The Interaction of COVID-19 Related News & Well-Being in India

Anchal Khandelwal

Meghnad Desai Academy of Economics (MDAE)

Dissertation

(24-07-2021)

Acknowledgements

I thank MDAE for accepting me as a student in this course, my decision to enroll here can be best described as serendipitous. I would like to thank Dr. Shagata Mukherjee for advising not just for this dissertation but for my academic and professional journey too. I would also like to thank Mr. Anirudh Tagat and Monk Prayogshala for constantly mentoring me. I would like to thank my fellow RAs for helping me make sense of Stata commands; I have thoroughly enjoyed our Tuesday/Wednesday afternoon discussions about everything developmental and behavioural. I thank Ritika Divekar, Vijay Jainani, Adarsh Rohra, Tanishq Quraishi, Purvi Morwal, and Vivek Parashar for being my friends.

Abstract

As many governments around the world imposed utopian lockdowns and stringent measures to curb the spread of COVID-19, the nature of all transactions and interactions drastically changed with absolutely no notice. To make things worse, just when developing countries such as India were under the misconception that they had managed to control the spread of this uncertain and deadly virus, they were swept with a second wave of a more lethal variant of the virus. What is the impact of the aforementioned on the well-being of individuals across the world? Are there factors other than COVID-19 itself that are adversely impacting personal and perceived well-being? This study, with the help of a quantitative survey and qualitative interviews, aims to answer the above-mentioned questions. By employing ordered logistic regression analysis, this study finds that, the frequency with which survey respondents follow COVID-19 news positively and significantly impacts their well-being. Those who frequently follow COVID-19 news frequently are more likely to experience higher levels of self-reported well-being than those who do not.

Section 1 – Introduction & Literature Review:

Against the backdrop of the ongoing pandemic, it is not surprising that there has been a significant increase in the number of Google-searches for the word 'resilience[1]' in the year 2020 (Sinyor et al 2020). COVID-19 has disrupted and drastically changed the quality-of-life of citizens, livelihoods, and the nature of human interactions. Centre for Monitoring Indian Economy's (CMIE) data, as of April 2021, shows that unemployment levels in the country have steadily been above 6.5%.

While unemployment comprises just one aspect of the larger impact of COVID-, the adverse effects of unemployment on the well-being of citizens cannot be overlooked. Russo et al (2021) study the impact of lockdowns leading to citizens working from home on general well-being and productivity. They find that, although the software engineers in their sample adapt to the new working conditions, stress (increased during COVID-19), boredom, and distractions negatively predict well-being and productivity. Thus, it is important to gauge the general well-being levels of individuals not just for their psychological and emotional health but also for the global economy. Thus, as highlighted in figure 1, one could view COVID-19 as an external shock to well-being, and by extension productivity.

In the Indian context, Grover et al (2020) find that 38% respondents experienced anxiety, 10.5% experienced depression, and 71.7% reported poor general well-being. Although all countries are going through a tough time dealing with COVID-19, it could be true that the situation is slightly worse off for the developing countries. India's severe unpreparedness at

[1] Resilience is defined as the capacity to bounce back from difficulties (https://languages.oup.com/google-dictionary-en/)

the beginning and during the second wave of COVID-19 manifested in the form a severe oxygen shortage leading to the death of approximately 512 citizens between April and May (Madhavan R, 2021). However, if researchers[2] are to be believed, both cases and deaths were severely underreported during the first and second wave of COVID-19; which means that, the number mentioned earlier could very well be mere fraction of the actual number of deaths due to a shortage of oxygen, among other resources.

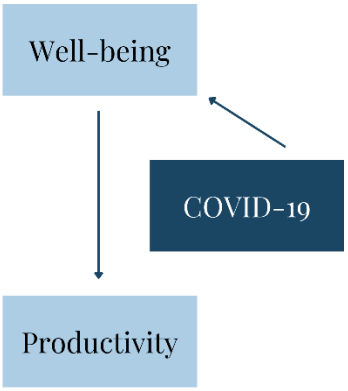


Figure 1: Link between well-being & productivity, and an external shock COVID-19

COVID-19 has exposed India's poor health infrastructure like no other pandemic or epidemic in history. Medical professionals, frontline workers, and doctors are being over-worked due to the massive caseload. Ghosh et al (2021) find that the doctor-to-patient ratio of approximately 1:1,456 have and insufficient medical facilities have only worsened the hardships of medical professionals. To add to this problem, there are only 8.5 hospital beds per 10,000 people. Continuous rule following since March 2020 has also led to Caution fatigue[3] among citizens, leading them to not follow social distancing and mask wearing practices as seriously as they should. This, among other reasons lead to an increase in the caseload during the second wave (Ghosh et al, 2021). A survey by Khasne et al (2020) shows that 27% medical professionals experienced work-related burnout[4], and 53% workers experienced pandemic related burnout.

Owing to the nature of the systemic causes of their problems, and the problems themselves, it is difficult to capture the experiences of the marginalized, especially during a pandemic when resources are scarcer than ever before. Azeez E P et al (2021) find the following themes that underline that the experiences of migrant Indian women during the ongoing pandemic: loss of livelihood leading to debt, compromises, a sense of captivity and the burden of responsibility, reduced access to resources, and low support. The sample is limited to the National Capital Region only.

---

2 https://www.thehindubusinessline.com/news/national/covid-cases-deaths-being-underreported/article34684003.ece

3 https://www.moneycontrol.com/news/trends/current-affairs-trends/covid-19-what-is-caution-fatigue-and-how-it-might-have-led-to-second-coronavirus-wave-in-india-6677071.html

4 https://www.ahrq.gov/prevention/clinician/ahrq-works/burnout/index.html#:~:text=The%20health%20care%20environment%E2%80%94with,of%20sense%20of%20personal%20accomplishment.

Social scientists and researchers are tirelessly working to bring to the fore the socio-demographic effects of the pandemic. This study is one such attempt to bridge the knowledge gap in the differences in COVID-19 experiences of individuals, and consequently, their well-being. While existing research highlights the impact of COVID-19 on the well-being and productivity of specific groups of people, this study is an attempt to investigate the same for the general urban population. Additionally, this study also tries to highlight the potentially invisible impact of COVID-19 by interviewing women employed as domestic helpers in the city of Mumbai. With the aforementioned social context at its core, this study investigates the COVID-19 related factors that impact well-being.

The rest of the paper is organized as: section 2 presents the research questions of interest, explains the methodology, and provides descriptive statistics on collected survey data; section 3 highlights the quantitative (regression models, hypotheses), and qualitative (insights from the interview and qualitative responses from the survey) results; section 4 concludes.

Section 2-Methodology & Data:

This study aims to answer the following research questions:

1) Has the well-being of Indians been impacted by the COVID-19 pandemic?
2) If yes, which COVID-19 & non COVID-19 related factors impact well-being?

COVID-19 related factors, in the second research question, include survey variables which measure if a respondent has contracted COVID-19 in the past, if they have experienced any COVID-19 related deaths in their family or friends, how often they follow news related to the virus, etc. Non-COVID-19 related factors include demographic variables. The paper aims to understand the COVID-19 experiences of urban Indians. This group may not necessarily include those who have contracted the virus. Therefore, with this context, this study seeks to understand the predictors of self-reported well-being of adult urban Indians. This study used a two-pronged approach to answer its research question(s) - a quantitative survey and qualitative semi-structured interviews.

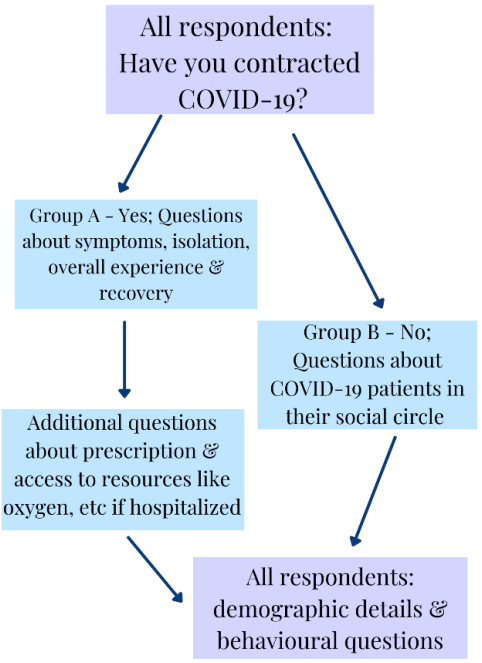


Figure 2: Survey design

The quantitative survey was administered in June 2021, with the help of Google forms (all questions can be found in Appendix 1). The questions were divided into two groups and some questions were asked only to a specific subset of all respondents. The first division happened on the basis of the respondents who had and had not contracted COVID-19; the remainder of the paper will refer to those who had contracted the virus as Group A, and those who had not as Group B, as explained in Figure 2. Based on this answer, a series of questions around one's covid experiences were asked.
The respondents who did contract covid, were questioned about the severity and duration of their symptoms, their COVID-19 exposure, and if they experienced covid brain fog[5]. COVID-19 exposure is measured with the help of a question about the age-group of people that the respondent has been residing with since the beginning of the pandemic, specifically, senior citizens, among others. Within Group-A, those who isolated at a hospital were asked additional questions on the items they were prescribed, such as oxygen, remdesivir, plasma, etc., and if each or any of these had to be procured externally by someone in their social circle. The second wave of COVID-19 in India was accompanied by an even more acute shortage of hospital beds, Intensive Care Unit (ICU) beds, and other resources like oxygen, etc (Pandey & Nazmi, 2021). Citizens resorted to social media platforms such as Twitter[6] to get access to resources. Also, in an ideal setting with efficient resource allocation, the prescribed items should have been readily available at the hospital and other medical centres. Thus, to understand the extent of this shortage in resources, these questions were asked.

Respondents who had not contracted COVID-19 (Group-B: about 72% of the total) were asked similar questions about oxygen, remdesivir, and plasma access with respect to those in their social circle who were prescribed them. The final section of questions was common for all respondents. Questions in this section were about respondents' behavioural traits such as loss aversion, time preference, present bias, and demographic details. To obtain a more nuanced understanding of COVID-19 experiences, respondents were also asked quantitative and qualitative questions about their well-being in this section. The quantitative question about the respondents' perceived personal well-being asked them about the degree to which they agreed with the statement that COVID-19 has affected their well-being. The responses to these were recorded on a Likert scale ranging from 'strongly disagree' to 'strongly-agree'. This is the main outcome variable of interests in the quantitative analysis that follows.

The quantitative survey, as a function of the platform it as administered on, and its language, leaves out the significant portion of the population. Individuals with no smart phones, above average understanding of the English language, and with little to none numeracy skills, cannot take the survey. Thus, qualitative interviews of women employed as domestic helps were also conducted. This specific demographic was chosen because, the lockdowns imposed to curb COVID-19 have adversely impacted the marginalized more (Bhandare N., 2020); and, women belonging to this specific income group are at the heart of all marginalized groups. Some interview questions, such as those about COVID-19 exposure, etc., overlapped with the survey questions. Additional questions about the interviewees' personal beliefs about COVID-19, the vaccines, and the impact of lockdown on their and family's life were asked.

Data description:

[5] COVID-19 brain fog, also a symptom of 'long' COVID-19 is characterized by an inability to think clearly, low/no motivation, etc. (https://www.technologynetworks.com/neuroscience/news/brain-fog-and-other-symptoms-persist-for-months-after-covid-19-infection-349307)

[6] Twitters users would share (tweet & retweet) links and numbers of resources/resource persons. One such user created a bot that would collate all of these links such that one would simply have to search on the bot and they would find all resources being shared on Twitter (https://covid19-twitter.in/)

The survey received 182 responses of which 180 were used for analysis. 62% of the respondents identify as female, 37.3% as male, and 0.57% as non-binary. 37% of the respondents are vaccinated, and 61% express an interest in getting vaccinated. A global survey by Lazarus et al (2020) find that 72% Indians would like to get vaccinated when there are safe vaccines available for administration; thus, the low portion of vaccinated respondents could be due to insufficient survey responses. Average annual income of respondents is between Rs. 15-30 lakh. 63% respondents follow Hinduism, and 23% follow other faiths such as Buddhism, Jainism, Zoroastrianism, etc. Respondents are between 19-70 years of age, and the mean age is 29 years. 50% respondents are between 21-23 years of age.

Table 1: Descriptive statistics of survey data

Variable	Obvs	Mean (Std. Dev.)	Min	Max
Respondent who have contracted COVID-19)	180	.283 (.452)	0	1
Duration of Symptoms	51	2.412 (.92)	1	4
Number of Symptoms	47	5.638 (2.801)	1	15
Self-Perceived Severity of Symptoms (1-10)	51	4.118 (2.463)	0	10
Has anyone in the respondent's social circle contracted the virus?	177	1.209 (.496)	1	3
Isolation Location	51	1.294 (.832)	1	4
Were they prescribed oxygen?	3	2 (0)	2	2
Did they have to procure oxygen externally?	3	2 (0)	2	2
Were they prescribed remdesivir?	3	1.667 (.577)	1	2
Did they have to procure remdesivir externally?	3	1.667 (.577)	1	2
Were they prescribed convalescent plasma therapy?	3	2 (0)	2	2
Did they have to procure the plasma externally?	3	2.333 (1.155)	1	3
Time taken to get COVID-19 test result	51	2.98 (3.841)	0	15

(days)				
Need for multiple COVID-19 tests	50	1.86 (.351)	1	2
Did they experience brain fog?	51	1.706 (.46)	1	2
For how long did they experience brain fog? (weeks)	17	2.882 (2.118)	0	8
Group B only: was anyone in their social circle prescribed oxygen, etc?	126	.476 (.501)	0	1
Did they have to procure it externally?	126	1.857 (.797)	1	3
COVID-19 related deaths in the respondent's social circle	180	1.606 (.49)	1	2
Has the respondent been living with senior citizens since the pandemic began?	180	1.389 (.489)	1	2
Does the respondent wish to get vaccinated?	180	1.767 (.964)	1	3
If they had the choice, which vaccine would they choose?	179	2.413 (1.021)	1	5
Perceived Vaccine Safety	180	1.094 (.293)	1	2
News tracking frequency (How often do they follow COVID-19 related news?)	180	4.106 (1.482)	1	6
Perceived COVID-19 impact on well-being	180	4.339 (.853)	2	5
Have they done volunteer work for COVID-19 relief?	175	1.731 (.444)	1	2

Have they donated for COVID-19 relief measures?	172	1.366 (.483)	1	2
Risk Preference	180	1.583 (.818)	1	3
Loss aversion	180	1.972 (.736)	1	3
Present Bias	180	1.756 (.682)	1	3
Impatience	180	1.9 (.694)	1	3

Table 1: Descriptive Statistics of Survey Variables

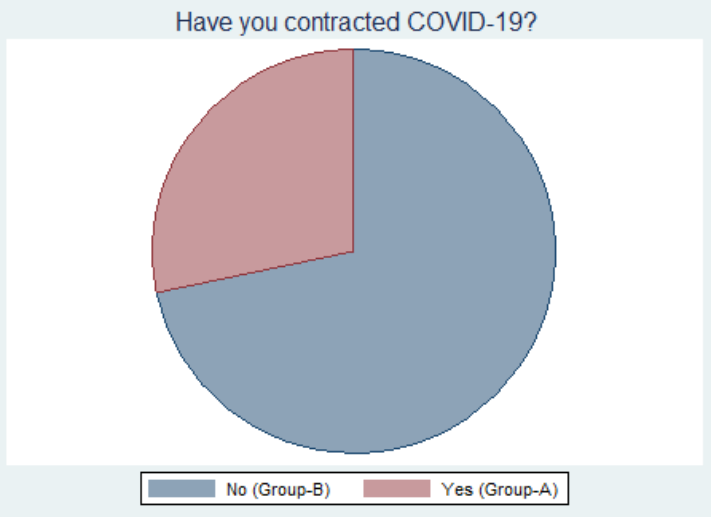


Figure 3: division of respondents in two groups

A COVID-19 resources score was constructed for all respondents - this score is a dummy variable which took the value 1 if: a) any respondent in group A had to externally procure any of the listed resources, or if b) any respondent from group B who had someone in their social circle who had to procure any of the listed resources externally. The rationale behind this is that no two participants from groups A and B saw the same questions. This variable is later used in the regression analysis. Additionally, a 'symptoms' score was also constructed, based on the number of symptoms that a respondent from group-A experienced. This is simply a total of all the selected symptoms. The variable 'News tracking frequency' measures how often a respondent follows COVID-19 related news. This is the main indepedent variable of interest in the regression that will follow. The responses range from 'never' to 'a couple of times in a day': higher the numerical value assigned to an option, greater is the frequency of them following COVID-19 related news.

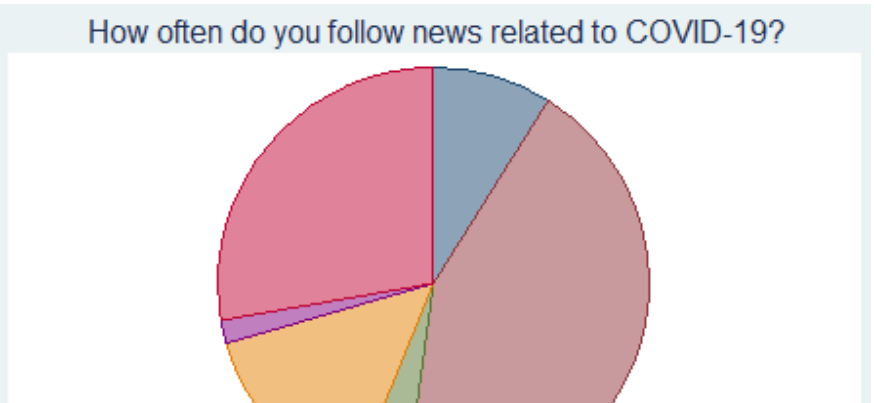


Figure 4: Frequency of following COVID-19 news

Section 3-Data Analysis:

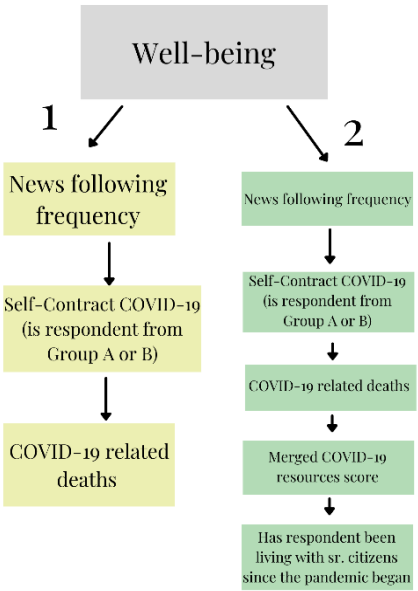
Figure 5: Regression models explaining well-being

Two ordered logistic regression models are constructed to answer the research questions posed earlier in the paper. Figure 5 explains the two models where 'well-being' is the outcome variable. Here, well-being is measured as the degree to which respondents agree with the statement 'COVID-19 has impacted my well-being'. Responses are recorded on a Likert scale ranging from 'strongly disagree-strongly agree', where 'strongly disagree' is coded as 1. As one moves higher up on the scale, the degree to which respondents agree with the statement increases. Interestingly, no respondent from the entire sample of 182 has selected 'strongly disagree'.

As one's experiences determine their well-being, to a fair extent, and because well-being is a layered concept, which could potentially be perceived in different ways by respondents, two different models are constructed to understand it. The focus of this study and its research questions is to ascertain the direct and indirect effects of COVID-19, therefore, only COVID-19 related variables have been used to determine the same. The fifth variable in the second model, the one measuring if a respondent has been residing with senior citizens since the beginning of the pandemic, is included in the study to understand the degree to which COVID-19 exposure impacts the well-being of respondents. Given their general ill-health, low immunity, and degenerative conditions, senior citizens were and continue to comprise one of the most at-risk groups for contracting COVID-19. Thus, living with the elderly can entail additional care-work and vigilance for their relatively younger family members. More often than not, this could translate as increase in the care-work burden of women, because in most countries, the care work burden falls disproportionately on women (Agrawal M., 2019).

Hypotheses:

H0(1): *Following COVID-19 related news frequently is not associated with perceived higher well-being.*
HA(1): *Following COVID-19 related news frequently is associated with perceived higher well-being.*



H0(2): *COVID-19 related deaths in one's social circle do not share an inverse relationship with perceived well-being*
HA(2): *COVID-19 related deaths in one's social circle shares an inverse relationship with perceived well-being*

Quantitative Results:
In an ordered logistic regression, simply looking at the coefficients only tells one the direction of the relationship between the outcome and determining variables. Additionally, one cannot interpret the coefficients as they are, therefore, the following tables present *odds ratios of the independent and outcome variables*. It is important to note that there is only one odds ratio per pair of outcome and exogenous variable due to the proportional odds[7] assumption of ordered logistic regression. This entails that the coefficients that describe the relationship between, for example, the lowest versus all higher categories of the outcome variable are the same as those that describe the relationship between the next lowest category and all higher categories. Had this not been the case, we would need a separate model per pair of response and independent variable. All interpretations are made in comparison to a base category which is usually the lowest value that a particular variable takes. With this established, one then reads the odds ratio as the *change* in odds of that particular outcome *relative* to the base outcome.

The results from Tables 2 and 3 prove that H0(1) *can* be rejected at 95% and 90% confidence interval: following COVID-19 related news more frequently *is* associated with higher levels of well-being. In Table 2, the significant news following variables are with respect to following COVID-19 related news daily and a couple of times in a day. Both these variables are directly related to well-being (Appendix 8). What this means is that, relative to never following COVID-19 related news, following it daily ($p<0.05$) or a couple of times in a day ($p<0.1$) increases the odds of the respondent experiencing higher levels of well-being by 3.3 and 3.2 times each, respectively. The first model (table 2) was initially constructed without controlling for the effects of age and annual income of the respondent. In this earlier model (Appendix 6), there were three more observations than there are now (180), and, following COVID-19 related news following would have been significant at 99.9% confidence interval. A year and a half into the pandemic and there still seem to be widespread uncertainty and fear, although less in comparison to what citizens were experiencing just when the outbreak began. Martel et al (2020) show that reliance on emotions makes one more prone to believing fake news. Thus, it is possible that fear during the ongoing pandemic too could have led to people believing fake news, leading to an adverse impact on their well-being.

This finding is further bolstered by the second model in Table 3. The only significant news-following frequency is two, which corresponds to respondents following COVID-19 related news monthly. This shares an *inverse* relationship with well-being (Appendix 7), and, relative to not following COVID-19 news at all, it leads to a reduction in likelihood of experiencing higher levels of well-being by 0.67%($p<0.01$).

1) Table 2 – first regression model for 'well-being' as the outcome variable

Variables	Odds Ratio

[7] https://stats.idre.ucla.edu/stata/dae/ordered-logistic-regression/

Well-being	
2.COVID-19 news following frequency	0.190 (0.299)
3. COVID-19 news following frequency	2.288 (1.936)
4. COVID-19 news following frequency	1.987 (1.034)
5. COVID-19 news following frequency	3.278** (1.666)
6. COVID-19 news following frequency	3.207* (2.043)
1.Self-Contract COVID-19 (Which group respondent belongs to – Group A or B)	0.867 (0.299)
2.COVID-19 related deaths	0.749 (0.244)
Age	0.998 (0.0170)
2.Annual income	1.432 (0.918)
3.Annual income	2.749 (1.833)
4.Annual income	1.239 (0.873)
5.Annual income	1.606 (1.250)
6.Annual income	2.106 (2.110)
7.Annual income	1.917 (1.365)
Constant cut1	0.117** (0.123)
Constant cut2	0.536 (0.536)

Constant cut3	2.593 (2.566)
Observations	177

Robust see form in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 2: Ordered Logistic Regression Model-1

In the second model (table 3), whether a respondent has contracted COVID-19 or not also significantly impacts their well-being. This ('Self contract COVID-19) is a dummy variable which takes the value 1 (Group A) if a respondent has contracted the virus in the past, and 0 (Group B), i.e., the base category, if they have not. Group A members have a significant ($p<0.001$) and inverse (Appendix 7) relationship with wellbeing. Contracting the virus reduces one's well-being by 0.0195, or roughly 2%. This finding intuitively holds because, in the event that one isn't an asymptomatic patient of COVID-19, they undergo a plethora of symptoms which range from headaches to death, all comprising an unpleasant experience. With respect to H0(2), we fail to reject it because, although well-being and COVID-19 related deaths in one's social circle share an inverse (appendices 7 and 8) relationship, it is not significant in either of the two models (tables 1 and 2).

2) Table 3 - second regression model for 'well-being' as the outcome variable

Variables	Odds Ratio
Well-being	
2. COVID-19 news following frequency	0.00666*** (0.00732)
3. COVID-19 news following frequency	1.375 (2.169)
4. COVID-19 news following frequency	0.489 (0.314)
5. COVID-19 news following frequency	1.075 (0.715)
6. COVID-19 news following frequency	0.926 (0.770)
1. Self-Contract COVID-19 (Which group respondent belongs to – Group A or B)	0.0195*** (0.0265)
2. COVID-19 related deaths	0.750 (0.348)

1.COVID-19 resources score	1.224 (0.531)
2. Senior-citizens score (Is 1 if respondent has been residing with senior citizens since the pandemic began)	0.904 (0.425)
2.Annual income	0.626 (0.513)
3.Annual income	1.216 (1.075)
4.Annual income	0.517 (0.463)
5.Annual income	0.705 (0.815)
6.Annual income	0.516 (0.560)
7.Annual income	1.889 (1.780)
Constant cut1	0.0130*** (0.0170)
Constant cut2	0.0716** (0.0768)
Constant cut3	0.448 (0.442)
Observations	97

Robust see form in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3: Ordered Logistic Regression Model-2

Qualitative results:

To gain a more nuanced understanding of the impact of COVID-19 on their well-being, respondents were asked *how* this impact manifested. Responses reveal that a number of respondents and their families' incomes were impacted adversely. A respondent says that their parent's business was forced to shut down. Respondents include students, whose responses highlight fatigue due to online classes. These findings are resonated by qualitative interviews of women employed as domestic helps in the suburbs of Mumbai. All three interviewees temporarily lost their jobs, and know people in their neighbourhood who permanently lost their jobs. One interviewee (female, 30) said that her neighbours were forced to sell their assets like refrigerators, bicycles, new sarees that they had purchased for themselves at an earlier point in time, to be able to survive. Another interviewee (female, 28)

said that her husband had to start selling fruits and vegetables to be able to support their family.

All three interviewees simultaneously expressed some suspicion towards COVID-19 as a whole and exhaustion due to the rules and regulations that it has brought with it. In the survey, while most responses highlight the negative effects of COVID-19 on well-being, a small share of responses, about 5% of the total, believe that they have either not been affected much. One response believes that the minuscule impact of COVID-19 on their well-being is a function of their privilege, and that the lockdowns have given them time to ruminate and ponder about the aspect of their life that they would have ignored otherwise. Azeez E P et al (2021) highlight the themes that dominate the experiences of female migrant workers during COVID-19. Loss of livelihood and little to no support and two of the main themes. The vast differences of experiences between privileged survey takers and interviewees illustrates the wide class divide among Indians. This is not to say that the privileged did not or do not go through hardships, but, just that the very nature and root causes of these struggles differs greatly. One interviewee's family member, living in a rural area of Maharashtra passed away because they were unwell, not with COVID-19, but, because all the medical staff in their neighbourhood was focussed solely on helping COVID-19 patients.

Section 4- Conclusion:

This paper set out to understand the predictors of perceived and self-reported well-being among urban adult Indians. In doing so, it also tried to shed light on the somewhat invisible and hard-to-quantify the impact of COVID-19 on women employed as domestic helps. Ordered logistic regression analysis reveals that the frequency with which follows COVID-19 related news is positively and significantly ($p<0.05$) related to well-being: higher frequency increases one's likelihood of experiencing higher levels of well-being.

The shortcomings of this study and avenues to refine future work include the following: a) while the merged COVID-19 resources score aimed to provide an overview of COVID-19 specific experiences of respondents in both groups A and B, it did not ask group A respondents if anyone in their social circle had to procure oxygen, remdesivir, etc. externally. The survey respondents are over-representative of a privileged population: those with access to smart phones, mobile internet connections, and an above average ability to communicate in the English language. Thus, the findings may not necessarily be representative of all Indian citizens at large.

This can be further illustrated by the fact that, while the survey respondents could and did answer a question on the frequency with which they followed news related to COVID-19, all three interviewees said that they simply do not have access to news at all, and nor do they care enough to ask about it. The sources of information for the interviewees were hearsay and the conversations that they had with their employers and neighbours. One interviewee said that she would rather die than get vaccinated because she was afraid of the side-effects and had heard ill things about it. This is in complete contradiction to the survey data findings, which highlights the unseen effects of income disparities in a country as diverse as India.

Not only were the interviews too few in number, but it is also possible that the responses were biased. All interviewees were employed as domestic helps, and therefore, belonging from an income group with low bargaining power, they could have answered in a certain

manner which may not align with their beliefs. And finally, although the survey highlighted the frequency with which respondents followed COVID-19 related news, it did not ask them about their sources of getting access to this news. Thus, one cannot comment on the reliability of their source(s).

Despite the shortcomings, the policy implications of this study cannot be overlooked. The frequency at which one follows COVID-19 related news reveals to be an important predictor of one's well-being. This finding, if it holds for the population at large, can be utilized to ensure spreading of accurate information with the help of information spreading and awareness campaigns by credible sources, say policymakers, and doctors could help reduce COVID-19 rules flouting.

References:

Agrawal, M., M. A. (2019, July 26). *It is not your job | Unpaid care work in India*. Oxfam India. https://www.oxfamindia.org/blog/unpaid-care-work-in-india

Azeez E P, A., Negi, D. P., Rani, A., & a P, S. K. (2021). The impact of COVID-19 on migrant women workers in India. *Eurasian Geography and Economics*, *62*(1), 93–112. https://doi.org/10.1080/15387216.2020.1843513

Bhandare, N., N. B. (2020, December 15). *Covid impact: Women workforce disappearing, most affected in urban India*. Business Standard. https://www.business-standard.com/article/current-affairs/covid-impact-women-workforce-disappearing-most-affected-in-urban-india-120121500259_1.html

Ghosh, S., Moledina, N, N. M., Hasan, M. M., Jain, S., & Ghosh, A. (2021). Colossal challenges to healthcare workers combating the second wave of coronavirus disease 2019 (COVID-19) in India. *Infection Control & Hospital Epidemiology*. Published. https://doi.org/10.1017/ice.2021.257

Grover, S., Sahoo, S., Mehra, A., Avasthi, A., Tripathi, A., Subramanyan, A., Pattojoshi, A., Rao, G., Saha, G., Mishra, K., Chakraborty, K., Rao, N., Vaishnav, M., Singh, O.,

Dalal, P., Chadda, R., Gupta, R., Gautam, S., Sarkar, S., . . . Janardran Reddy, Y. (2020). Psychological impact of COVID-19 lockdown: An online survey from India. *Indian Journal of Psychiatry*, *62*(4), 354. https://doi.org/10.4103/psychiatry.indianjpsychiatry_427_20

Khasne, R. W., Dhakulkar, B. S., & Mahajan, H. C. (2020). Burnout among Healthcare Workers during COVID-19 Pandemic in India: Results of a Questionnaire-based Survey. *Indian Journal of Critical Care Medicine*, *24*(8), 664–671. https://doi.org/10.5005/jp-journals-10071-23518

Lazarus, J.V., Ratzan, S.C., Palayew, A. *et al.* A global survey of potential acceptance of a COVID-19 vaccine. *Nat Med* **27,** 225–228 (2021). https://doi.org/10.1038/s41591-020-1124-9

Madhavan, R., R. M. (2021, May 19). *India reported 512 oxygen-related deaths during second wave of Covid: Open data tracker*. Https://Www.Newindianexpress.Com/Nation/2021/May/19/India-Reported-512-Oxygen-Related-Deaths-during-Second-Wave-of-Covid-Open-Data-Tracker-2304596.Html . https://www.newindianexpress.com/nation/2021/may/19/india-reported-512-oxygen-related-deaths-during-second-wave-of-covid-open-data-tracker-2304596.html

Martel, C., Pennycook, G. & Rand, D.G. Reliance on emotion promotes belief in fake news. *Cogn. Research* **5,** 47 (2020). https://doi.org/10.1186/s41235-020-00252-3

Pandey V., Nazmi S., V. P. S. N. (2021, April 21). *Covid-19 in India: Why second coronavirus wave is devastating*. BBC News. https://www.bbc.com/news/world-asia-india-56811315.amp

Russo, D., Hanel, P.H.P., Altnickel, S. *et al.* Predictors of well-being and productivity among software professionals during the COVID-19 pandemic – a longitudinal study. *Empir Software Eng* **26,** 62 (2021). https://doi.org/10.1007/s10664-021-09945-9

Sinyor M., Spittal M., Niederkrotenthaler T., M. S. M. S. T. N. (2020). Changes in Suicide and Resilience-related Google Searches during the Early Stages of the COVID-19 Pandemic. *The Canadian Journal of Psychiatry*. Published. https://doi.org/10.1177/0706743720933426

Appendix

1) Quant survey

1. Have you ever contracted COVID-19? Yes; No

If 1 = Yes

1. How long did your symptoms last?
    1. 5-10 days
    2. 10-15 days
    3. 15+ days
    4. I was asymptomatic

1. Did your immediate family (people you live with) also contract the virus at the same time as you did?
    1. Yes
    2. Not at the same time but at another time
    3. They did not contract the virus

1. Where did you isolate yourself?
    1. At home
    2. Institutional quarantine (quarantine only facilities)
    3. Hospital
    4. At a friend/relative's house

1. Did you need external oxygen support? Yes, no

1. If 5=yes: Did you or your family/friends experience difficulty in getting access to oxygen? Yes, no

1. Were you prescribed remdesivir? Yes; no

1. If 15 = yes: did you or your family have to arrange for the drug? Yes;no

1. Were you prescribed any other drug that needed you or your friends and family to seek externally? Yes; no

1. If 17 = yes, what drug was this?

1. How long did it take for you to get your positive covid test result?

1. Did you have to take multiple covid tests because you suspected an error in the previous result(s)?

1. Plasma - contingent on hospital
1. Severity of symptoms - on a scale
1. Covid brain fog -

If 6 = no
1. Did anyone in your family (people you have been living with for the last year) contract covid? Yes; No
1. Did any of your friends/colleagues contract covid-19? Yes; no
1. Did any covid +ve patient in your social circle need additional support like: a - oxygen, b - remdesivir, c - other. Yes; no for each
1. Did you/anyone you know have to go looking for these resources externally? Yes; no

B.
1. If you had the choice, which vaccine would you take? Covidshield, Covax, I will wait for other international vaccines
1. Do you plan on getting vaccinated? Yes; no, already taken (can ask why)
1. Do you think the available vaccines are safe for administering?
1. Do you think the available vaccines are effective?
1. How often do you follow COVID-19 news? A couple of times in a day, daily, weekly, fortnightly, monthly, I prefer not to
1. If 29 = I prefer not to: Why do you prefer not to follow news related to COVID-19? (text entry)
1. Has COVID-19 affected your well being directly or indirectly? - strongly If 31 = yes: How has it affected your well being? **(text entry)**
1. Have you done any volunteer work for covid-19 relief?
1. Have you donated to any covid relief organization?
1. Do you think the existing health infrastructure can sustain India's case load?
1. If you had a choice between gaining Rs. 500 for, sure and a lottery where we toss a fair coin and you a gain of Rs 0 with ½ chance [heads] and a gain of Rs 1000 with ½ chance [tails], you would:
   Choose the sure gain of 500;
   Choose the lottery;
   Be indifferent between the two options
1. If you had a choice between losing Rs 500 for sure, and a lottery where we toss a fair coin and you lose Rs. 0 with ½ chance [heads] and a loss of Rs 1000 with ½ chance [tails], you would:
   Choose the sure loss of 500
   Choose the lottery
   Be indifferent between the two options
1. If you had a choice between getting Rs. 2000 right now versus Rs. 4000 in two months' time, what would you choose?
   Rs 2000 right now
   Rs 4000 in two months
   Be indifferent between the two options
1. If you had a choice between getting Rs. 2000 in a year's time (12 months) versus Rs. 4000 in one year and two months (18 months) which would you choose?
   Rs 2000 in one year's time
   Rs 4000 in one year and two months' time
   Be indifferent between the two options
1. Gender: Male, Female, Other
1. Age: text entry (can make it age group and give options such as: 18-25; 26-35; 36-50; 50+
1. City: text entry
1. Class: upper middle, middle, lower middle, bpl, other (text entry)
1. Caste: SC; ST; OBC; General
1. Religion: hindu, muslim, sikh, christian, zorastian, other (text entry)

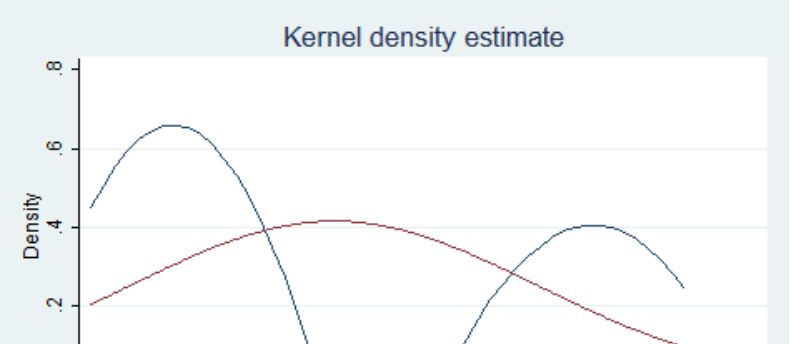
1. Senior citizens

Thank you for participating in the survey. As you may know, not everyone is being able to access resources to help treat covid-19, and the situation is only much worse for the marginalized. If you have been looking to donate to COVID-19 relief organizations but haven't got the chance to, or don't know of any trusted websites/organizations, please feel free to donate to any of the following - <links>

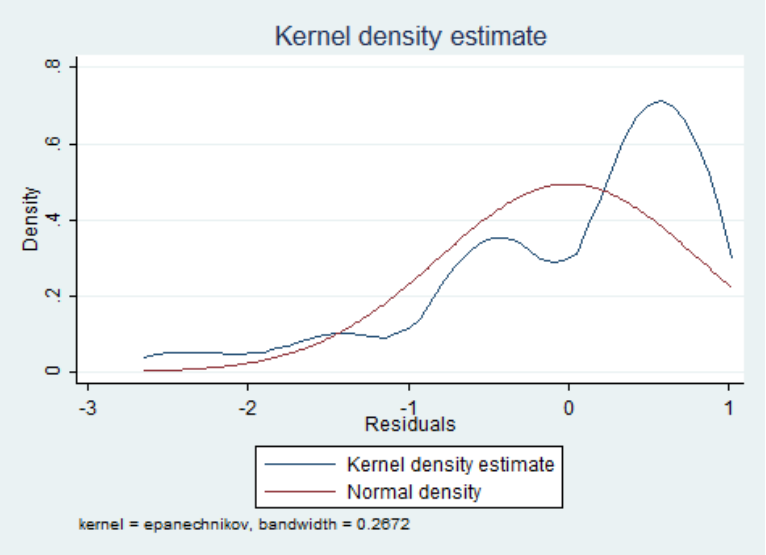
2) Qual interview questions –

Introduction - Hello, my name is anchal and I'm conducting research on covid 19. Since the situation has deteriorated from bad to worse, I want to understand the impact on people belonging to different groups of society. I will ask you a few questions about your and your family/neighbour/friend's experiences with COVID-19, please try to answer them honestly. If, at any point, you feel uncomfortable during the interview, we can terminate it immediately, and either continue at a later time or not at all. This will take maximum an hour, and there are no right or wrong answers. I will also be recording you to come back to this at a later time. Everything you tell me will be kept confidential, including your identity. Do you <person's name> consent to being interviewed?

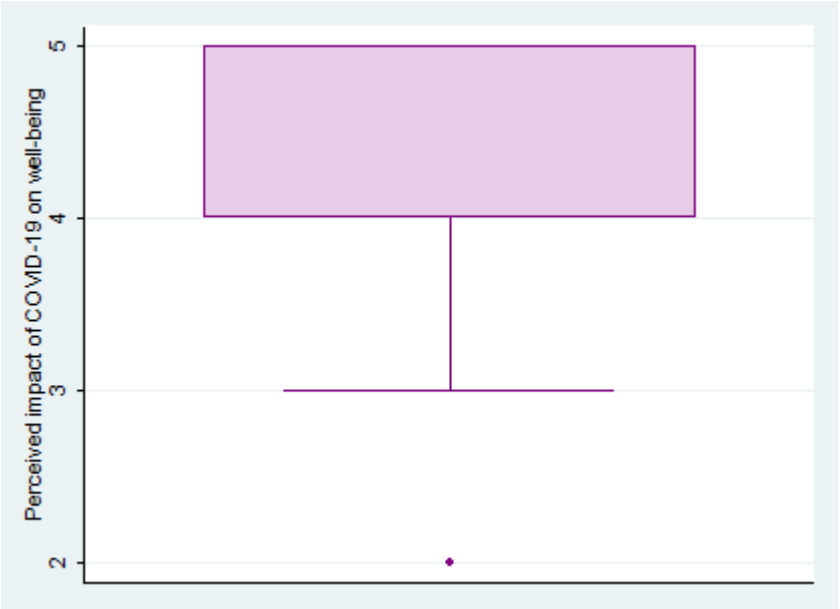
1. What is your name, age, gender?
2. Are you married? How many people do you live with, and who are they?
3. Do you have children? How many, if so?
4. Does your husband work?
5. Have you or your family ever contracted COVID?
6. Have you/anyone you know lost anyone due to covid?
7. How has covid/lockdown imposed due to covid impacted your work? Do you have to wear a mask/change your clothes when you go to your employer's house to work?
8. Did you temporarily/permanently lose a job because of covid?
9. Do you have any friends who lost any jobs?
10. Do you know anyone who struggled to get access to a test/other medicines?
11. Do you know that there are vaccines available in the market?
12. Do you know anyone who has gotten vaccinated?
13. Do you think it's safe to do so?
14. If the vaccine is available for free will you get it?
15. If someone pays you to get vaccinated will you do it?
16. How has the lockdown impacted your children?
17. Did you have to buy additional items like a smart phone/internet connection/laptop/computer for your children to attend school?
18. Have you had to move houses because of the lockdown?
19. Do you know anyone who went back to their native place because of the lockdown?
20. Did your employers cut your wages for the months you couldnt work because of covid?
21. Did you have to request for your salary before your pay day at any point in the lockdown?
22. Did your husband start drinking or continue drinking during the lockdown?
23. Do you know anyone's husband who did?
24. Did you have to sell any items in order to get some money during the lockdown?
25. Did you have to borrow any items in order to get some money during the lockdown?



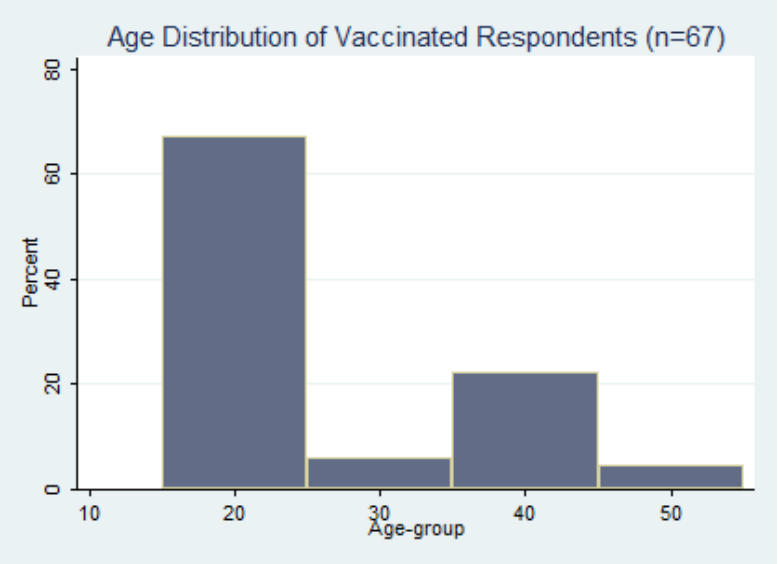
3. Error term distribution of outcome variables to test for normality –



4. Distribution of the responses of the outcome variable ‘well-being’



5) Age distribution of vaccinated respondents



6) First regression model *coefficients* without controlling for age & income

VARIABLES	Well-being
2.News following frequency	-1.521
	(1.265)
3.News following frequency	0.774
	(0.840)
4.News following frequency	0.739
	(0.454)
5.News following frequency	1.165***
	(0.444)
6.News following frequency	1.237**
	(0.628)

1.Self Contract COVID-19	-0.0332
	(0.327)
2.Covid-19 Deaths	-0.308
	(0.307)
Constant cut1	-2.588***
	(0.543)
Constant cut2	-1.084**
	(0.455)
Constant cut3	0.474
	(0.446)
Observations	180

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

7) Second regression model *coefficients*

VARIABLES	(1) WellbeingCoded
1.MergedResourcesScoreBinary	0.202
	(0.434)
1.SelfContractCovidBinary	-3.935***
	(1.353)
2.NewsCoded	-5.012***
	(1.100)
3.NewsCoded	0.319
	(1.577)
4.NewsCoded	-0.714
	(0.641)
5.NewsCoded	0.0722
	(0.665)
6.NewsCoded	-0.0774
	(0.832)
2.SeniorCitizensCoded	-0.101
	(0.470)
2.CovidDeathsCoded	-0.287
	(0.464)
2.IncomeCoded	-0.468
	(0.820)
3.IncomeCoded	0.195
	(0.884)
4.IncomeCoded	-0.660
	(0.895)
5.IncomeCoded	-0.350
	(1.156)
6.IncomeCoded	-0.662
	(1.086)

7.IncomeCoded	0.636
	(0.942)
Constant cut1	-4.341***
	(1.304)
Constant cut2	-2.637**
	(1.073)
Constant cut3	-0.804
	(0.987)
Observations	97

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

8) First regression model *coefficients*

VARIABLES	(1) WellbeingCoded
1.SelfContractCovidBinary	-0.143
	(0.345)
2.NewsCoded	-1.659
	(1.570)
3.NewsCoded	0.828
	(0.846)
4.NewsCoded	0.687
	(0.520)
5.NewsCoded	1.187**
	(0.508)
6.NewsCoded	1.165*
	(0.637)
2.CovidDeathsCoded	-0.289
	(0.325)
2.IncomeCoded	0.359
	(0.641)
3.IncomeCoded	1.011
	(0.667)
4.IncomeCoded	0.214
	(0.704)
5.IncomeCoded	0.473
	(0.778)
6.IncomeCoded	0.745
	(1.002)
7.IncomeCoded	0.651
	(0.712)
age	-0.00170
	(0.0170)
Constant cut1	-2.145**
	(1.047)
Constant cut2	-0.623
	(1.000)

Constant cut3	0.953
	(0.990)
Observations	177

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1