Knowledge, attitude and perceived effectiveness about social distancing during COVID-19

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Abstract
Social distancing has proven to be the need of hour to break the chain of transmission of the pandemic novel coronavirus. India has been able to manage the infection explosion so far, so it is essential to access to what extent social distancing has been successful in combating the spread of this virus in India. This research paper aims to study the awareness and attitude of the people pertaining to social distancing in controlling the spread of novel coronavirus 2019 and to study the barriers in implementing social distancing strategies in India. Observational study design is used. Primary data is collected using online questionnaire. Purposive Sampling is used. Statistical analysis and interpretation of data collected, is done using Ms Excel and graphs. The results of the survey showed a high level of awareness and moderate level of willingness in attitude among the participants about the novel coronavirus infection. A moderate number of respondents were facing issues regarding their mental health. In conclusion, there is a lack of awareness and acceptability of strategies adopted by the Government along with several issues of mental health.

Keywords: social distancing, COVID-19, awareness, attitude, barriers, S.W.O.T. analysis

1. Introduction
On December 31, 2019, China reported a mysterious pneumonia in the city of Wuhan, to the World Health Organization (WHO) [1]. The disease, as it progressed rapidly to the later part of the world, was then declared as Pandemic on January 30, 2020 by WHO, which then named it as the novel coronavirus 2019 or COVID-19. Since then, the virus has been able to roll out over 200 nations globally breeding out 64,16,828 infected cases and claiming 3,82,867 lives, as of 4 June 2020, 4.17 pm CEST [2].

At its inception, the infection caused by the novel coronavirus showed symptoms of a normal fever, fatigue and cough, progressing to a severe respiratory infection in 5-14 days causing difficulty in breathing and fatal pneumonia. The virus transmits through droplets when an infected person coughs or exhales within 1 meter of range to another person or on any object or surface followed by touching eyes, nose or mouth by the one who touches that object [3]. Here comes the role of public health measures, like sanitization, wearing masks etc. with the more drastic ones like Social distancing followed by community lockdown. Social distancing not only prevents the infection; it also provides healthcare professionals with the buffer time to treat ample number of patients and ensure that each patient receives proper healthcare.

1.1 Study Background
Social distancing has proven to be very effective in controlling the spread of the pandemic COVID-19 [4]. There is a study conducted by Rick Nunes-Vaz [5], where he has visualized the doubling time of new infected cases with the containment measures taken by the country. According to the graphical study done by him, the time taken for the growth of new infection i.e. the doubling time is more in Republic of Korea and Japan, as compared to Italy, United States of America (USA), United Kingdom (UK) and Australia. Rick states that the reason behind this outcome are very strict isolation strategies including social distancing and lockdown in Republic of Korea and Japan. Countries like Italy, USA, UK who are among the worst sufferers by the disease, somewhere lacked in implementing or following these social distancing and isolation measures.

Another report cited by The Hindu [6] reported the Indian scenario of doubling rate of new infections of COVID-19 as per the research done by Indian Council of Medical Research (ICMR). As shown in Figure 1, the doubling rate of infection in USA is nearly 4 days that is faster in comparison to that of India. The report showed India's doubling rate, that there were 987 cases in India on March 28, 2020, four days past the declaration of the nationwide community lockdown. Since then, in first 10 days cases double 4 days a week, then between 4 to 5 days in one week, and currently, in every 6 days. India is also in a better state with respect to the number of cases in other countries of the world as shown in Figure 2 [7].
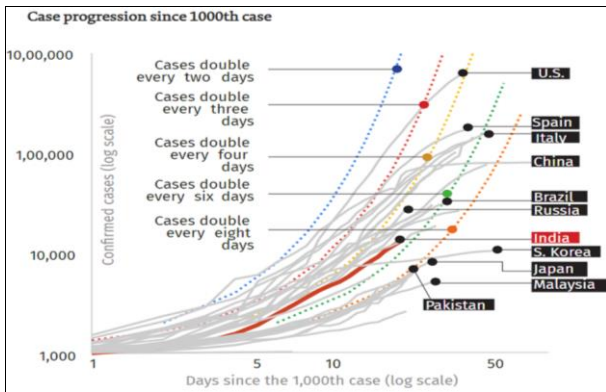
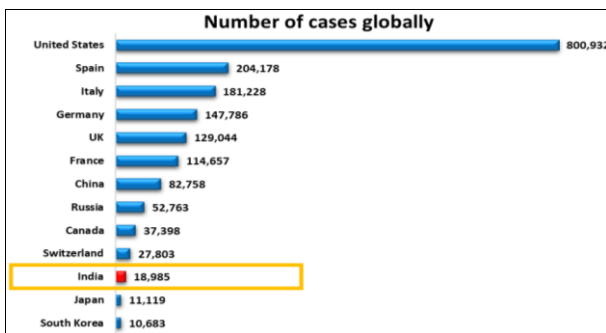**Fig 1:** Doubling rate of infection globally since 1000th case on March 28, 2020. Source. The Hindu [6]

Fig 2: Total number of cases globally as of 22 April, 2020, 2.00 a.m. CEST. Source. Wikipedia [7]

As of 5 June 2020, 8:00 IST, India had 1,10,960 infected patients and 6348 lives had been claimed by the virus (see Figure 3) [8]. The complete lockdown was imposed by our hon'ble Prime Minister Shri Narendra Modi on March 25, 2020. Since then, several health authorities, media, celebrities etc. have been stressing on the importance of social distancing during this period of lockdown. But there are several gaps in this approach as well. There is a lack of awareness and a lot of barriers in implementing this social distancing strategy in the general population of India. There have been cases of people of hiding in places like Nizamuddin's tabliqi jamaat without proper isolation and precaution, mass gathering of public in Bandra station, lack of proper surveillance in slum areas and other attitudes of people showing careless behaviour towards the complete lockdown. Additionally, the mental health of the people is also a matter of great concern and potentially, a barrier against social distancing.
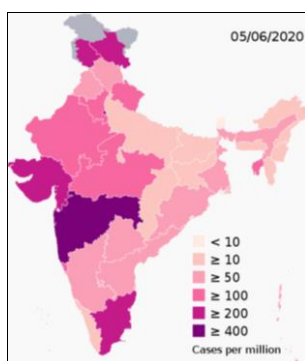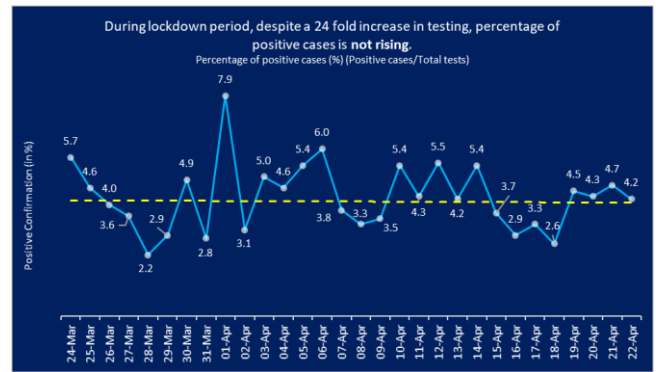

Fig 3: Case wise distribution of confirmed cases of COVID-19 in different states of India as of 5 June 2020, 8:00 IST. Source. MoHFW [8]

Graph 1: The percentage of positive cases with respect to the number of tests done in India after the nationwide lockdown on 25 March, 2020.Source: MoHFW and ICMR [9]. Credit. inshorts [10]

The findings in Graph 1 [9, 10] clearly implies that the social distancing measures have positively impacted to reduce the rate of transmission of the COVID-19 infection. Additionally, Indian authors Singh and Adhikari [4] said that the peak of infection would have raised to 0.9 million in 114 days if there were no lockdown measures implemented, since March 25, 2020. They also suggest Four strategies of social distancing and lockdown; First strategy is a complete lockdown and social distancing for a period of 3 weeks or 21 days. Second strategy is to suspend the lockdown for 5 days, then again continue for 28 days. Third strategy includes a consecutive lockdown of 21 days, 28 days and 18 days with a gap of 5 days. Fourth strategy is a 49 days lockdown at a stretch. Number of infections was expected to reduce, and prevent resurgence to a great extent with contact tracing and quarantine methods, with the third and fourth strategy.

In their study [11], Smith and Freedman phrased that Social distancing is effective in places where there is a possibility of substantial community transmission. It, thus, reduces the scope of interaction between individuals of a broad community who are infected but not yet identified and thus, still not isolated from the community. Since, the respiratory infection caused by the novel coronavirus is transmitted through droplets, the proximity of individuals to each other plays a great role in spreading the infection. A study by Joel Koo *et al* [12] in their Influenza epidemic simulation model, suggested that a combined intervention, i.e., quarantine, closure of schools and workplace distancing were effective to great extent to reduce the number of infections, in comparison to the scenario with no intervention. Similarly, the study of Milne and Xie [13] suggests similarity between the public health measures for the novel influenza virus infection and the COVID-19 infection through a community-based simulation model in a city in Australia. But the authors clarified that in absence of vaccines and treatment for a prolonged time, these measures might attain fatigue.

Another study by Kissler *et al* [14] outlined the strategies centred on; touch monitoring, quarantine and social distancing, Intensive checking, tracing and isolation of cases; that has allowed transmission control in countries like Singapore and Hong Kong. In an article, Alicia Ault suggested that Multicycle social distancing is an alternative, i.e., instituting social distance before the infection curve bends down to a point where social interactions seem safe to resume [15]. Additionally, Zhang et.al developed SEIQR models that showed early social distancing intervention

could dramatically reduce the size of the outbreak, in particular synchronizing the intervention nationally at the earliest possible time [16].

As we can understand from the study by Smith *et al* [17] that Standard methods of public health used during SARS have been successful and included aggressive case identification, case isolation, contact tracing and quarantine of all contacts, social distancing and group quarantine. However, the success of these interventions would largely depend on the differences between the SARS and COVID-19. Due to the degree of population dissemination, conventional public health interventions do not stop all human-to-human transmission. Therefore, the focus should be more on mitigation rather than containment measures. Lack of vaccination and effective care has left us with only option of isolation and quarantine, social distancing, and group containment strategies.

Additionally, Ethical considerations, unbiased approach of the health authorities and political leaders, economic impact considerations, attention towards the vulnerable population and strict actions against individuals who deny treatment; are few key measures suggested by Lewnard *et al* [18] that will contribute to the success or failure of the social distancing strategy against the spread of COVID-19 in any country.

However, it is upon the compliance of the general population that decides the success of such mitigation strategies in any country. For a better understanding, this study is conducted to get a speculation on the perceived effectiveness of social distancing strategies to combat against the COVID-19 infection in India.

Hence, this study aims to study all aspects of people's perception about the effectiveness of the social distancing measures in India, and the role it has played in reducing the wrath of the pandemic so far. This study aims to achieve the following specific objective;

- Study the awareness of people to follow social distancing in combating the spread of COVID-19.
- Observe the attitude of the people pertaining to social distancing in controlling the spread of novel coronavirus 2019.
- Find out the barriers in implementing social distancing strategies in an over populated and culturally oriented country like India

2. Materials and Methods

A primary research study is being done using an online questionnaire created using google forms. An observational study design has been used. Purposive sampling (Non-probability sampling) is being done to select the respondents (Calculation for sample size selection is shown in Equation 1). The respondents were forwarded a survey of 14 questions including a consent form to participate in the survey, using mail ids and social media platforms. The survey link was opened on 21 April, 2020 at 10.00 GMT +5.30 and closed on 26 April, 2020 at 12.00 GMT +5.30. As many as, 413 participants responded to the survey from different states of India, the mapping of which is shown in the Fig.3. The participants were above 18 years of age who can give consent for themselves with an ability to read and write English having an active internet connection and having a basic knowledge about healthcare.

Equation 1: Shows sample size (N) Calculation for a target population of more than 10,000, taking confidence interval (C.I.) as 95 percent i.e. Z value = 1.96; the proportion of population, p = 50 percent or 0.5, q = (1-p); degree of accuracy, d = 0.05. The number of non-respondents were taken to be 10 percent for the calculation of final sample size (N_f).

$$N = \frac{z^2 pq}{d^2} = \frac{(1.96)^2 \times 0.5 \times (1-0.5)}{(0.05)^2} = 384.14$$

$$N_f = \frac{\text{Effective sample size}}{(1 - \text{non response rate anticipated})} = \frac{384.14}{1-0.1} = 427$$

To begin with, the questionnaire consisted of a consent form so that the participants could willingly participate in the survey. After giving the required consent, the participants were presented with questions regarding their demographic details. In the next section, the questionnaire focused on three aspects i.e., awareness, attitude and barriers of social distancing measures to fight the spread of novel coronavirus in India. There were four multiple choice questions related to the awareness, followed by two questions on attitude that were rated in 3-point Likert scale, and three questions were put in barrier section, where one question was of multiple choice and remaining two were rated in 3-point Likert scale. After the data was collected, analysis and interpretation of the data have been done using basic statistical tools like mean, percentage distribution, and standard deviation. Analysis is being done with the help of Ms Excel spreadsheets. After obtaining the key findings, the data has been represented using Graphical representations.

Websites of WHO, CDC and MoHFW has been taken as reference for the secondary data used in the study regarding the number of cases of the novel coronavirus infection, globally and nationwide.[2, 8, 19] Review of literature for conducting the study is done using the help of PubMed, ResearchGate and Google Scholar. The research papers dated from 2019 – 2020 have been studied to understand the impact of social distancing strategies on the number of cases of COVID-19 nationwide and globally.
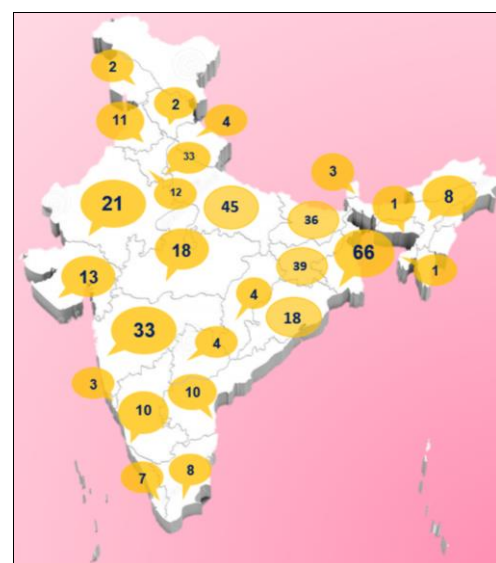

Fig 4: Number of respondents of the survey from all over India – state wise distribution. Source. Original.

There were 413 respondents from 24 states and 2 union territories of India, in which 1 respondent did not agree to participate in the survey (see Figure 4). The demographic details in the survey have revealed that, out of the 412 participants, 52percent were female and remaining 48percent were male. The average age of the participants was 28.26 years and the median age of the same was 26 years. Most of the respondents were qualified with a graduate degree or more.

3. Key findings
3.1 Awareness about the novel coronavirus and social distancing
As per Figure 5, a majority (around 97 percent) of the respondents are aware of all the modes of transmission of the novel coronavirus infection i.e., coughing, sneezing, touching infected object or surfaces and touching eyes, nose or mouth. The remaining (around 3 percent) were aware of any one of the modes of spread.
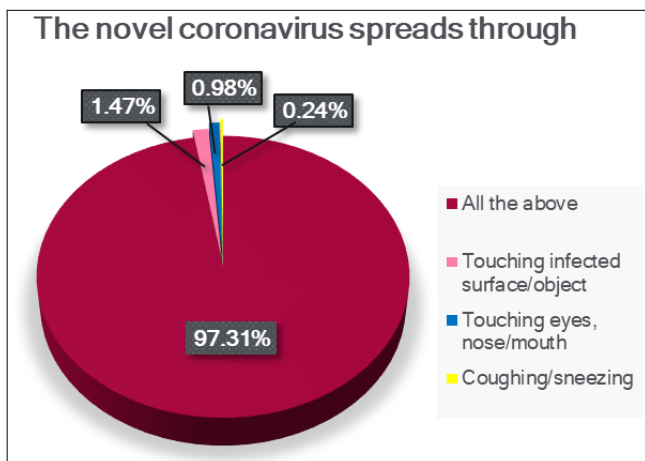

Fig 5: Awareness about the modes of transmission of novel coronavirus. Source. Original.

As seen in Figure 6, around 77 percent of the respondents believed that the minimum proximity to be maintained from other people is 3-6 feet, whereas quite a few (around 17 percent) believed the same to be more than 6 feet. Very few of them (around 5percent) answered it to be less than 3 feet. Rest of them were unaware of the minimum distance of proximity.
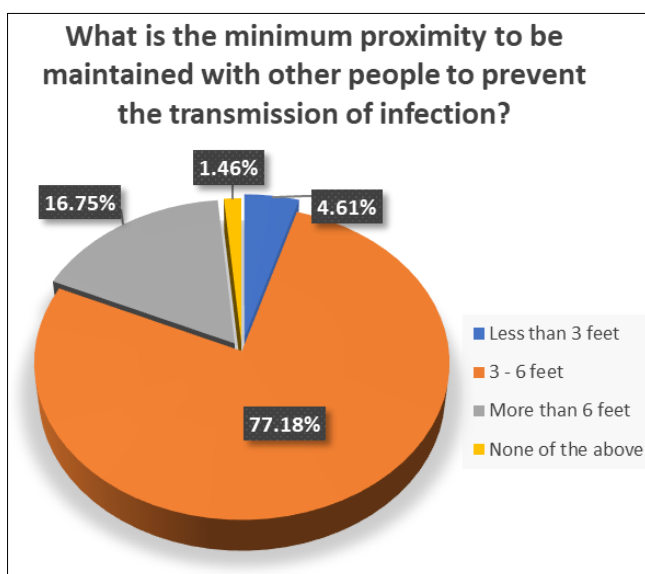

Fig 6: Awareness about the minimum proximal distance that should be maintained from one person to another to prevent the transmission of virus. Source. Original.

The majority (around 99 percent) of respondents were aware of the complete lockdown and social distancing measures being imposed by the Govt. of India since March 25, 2020 and rest 1 percent were not aware about these public health measures taken by the government as per Figure 7.
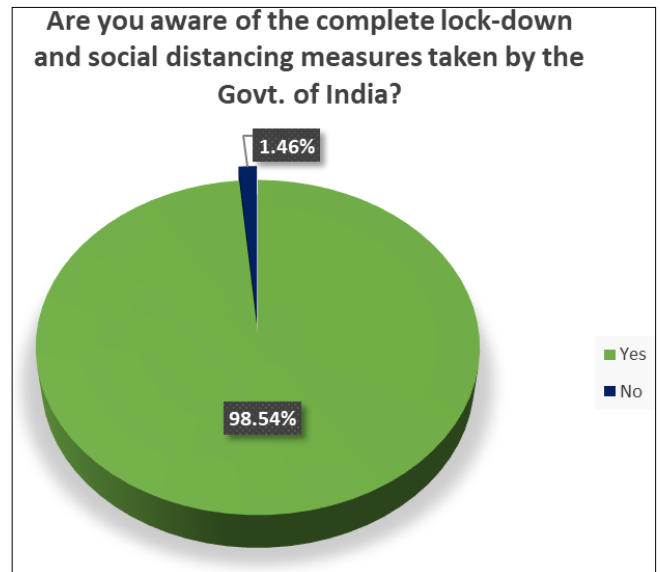

Fig 7: Awareness about the complete lockdown and social distancing measures taken by the Government of India. Source. Original.

In Figure 8, the majority (around 99 percent) of the respondents believed that the social distancing measures are helpful in stopping or slowing the spread of the virus. Only a few (around 1 percent) respondents were in belief that social distancing has no effect in the act of spreading the virus.

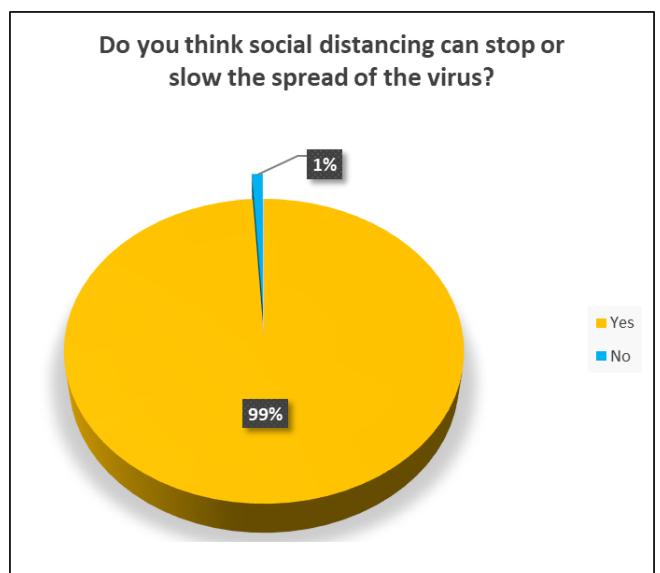**Fig 8:** Awareness about the effectiveness of social distancing in stopping or slowing the spread of the virus. Source. Original.

3.2 Attitude towards following public health mitigation strategies
According to the responses in Table 1, a majority (around 95 percent) of the respondents were aware to isolate themselves if they had any symptoms like fever or cough, whereas quite a few (around 4 percent) of them would

prefer to practice this sometime, and remaining 1 percent denied to adopt such practices. In the next section, most of the respondents (around 92 percent) would follow the community lockdown and avoid going out except for necessary chores, while a few of them (around 7 percent) would sometime go out without any necessity, and as few as 1 percent would not follow such practices.

Further in the next section, a majority (around 94 percent) respondents would use mask or cloth to cover face while going out, whereas a few (around 6 percent) of them would follow this sometime. Moving further, a majority (around 93 percent) of respondents would follow hand hygiene practices with as few as around 7 percent of respondents who would follow this practice sometimes. In the next section, most of the respondents (around 80 percent) would not order food from outside, while around 15 percent of them might order sometimes and 5 percent of them would very likely order food from outside. Lastly, a majority (around 85 percent) of respondents would follow social distancing and avoid partying or visiting relatives, while around 3 percent would prefer to do such sometime, and around 12 percent would never avoid doing such thing.

Table 1: Findings on attitude of the people regarding following social distancing measures are represented in percentages. Source. Original.

During this period of Lockdown and social distancing, rate the following that is most suitable to you as, how likely would you;			
	Most likely (in %)	Sometimes (in %)	Not likely (in %)
Isolate yourself if you have symptoms like fever or cough	95.15	3.64	1.21
Avoid going out if it is not absolutely necessary	92.23	6.80	0.97
Use mask/cloth to cover your face while going out	94.18	5.58	0.24
Wash your hands frequently with soap/ Use sanitizer	92.72	7.04	0.24
Order food from outside	5.10	14.56	80.34
Avoid partying/ visiting relatives or friends	84.46	3.40	12.14

3.3 Perception towards effectiveness of public health measures

Table 2: Findings on the perception of the people about effectiveness of different public health mitigation measures including Social distancing and the effective working of the frontline workers. Source. Original.

In your opinion, consider the following measures that has helped India to fight the spread of novel coronavirus and rate them with suitable answer.			
	Highly Effective (in %)	Somewhat Effective (in %)	Not at all Effective (in %)
Social Distancing	89.81	9.71	0.48
Case Isolation	92.48	6.31	1.21
Community lockdown	85.68	12.38	1.94
Work from home	80.83	17.96	1.21
Wearing mask	85.44	13.59	0.97
Covering face while coughing or sneezing	88.83	9.95	1.21
Washing hands	93.93	5.10	0.97
Effective working of the frontline workers like doctors, nurses, police, cleaning staff, and other essential service providers	94.91	4.85	0.24

As seen in Table 2, a majority of respondents have a perception that Social Distancing (around 90 percent), Case Isolation (around 93 percent), Community Lockdown (around 86 percent), Working from home (around 81 percent), Wearing masks while going out (around 85 percent), Covering face while coughing or sneezing (around 89 percent), washing of hands frequently (around 94 percent), and effective working of the frontline workers (around 95 percent) are effective measures that have helped India to fight the spread of novel coronavirus so far.

Quite a few of the respondents, i.e., around 10 percent, 6 percent, 12 percent, 18 percent, 14 percent, 10 percent. 5 percent and 5 percent, perceive that social distancing, case isolation. Community lockdown, work from home, wearing mask, covering face while coughing or sneezing, washing hands, and effective working of frontline workers respectively, are somewhat effective strategies. Rest are in opinion that these measures are not at all effective in fighting the spread of novel coronavirus in India.

3.4 Practicing social distancing measures
During this period of lockdown and social distancing, a majority (around 81 percent) of the respondents have mentioned to be working from home or studying or teaching

online, as seen in Figure 9. Rest of them (around 19 percent) are not working, studying or teaching remotely.
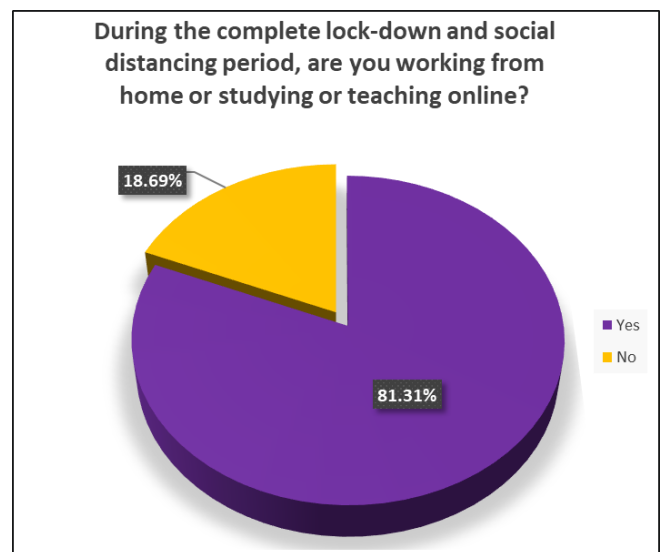

Fig 9: Findings on the number of respondents who are in a remote work or study set up. Source. Original.

3.5 Barriers in practicing social distancing measures

Table 3: Findings on barriers in practicing social distancing measures. Source. Original.

Rate the following with the most suitable answer.			
	Mostly (in %)	Sometimes (in %)	Never (in %)
Are you facing challenge or difficulty with the all online set up?	37.14	49.51	13.35
Do you think you are facing loss in career or academics?	45.39	42.72	11.89
Do you buy essential stuffs all at once to stock at home?	16.51	49.51	33.98
Do you face shortage of necessary products and services?	52.43	32.77	14.80

As per Table 3, the challenge from all online set up is faced more often by around 37 percent of the respondents and sometimes by around 50percent of the respondents, whereas rest (around 13 percent) of them do not face any such problem. Moving to the next section, quite a few (around 45 percent) of the respondents mentioned that they are facing loss in their career or academics during the lockdown, whereas quite a few more (around 43 percent) face the same sometimes, and the rest (around 12 percent) are not facing any such loss.

Furthermore, few (around 17 percent) of the respondents most likely do panic buying, and quite a few (around 50 percent) do such occasionally, while rest (around 34 percent) of them never indulge in panic buying of essential stuffs. More than 50percent of respondents accepted to been facing shortage of necessary products and services like medicines, masks, sanitizers etc., while few (around 33 percent) of them face such problem sometimes, and rest (around 15 percent) of them do not face any such shortage.

3.6 Mental Health status in midst of social distancing

Table 4: Findings on mental health of people during the community lockdown and social distancing represented in percentages. Source. Original.

How often do you feel the following way since the lockdown and social distancing has started? Rate the following with the most suitable answer.			
	Always (in %)	Sometimes (in %)	Never (in %)
Anxious or panic about current situation in India	43.20	43.69	13.11
Irritated or agitated mostly during the day	37.14	39.32	23.54
Short-tempered on most occasions	35.68	32.77	31.55
Lonely or abandoned	37.38	32.28	30.34
Sleeplessness worrying about future	46.84	30.83	22.33

As per the findings of Table 4, quite a few (around 43 percent) of the respondents always feel anxious or panicked about the current situation in India, and quite a few more (around 44 percent) feel such sometimes, while the rest (around 13 percent) never feel the similar way. Moving further, quite a few i.e., around 37 percent and 39 percent of the respondents respectively, are always or sometimes irritated or agitated during most part of the day, while the rest (around 24 percent) of them do not feel the similar way. Around 36 percent of the respondents always become short tempered on most occasions, and 32 percent of them feel the same sometimes, while the rest (around 30 percent) have no such feeling. Lastly, more than 46 percent respondents mentioned that they are always sleepless worrying about future, with a few (around 31 percent) of them facing the same situation sometimes, while remaining (around 22 percent) respondents do not have any such problem.

4. Discussion
Studying the responses in the awareness section, there is an evidence that a majority of respondents were aware of the current situation of COVID-19 infection and the mitigation strategies adopted in. They are also aware of the modes of transmission and the minimum proximity of distance that should be maintained to prevent the transmission of infection. Furthermore, a majority of respondents believe that social distancing is helpful in stopping or slowing the spread of the virus. Being aware about the infection, is crucial in shaping up the behaviour of the people in this fight against COVID-19 and also instigating a readiness to follow preventive strategies.

In the next section, the aim was to assess whether the awareness in the people are also becoming a part of their attitude. More than 90 percent of the respondents would go into self-quarantine if at all they had any symptoms of fever and cough. A majority of them would avoid going out of their homes, or partying or visiting relatives, if at all the reason was not that necessary. Additionally, if they had to go out for some reason, many of them would prefer to use mask or cloth to cover their face. Hand hygiene practices were also seen to be practiced by many. In the other hand, a great number of the respondents would avoid ordering food from outside and would rather prefer to eat home cooked meals.

Secondly, a majority of them agreed that social distancing measures like case isolation, community lockdown, work from home, proper use of masks, protection while coughing or sneezing, frequent hand hygiene practices with effective working of frontline workers like doctors, nurses, ASHAs, policemen, cleaning staff etc.; play a great role to combat the transmission of infection of COVID-19. In this context, our prime minister and other health authorities have shown their gratitude towards the frontline workers, who are now termed as corona warriors. Despite this, violence against them are also coming to light from some part of the country or the other. The ratio of patients to the healthcare providers are already below the minimum set proportion and these frontline workers are risking their lives to break the chain of infection.

In midst of the increasing number of cases, social distancing and prolonged lockdown are brewing uncertainty, panic hoarding and a debridement of the mental health of the

people. So, in the last section, the study aimed to analyse the barriers that prevents the awareness to turn into attitude. As per the data, it was seen that a majority of people were facing challenge from the all online set up while working or studying online, sometime or the other. Quite a few of them are facing some kind of loss in their academics or career, mostly or sometimes. Many respondents accepted to have indulged in panic hoarding of essential stuffs sometime or the other. Additionally, for the same reason, few of them are facing shortage of the necessary products and services. Taking a peek into the mental health scenario, a majority of the respondents are facing anxiety issues or getting panicked, some time or the other, seeing the current situation of India. In addition, most of them accepted to be irritated or short tempered or being sleepless worrying about the uncertainty of their future.

4.1 S.W.O.T. analysis of social distancing in light of COVID-19

4.1.1. Strengths
- Reduced incidence rates of cases infected with COVID-19.
- Reduced case fatality rates and adequate time to build herd immunity.
- Increased and focussed action from response groups and task forces.
- Rapid testing and proper surveillance in hotspot areas.
- Adequate time for contact tracing from confirmed cases.
- A barrier to community transmission by timely case isolation.
- Adequate number of frontline workers to give qualitative service to already infected cases.
- Healthcare and hospital facilities available to critical patients, which would have been a challenge to provide if there would have been a burst of new cases.

4.1.2 Weaknesses
- Negative impact on the mental health of the people.
- Panic hoarding of essential goods and products resulting in scarcity and unavailability of these to the masses.
- Negative impact on country's economy and share markets if continued for a prolonged period.
- Large uncertainty regarding the relative risk of the infection and the case fatality ratios.
- Mild, asymptomatic and those who are in incubation period might go undetected, posing a risk of community transmission.
- Supply chains of essential products and services like masks, PPE kits, sanitizers, rapid testing kits etc. and the response group capacity might get exhausted in long run.

4.1.3 Opportunities
- Social distancing and lockdown measures might contain the spread of the infection, resulting in limited transmission of the infection.
- The limited transmission can revive the country's economy much faster and open doors for exports in trade.
- Adequate time for increased surveillance and extensive research work, provides opportunity to develop vaccines and medicines at a faster rate with a better

knowledge about the novel coronavirus.

4.1.4 Threats
- Social, economic and political disruption of country if social distancing and lockdown measures are continued for a prolonged time.
- Huge setback to the globalised trade sector involving several countries most of which are badly affected by the pandemic.
- Imports from countries like China who have not yet proved to have contained the infection can pose a threat of resurgence of new cases.
- Increased fear leading to increased violence and stigmatisation against frontline workers.
- A deteriorated economy will increase poverty, unemployment and hunger, leading to increased crimes and violence.

5. Conclusion
Social distancing, isolation and community lockdown, as we see them, have proven to be of great impact to prevent the rate of transmission and the risk of new infection. But we can't deny their mental health impacts as well, as they bring with them fear, panic, uncertainty, and challenges about the present and the future scenario. People are getting inactive, facing the fear of getting infected, worrying about the economic loss, feeling lagged behind in their lives, getting uncertain about their future plans and many more.

Additionally, there has been numerous instances of violence and stigmatization against the frontline health workers. The stigma is also associated with the infected patients or those who have been quarantined at some point of time. This scenario is a result of lack of awareness and acceptability of strategies adopted by the govt. with an added fear of the unknown. Though the Government of India and health ministries have adopted policies to protect the sovereignty and dignity of the health professionals, [20] the problem lies in the perception of the general population. The attacks on health workers who are engaged in collection of samples are mere examples of fear driven actions. This calls for strategies that are people friendly with proper counselling before proceeding towards implementing a strategy. A stepping stone towards such strategy is the launch on the Arogya Setu mobile application by the Govt. of India. Though, its reach is limited to people owning smartphones and not to the poor, underprivileged masses.

Social distancing, not only, prevents the transmission of infection, it also provides the health workers with the precious time to do rapid testing of more and more people and provide adequate care to the patients who are infected with the virus. Hence, the Govt. should not rush into lifting the lockdown just by looking into the negative impacts. The positive impacts are long run and have already hold the explosion of infection in India so far.

The key issues identified are; stigmatization and violence, lack of awareness, panic buying and questionable mental health status. So, it is proposed that the Govt. should take the following steps in addition to the public health mitigation strategies;
- Increasing awareness of the general public about the COVID-19 infection through IEC materials, short films, radio spots etc., about how it spreads and most importantly, how it does not, so that stigmatization can be prevented.

- Proper counselling of the people prior to sample collection and testing visits. Help of media, renowned stars, dharma gurus or local people can be taken to increase the acceptability in the masses.
- Proper and adequate availability of necessary products and services to avoid panic buying and unnecessary hovering.
- Effective intervention strategies and encouraging people to remain fit and active to fight against their deteriorating mental health.

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