Closed-ended questions)
12. Do you live alone? (Closed-ended questions)
13. Do you have a list of trusted contacts in case of emergencies? (Closed-ended questions)
14. Do you think family and support groups are important during this outbreak? Please explain why? (Open-ended questions)
15. On a scale of 1-5, how active is your social life? (Five-point Likert scale)
16. How are you coping with the self-isolation advised by the government and health officials? (Feel free to give your opinion) (Open-ended questions)
17. What adjustments have been made in your social life to align with the self-isolation demand? (Open-ended questions)
18. On a scale of 1-5, how concerned are you with your health? (Five-point Likert scale)
19. What precautions have you made in regards to health concerns? (Open-ended questions)
20. How have said precautions helped ease health concerns? (Five-point Likert scale)
21. Overall, what are your thoughts in regards to measures taken by the government of the country you currently reside in? (Open-ended questions)
22. Amid the COVID-19 pandemic, what are you most concerned about? (E.g health, finance, social life and/or work/school, etc.) (Open-ended questions)
23. Do you think the use of technology can help ease said concerns (Multiple choice)
24. Do you think COVID-19 will be the catalyst for the future development of interactive systems, especially in developing countries? Give reasons why? (Open-ended questions)
25. Did this survey make a good attempt to get insight into your experiences and concerns? (Five-point Likert scale)

Or check out the link (Even after this report, I will love to hear your thoughts and concerns during COVID 19): https://docs.google.com/forms/d/e/1FAIpQLScrTs5i9aBgx_XrCctSHXEA5WBGhLxocggDnozxWCB62mWMA/viewform?usp=sf_link
 RESULTS

Figure 2 shows the development trend of coronavirus worldwide since January. Since coronavirus was first declared a worldwide public health emergency about 2,845,858 cases and 197,846 deaths to date and the cases keep increasing exponentially. With more than 181 countries worldwide recorded at least 10 cases (worldometer, 2020).

**FIGURE 2: DEVELOPMENT TREND OF THE COVID-19 WORLDWIDE**

I. **SURVEY RESPONDENTS**

To date, 59 responses have been received via Google Forms (See link), where on average 11 respondents submitted per day, over a period of 5 days. Overall, the response rate was relatively slow, however since this research was more qualitative based, it is for the best that small sample size is used, as not to become a representative research.
II. Socio-demographic Variables

Majority of the respondents were women (54.2%) (See **Gender**), between ages 18-24 (40.7%) (See **Age**), where Sierra Leoneans (67.2%) (See **Nationality**), where students (47.5%) (See **Employment status**), are currently in home country (74.6%) (See **Current location**), and lived with family or friends (74.6%) (See **Living conditions**). Males scored lower scores with 45.6% responses. These variables will be categorized and associated with the themes below.

**Figure 3: Age**

![Age Chart](image)

**Figure 4: Gender**

![Gender Chart](image)
**Figure 5: Nationality**

Nationality

58 responses

- Sierra Leonean: 67.2%
- Ghanaian: 17.2%
- Nigerian: 6.9%
- Senegalese: 10.2%
- Ivorian: 16.9%
- Togolese: 23.7%
- Tanzanian: 16.9%
- Netherlander: 10.2%
- Japanese: 10.2%

**Figure 6: Employment Status**

Employment Status

59 responses

- Public Sector: 47.5%
- Private Sector: 10.2%
- Self-employed: 16.9%
- Student: 23.7%
- Unemployed and Job searching: 10.2%
- Retired: 10.2%
**Figure 7: Current Location**

Are you in your home country?

59 responses

- Yes: 74.6%
- No: 25.4%

**Figure 8: Living Conditions**

Do you live alone?

59 responses

- Yes: 74.6%
- No: 25.4%
III. SUMMARY OF THEMES

1. FINANCES

Precariousness generates fear and anxiety

The element of precariousness when it comes to finances was present in almost all responses. A total of 83% of respondents at least give some thought to their current finances, where 66.1% are anxious, 16.9 are concerned but not anxious, and 16.9% have no concerns (See Pie chart for finances).

With the foreclosure of business, millions of workers worldwide are losing jobs (Cooper & Wolfe, 2020), there is constant anxiety about the source of livelihood. The majority of these respondents were college students, 47.5% between ages 18-24 and 25-34 (See Employment status), and in developing countries like Sierra Leone, Ghana, Nigerian, Ivory coast, etc. 96.6% (See Nationality).

There was approximately 82.5% response when asked about compromises made (Qu. 9). This was an open-ended question and the majority of responses were about cutting down costs by buying provisions instead of street food and buying necessities only. However, the following responses stood out.

One respondent reflected on his/her finances:

“During this period Covid-19, I am trying to cut down on my expenses, I have lots of expenditure but earning only my salary. All my part-time work to complement my earnings is now closed due to the pandemic”.

Another wrote about trying to adjust as best as they can:

“Let's just say, I don't ask unless I need it”.

A cautious respondent wrote about the concept of preparing for the worst.

“I am trying to save as much of my income as possible as I do not know what to expect in the coming months. I have cut down considerably on expenses”.

A very anxious respondent reflected on his current financial status:

“I have not been able to receive money from international banks. Because of the COVID-19 bank services have become a bit hard, it is very scary, and I spend on nothing, except food”.

Another wrote:

I take 5% off my salary to help to people in the provinces to prevent them from coming in contact with the virus (buckets, hand wash & sanitizers)

However, not everyone hasn’t tried to make adjustments to their financial situation.
A Disgruntled respondent wrote:
“My lunch money has been cut down to 25% (by parents)”

Another wrote:
I haven’t really. Just hoping for a change
The said

These are just some insights from a selected few of the respondents. When people asked how the stated adjustments helped ease your financial concerns (See Qu. 10 and Figure 12), 28.6% were still anxious about their finances even after making the above-stated adjustments, 26.5% considered these adjustments helpful, and 44.9% were not sure how it helped. Using the averaging method on the five-point Likert scale suggested by (Documentation Infocenter, 2014), 1 represents 20 and 2, 3, 4, 5 are 40, 60, 80, 100 respectively.

Working
SUM = (9 x 20) + (5 x 40) + (22 x 60) + (8 x 80) + (5 x 100)
SUM = 2840
Therefore average satisfaction = 2840/49
Average satisfaction = 58%

These results show the above state adjustments are the temporary solution but there are underlying factors in all this. Making the right adjustments is a step in the right direction, however, People need a source of income especially the youths,

Despite Africa having the youngest population in the world, 60% of the unemployed are youths (Boudreaux, 2017). In western countries, nearly 30% of high school students are employed in a job for at least a portion of the school year (Walden University, 2014). It is also estimated that about 70-80 percent of college students are active in the labor market while enrolled in college (The College of St. Scholastica, 2018). This means students in these developing countries are entirely dependent on family members, so if their only source of income is threatened this can lead to feelings of despair, anxiety, stress, and depression. A more expansive, resourceful, and inclusive recovery is crucial so that the impact of the COVID-19 crisis on labor markets becomes less far-reaching.
Therefore, Digi-work is the future as far as the eye can see. African governments and organizations
should invest in more online jobs not only for the established workers but also for students. However, because access to advanced technology is very expensive, the government should harness the power of the internet and invest in online interactive educative systems where users can learn skills. In this way, students and workers alike can use these resources, build their skills, and begin their Digi-work. For example, since online banking is the best solution, they build safer technologies with less credit risk. Also, courses on financial management should be taught on all online platforms. They should invest in the online banking system. They should also invest in budgeting systems that will help people learn and use to budget, for example, an Artificial Intelligence budgeting app that is connected to all your bank and mobile money platforms, and your shops. When you receive money, it will look at your past inputs, and see where you need to cut expenses. If it will also try to find the prices of the shops around you and find the cheapest and nearest. In this way, people can get help to shop the absolute necessities. African governments should invest in building job portals where new positions and opportunities are posted (See Work / School LiFE for more info).

**Figure 9: Pie chart for finances**

Are you concerned about your finances?

59 responses
2. Work / School Life

COVID-19 could cause a permanent shift towards working from home

Seeing the foreclosure of many institutions, these institutions should shift their working patterns to help adjust to this pandemic. In the previous theme (See Finances), we have established that the majority of the respondents were female and were college students, between ages 18-24 and 25-34 and almost all were in developing countries. When asked if the COVID-19 pandemic affected your institution, 79.3% of the respondent replied yes (See Institutions affected); and when asked what adjustments and measures their institution (if any) have made regarding the pandemic, appropriately 81% of respondents gave their reflections (See Qu. 6). This was an open-ended question and responses were however more diverse that of finance. However, the following responses stood out.

One respondent reflected on his/her work life:

"We work on alternate days to observe social distancing in the office rooms. We also work from home."

Another wrote about his/her experience:

"The University closed down completely, some of us were taking our first semester exams, which had to be postponed. Recently we had 3 new cases in the University house and some academic staff were quarantined. We are currently at home waiting for further instructions from the government."

A respondent wrote about adjustments made by their organization.
"We work in the water sector. And water is very important in this public health crisis. We are taking preventive precautions for our water vendors and staff. There have handwashing stations at all our water kiosks, we have made cloth face masks for our vendors, we are trying to switch to mobile money for sales to limit contact, enforcing social distancing at our kiosks, etc. The demand for safe water has been very high during this pandemic and we try to keep up."

A respondent reflected on school life:

"My school has arranged online classes to help students with revisions during the COVID-19, this 3rd term"

A lecturer, I assume said:

"Working remotely and teaching classes online"

A very anxious respondent reflected on his/her work experience:

"Many staff have been laid off to make the social distancing effective".

Another wrote:

"We have a protocol in place that partner enterprises have to follow.

A respondent wrote on his company policy:

"Some of the adjustments the company has made is by exercising some of the online platforms where the worker can communicate and work as if it is a live working environment. Within regards to the measures, the company has set a policy that all workers should adhere to the preventive measures instituted by W.H.O and the internal preventive measures.

A respondent reflects the hindrance to his business:

"Our company operates within the value chain of the manufacturing sector as suppliers of industrial consumables. We are very much affected by challenges in the global supply chain to the fact that most countries have shut the borders and ports and this has significantly affected the importation of goods for our client. We are therefore selective in the kind of orders we take. We are also now aggressively pursuing businesses whose raw materials are mostly locally sourced".

A business owner, I assume said:

"1. We have rationalized our operational cost by downsizing our staff
2. We have also increased payment terms for customers who have reduced production thus affecting our cash flow"

These are just some insights from a selected few of the respondent but it says so much about the technological challenges in Africa and the efforts to overcome them. When people were asked how satisfied or dissatisfied they were with stated adjustments done by respective institutions, approximately 41.8% were unsatisfied by the above-stated adjustments, some more than others (See Adjustment satisfaction scale). Using the averaging method on the five-point Likert scale suggested by (Documentation Infocenter, 2014), 1 represents 100 and 2, 3, 4, 5 are 80, 60, 40, 20 respectively.
Working

\[
SUM = (10 \times 20) + (4 \times 40) + (18 \times 60) + (15 \times 80) + (8 \times 100)
\]

\[
SUM = 3440
\]

Therefore average satisfaction = \( \frac{3440}{55} \)

Average satisfaction = 62.6

This shows that even though African countries struggle with access to technology, they have taken a step in the right direction to bring daily interaction to an online platform, therefore adhering to the social distancing advised. The government should invest in platforms that will help people work in a virtual environment. Working in a physical environment is unsafe, so the government and organizations need to shift their working patterns to remote working (See Digi-work ). The government can advise the use of free tools from Slack and Zoom and established giants including Google and Microsoft. Or the government can invest in new startups to help boost Africa’s labor market to build such online platforms. Also, small offices can make the switch to remote working, building on pre-existing infrastructure such as office chat groups and critical tools can be transferred to online platforms for remote access, Schools can apply these same remote learning method. Many schools have switched quickly to using this method, however, others are lagging, and they can try to use the free online platforms. To buy them time to properly arrange, they can use social media to communicate with students until the system is in place.

**Figure 11: Institutions affected**

Has the COVID-19 pandemic affected your institution (if any)?

59 responses

![Pie chart showing 79.7% Yes, 20.3% No]
3. Health

During this crisis, it is normal, even expected to be anxious and cautious about health. Regarding concerns about health amid COVID-19, about 71.1% were anxious, 16.9% anxiety, regarding health, had a normal concern, and only 11.9% not anxious. Using the averaging method on the five-point Likert scale suggested by (Documentation Infocenter, 2014), 1 represents 100 and 2, 3, 4, 5 are 80, 60, 40, 20 respectively (See Concerns about health).

Working

\[
\text{SUM} = (3 \times 20) + (4 \times 40) + (10 \times 60) + (10 \times 80) + (32 \times 100)
\]

\[
\text{SUM} = 4900
\]

Therefore average satisfaction = \(\frac{4900}{59}\)

Average anxiety = 83.1%

It is expected that anxiety levels are high especially since coronavirus has claimed infected and many lives so. When asked about precautionary measures taken regarding the pandemic (See Qu. 19), appropriately 91.4% of respondents gave their reflections. This was an open-ended question and responses were all necessary precautions. However, the following responses stood out.

One respondent reflected on his/her work life:

“Adhering strictly to the regulations put out by WHO and the local task force concerning the COVID 19.”

Another wrote about his/her experience:
“I have a mask and try to maintain social distance where I can. I also practice good personal hygiene. I take vitamins in addition to the meds I take.”

A respondent wrote about all adjustments made.

“Leaving home only when it’s necessary and patronizing a less crowded marketplace to shop. My family and I have been taking cold, malaria, worm, etc. medicine, and we now exercise.”

A respondent reflected:

“I have a mask and try to maintain social distance where I can. I am also eating well, keeping good hygiene, exercising regularly and sleeping well, taking vitamin C”

Another respondent wrote:

“Stay home, I wash and use hand sanitizer always and also regularly check my temperature”

When people were asked how said precautionary measures have eased their concerns, approximately 66.6% were satisfied with measures taken, 26.3 were ok, and 7.1% still had high anxiety levels (See Adjustment satisfaction scale).

Using the averaging method on the five-point Likert scale suggested by (Documentation Infocenter, 2014), 1 represents 20 and 2, 3, 4, 5 are 40, 60, 80, 100 respectively.

**Working**

\[ \text{SUM} = (3 \times 20) + (1 \times 40) + (15 \times 60) + (19 \times 80) + (19 \times 100) \]

\[ \text{SUM} = 4420 \]

Therefore average satisfaction = \( \frac{4420}{57} \)

Average satisfaction = 77.5%

Also when people were asked about the precautionary measures by the government (See Qu. 21), people reflected on their previous experiences:

One respondent reflected:

“The Government has really put in a massive effort in combating the virus. Measures like Social distancing, wearing of mask in public, grounding of all flights, Curfew, etc. are all in place.”

Another wrote about his/her experience:

“It’s paramount that these measures are taken into consideration because it helps oneself from getting contact also in spread to our love ones.”

A respondent shared.

“The government seemed to have adopted a touch and go, wait and see approach so not confident of the outcome of such an approach. Again this is understandable considering we are all on uncharted water.”

A respondent reflected:

“The Japanese government will provide each citizen with about $1000 in the next month as financial support which I strongly believe is an incorrect allocation of money since some people (myself included) are fortunate enough as of now to have our salaries paid in full and have no need for
financial support from the government. There should be a criterion for money allocated for example for the disadvantaged. Overall I think the government’s handling of the situation is lax as compared to other countries.

Another respondent wrote:

The strides made by the government concerning reducing/slow down the infection rate is good and timely. Nevertheless, there is more room for improvement to attain a better result.

One respondent wrote:

“While I commend the government, I believe more could be done by addressing medical workers’ financial and health concerns and performing more tests per day”

These are just some insights from a selected few of the respondent but it says a lot about the current mental status of these respondents. There is a need for more systems for people to stay connected (See Social and Support Networks) and for new systems to help people with uplifting information and new ways to help prevent the virus. The government should implement social media filters, where any incorrect information on COVID-19 is taken down and only uplifted messages are spread. Facebook is implementing an AI that filters information and takes down incorrect ones (TNW Neural, 2020). The government should utilize these AI tools to get more insight into the general public and create measures accordingly. Also, Governments should be more vocal about their vision as in this time on uncertainty, transparency is needed. This can be done through an AI that shows the current state of cases in their countries and most importantly measures put in place. By doing this, people can read and be well informed about the measures taken in every nook and cranny of the country. This can help people gain confidence and thereby adhere to the measure implemented by the state.

**Figure 13: Concerns About Health**

On a scale of 1-5, how concerned are you with your health?

59 responses

![Bar Chart]

<table>
<thead>
<tr>
<th>Score</th>
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<th>Percentage</th>
</tr>
</thead>
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</tr>
<tr>
<td>5</td>
<td>32</td>
<td>54.2%</td>
</tr>
</tbody>
</table>
FIGURE 14: PRECAUTIONARY MEASURES SATISFACTION SCALE

How have said precautions helped ease health concerns?
57 responses

4. SOCIAL AND SUPPORT NETWORKS

With the number of people infected by the 2019 coronavirus (COVID-19), which is rapidly increasing worldwide, the outbreak has seen the foreclosure of many businesses, schools, and other social places. Studies have reported negative psychological effects including post-traumatic stress symptoms, confusion, and anger. Stressors included longer lockdown periods, infection fears, frustration, boredom, inadequate supplies, inadequate information, financial loss, and stigma. Some researchers have suggested long-lasting effects. To get an in-depth view of people viewed the self-isolation demand, respondents were asked if they live alone. There was a 100% response to this question and the majority, 74.6% answered yes (See Living conditions) where the remaining 25.4 percentage replied no. Also, respondents were asked if they have a list of trusted contact in case of emergencies, there was approximately a 96.6% response, where the majority, 87.7% reported yes, 5.3% were unsure and 7% reported no. These show that the respondents know the value of staying connected. However, to understand the depth of the impact of COVID-19 on social interactions, the respondent was asked how socially active before the pandemic (See Living conditions). There was a 100% response where the majority was not quite active, 29.3%; 25.9% had a normal social life, 19% reported no social life at all, 15.5% reported a fairly active social life and 10.3% reported a very active social life.
Using the averaging method on the five-point Likert scale suggested by (Documentation Infocenter, 2014), 1 represents 100 and 2, 3, 4, 5 are 80, 60, 40, 20 respectively (See Concerns about health).

**Working**

\[
\text{SUM} = (12 \times 20) + (17 \times 40) + (15 \times 60) + (9 \times 80) + (6 \times 100)
\]

\[
\text{SUM} = 3140
\]

Therefore average satisfaction = 3140/59

Average social level = 53.2%

This shows that the majority had an average social life, therefore, actions need to be taken to help people not to fall into depression or despair. Respondents were also how they were coping with the self-isolation demand enforced by governments (See Qu. 16). There was also a 100% response, where a majority have tried their best to adhere to precautions demanded. These were some of the responses.

One respondent reflected:

“Well honestly am always at home when colleges are closed so it's kind of ‘normal’ am just worried about school and how this virus will affect our course work, it's really difficult because we have put in so much work into this academic year.”

Another wrote about his/her experience:

“I am in a way an essential worker. I work in the water sector. My fear of staying safe during a commute is a challenge. The government should provide a safer way to commute for its workers”

A respondent shared.

“IT's hard to follow to the letter, but for the greater good makes it feel better”

Another respondent reflected:

“Yes, family and support groups are important during this outbreak because the people are already stressed out and anxious about this deadly virus and family and support groups at least play a vital role in distracting, motivating and uplifting the spirit of people and they provide a plethora of other support mechanisms which is what everyone needs right now.”

A skeptical respondent wrote:

“Self-isolation is a good idea when there’s easy access to needed health care services.”

One respondent wrote:

“The self-isolation is a very good practice to help curtail the spread of the virus but how it is done raises so much concern. One of the things government is aware of and deliberately ignore is the issue of citizens’ wellbeing during the isolation process. All they can in their power is to ensure people stay at home.”

Another shared;
“It’s easier said than done. At first, we all loved it (students) but as days went by doing the same things every day while hearing and seeing how bad things are in other places, it becomes sad and depressing.”

One respondent reflected:

“For me as a medical staff I think we are really doing or best and for those observing the social distancing they are making our work a bit easier”

Another wrote:

“It’s not been easy... because keeping at home not having any activity to do aside from having classes is making me sick. Because all I do is have a class for few minutes to an hour, sleep, wake up, eat, trying to find something doing, but staying one place for a long period is not healthy and knowing that I’m not financially stable is even the worse level of isolation because there’s no way I can get what I need.”

An unusual response was:

I am home and I am enjoying my stay. I work from home too so it’s really cool

These responses reflect the concern for finance and school/work life (See Finances and Work / School Life). When asked what adjustment has been made to align with the self-isolation, there was approximately an 81% response (See Qu. 17). These were some of the responses:

One respondent reflected:

“I really miss going to church. Especially the hymns from the church. I, however, make do with the service conducted on TV.”

Another wrote about his/her experience:

“I don’t visit friends anymore, but I do try to converse with them as much as possible”.

A respondent shared.

“Well we don’t go out and we try to observe the ‘social distancing rule’s but we have social media that’s the platform where everyone assembles.”

Another respondent reflected:

“Reading and learning new things.”

One respondent wrote:

“I try my best to stay home and if I do end up going out it’s only to get necessities to store my home with foodstuff and water and first aid medication”

To get further insight, respondents were asked if they think family and support groups are important during this outbreak (See Qu. 14). This was an open-ended question asked to open ground for
conversation as much as an online survey can afford. It had a 100% response, where the majority if not all, realize the importance of support groups. These were the responses that stood out:

One respondent reflected:

“Yes family is important but if none are close then support groups are really important because that way they can help solve financial problems and provide foodstuff for those that do not have. That help can go a long way for many.”

Another wrote about his/her experience:

Yes, since I live alone I believe frequent communication with friends and family has become more necessary than ever in order not to feel completely alone or isolated.”

A respondent shared.

“Yes. The mental toll that this pandemic has on people is great. For those on lockdown, staying home can be stressful especially if you don’t earn money and you’re idle. Most homes are not safe places, but their warmth can keep the cold wave of depression away”

Another respondent reflected:

“Yes, family and support groups are important during this outbreak because the people are already stressed out and anxious about this deadly virus and family and support groups at least play a vital role in distracting, motivating and uplifting the spirit of people and they provide a plethora of other support mechanisms which is what everyone needs right now.”

A skeptical respondent wrote:

“The nature of the outbreak makes it difficult to rely on family and support groups because we are all in the same situation.”

One respondent wrote:

“Family and support groups are important because we need to be aware of the current status of our family members and to ensure they are perfectly safe by adhering to the precautionary measures. Covid–19 has nowhere to live except the homes which comprise of our family members. If we want to fight a winning battle then we need to work with support groups to end this scourge.”

Another shared;

“Yes support groups and family members are important to ease the stigma of the COVID 19 because everyone can use a friend at this time”

These show the need to design effective anti-anxiety and E-sensitization to give people the right information they need to remain calm and practice to the precautionary measures of the country. These systems can be designed with the use of social media, given the high access rate of social media, especially in developing countries where it is the most accessible form of technology. This is because with the correct information being transferred, the fear and anxiety will be lowered. For example, Facebook events called “I’m ok, you get the medical mask first”, was launched in Taiwan
earlier this year. It was to give correct information that a medical mask is not always necessary for every person; instead, the maximum effect of using medical masks is leaving them to those who are really in need (Lin, 2020). The government should establish a support group in every community where these support groups (volunteers from that community) reach out to disadvantaged parties in their designated communities. Also, tech startups should design systems that can allow these support groups in the country to sign up and ask for funding and outline their past and future projects. The communities will then rate the project and depending on the rate increases credibility for future projects.

**FIGURE 15: SOCIAL LIFE**

On a scale of 1-5, how active is your social life?

59 responses

![Bar chart showing social life activity levels](chart.png)

<table>
<thead>
<tr>
<th>Activity Level</th>
<th>Count</th>
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<tr>
<td>5</td>
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</tbody>
</table>

5. **THE KEY**

“We need your commitment, so we can turn those ideas into reality and work with public health agencies and frontline health workers to put this pandemic to rest,” said WHO Director-General, Dr. Tedros Adhanom Ghebreyesus, in his welcoming remark. “We can only tackle this global threat – and get our economy back on track – by working together.” Amid the coronavirus people were asked what concerns them more (See Qu. 22); this was an open-ended question to fully understand the extent of the pandemic from their viewpoint. There was a 100% response. Most replied about their health and finance. Where few wrote about school. These were some of the responses...
One respondent wrote:
“*My concerns are when school will reopen so I can resume classes*”

Another shared:

“*I am concerned about the government approach to combating this virus because it keeps increasing rapidly.*”

However, there is a consensus that the cords that bind the above themes together. Respondents were asked if they use of technology will help ease concerns, there was a 100% response reporting yes. (See Qu. 23). Also when respondents were asked about their thoughts on if COVID-19 will be the catalyst for the future development of interactive systems, especially in developing countries. There was a 100% response where the majority of the responses reported yes but two stood out.

One respondent wrote:

“*I am not saying technology is the key to all our problems but we should find ways to include it in the battle against COVID-19. In doing this it can be able to solve most concerns if not all*”

Another shared;

“*I really believe it will help us in the quest for remote learning and working environment.*”

This is why technology companies have provided overwhelming efforts to support WHO in the fight against COVID 19 pandemic. On 2 April, 30 of the world’s leading digital technology experts gathered in a virtual roundtable to help advance WHO’s collaborative response to COVID-19. (World Health Organization, 2020). Even Bill Gates weighed in on his GatesNotes site with a lengthy description of what he sees is needed to fight the pandemic, arguing that innovation will be critical to stemming the damage from COVID-19 (Mingis, 2020). He offers a pandemic battle where he made likened the pandemic to World War II and said as ground-breaking technological innovations helped end the war faster, so also it would do again.
CONCLUSION(S)

At the peak of the COVID-19 pandemic, two-thirds of respondents are concerned about their finances, four-fifths worry about school and work, and there is a very high anxiety level concerning health and many people adhering to the precautionary measures by the government. The governments show also ensure transparency of information about the current status and should put proper systems in place. Governments should also harness the power of social media and other online platforms to communicate or otherwise with the residents, and put measures in place that will better serve them. Organizations should move their working patterns to a virtual environment to best adhere to precautionary measures. These concerns as challenges, but as opportunities for further research and innovation. All hands should be on deck as we try to fight this battle, no one and nothing is insignificant.

"Life isn't about waiting for the storm to pass. It's about learning how to dance in the rain." Or as Sting sings, "When the world is running down, you make the best of what's still around."

- Vivian Greene (Author)
REFERENCES


TNW Neural. (2020). *Social media firms will use more AI to combat coronavirus misinformation, even if it makes more mistakes.* Retrieved from TNW Neural: https://thenextweb.com/neural/2020/03/17/social-media-firms-will-use-more-ai-to-combat-coronavirus-misinformation-even-if-it-makes-more-mistakes/


**NOTE** My sincerest apologies for the late submission, but I feel very passionate about this topic and I wanted to give you my utmost best. Apart from the allocation of grades, I would love to hear your feedback and a fresh perspective on how I can better look into this issue.