

Impact of Social Factors for Capacity Building to Confront COVID-19 Pandemic in India

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Abstract:

Behavioural changes in human population with response to the outbreak of pandemic can alter the spread of corona virus (COVID -19). People aware of the disease in their proximity can take measures to reduce their susceptibility to disease. Biological structure of corona virus and its propagation in human body is explained. In fact management of pandemic in India requires some sociological change so that desired biological changes come for eradication of corona virus. Effect of social parameters related to the capacity building of the society is studied here so that pandemic due to COVID -19 can be controlled. Also, logical inferences are compared with e-statistical data collected from hundred labours of Uttar Dinajpur, West Bengal working away states in India.

Keywords: COVID-19; Pandemic; Social distancing; Human distancing; Disaster; Hazards; Capacity Building

Introduction

India can be considered as mini world due to its geographical vastness (3.18 million sq.km), huge population (1387297452, 1st January,2020), the complexity of its cultural and religious diversity, existence of different socio-political thoughts, belief and faith, practices coexisting with poor social indicator, wide illiteracy and existence of different languages and races (<https://www.india.gov.in/>). The country does not have well connectivity by road or rail with different parts of it. Also, religion plays an important role in policy making in India though India is a constitutionally secular country. Some advancement in health sector can be noticed in India but still falls far short of ensuring effective public health care for all the citizen of the country. Expectancy of life in India is low and only 6.18% of the population above 65 years of age survives. India has suffered from pandemic several times due to cholera (1817), bubonic plague (1896), flu (1918), small pox (1974), swine flu(2009) etc. Because of the outbreak of bubonic plague in 1896, a new law known as “Epidemic Act, 1897” was enacted. Now it is again enforced in present situation and India is under lockdown for third phase under the same law. At present (14th May, 2020) death toll in India is 2551 and world is 295,971

(<https://www.worldometers.info/coronavirus/#countries>). Management of pandemic in India requires some sociological change which will lead to biological changes to eradicate corona virus (COVID-19) from India. Mukherjee et al (2020) [1] have suggested “human distancing with greater social bonding” instead of “social distancing” for more effective management to confront Corona Virus (COVID-19). First mathematical model known as SIR model on pandemic was published by William Ogilvy Kermack and Anderson G McKendrick[2] and subsequently many other authors modified the existing SIR model [3,4,5,6,7].

In this paper, we have concentrated on one of the parameters “S” (susceptible to disease) of SIR model based on the definition of disaster as suggested by UNDP. Our aim is to find out the major factors which are responsible for strengthening “human distancing with social bonding”, connected with “S”. Logical inference are compared with e-statistical data collected from labours of Uttar Dinajpur, West Bengal working in different states in India.

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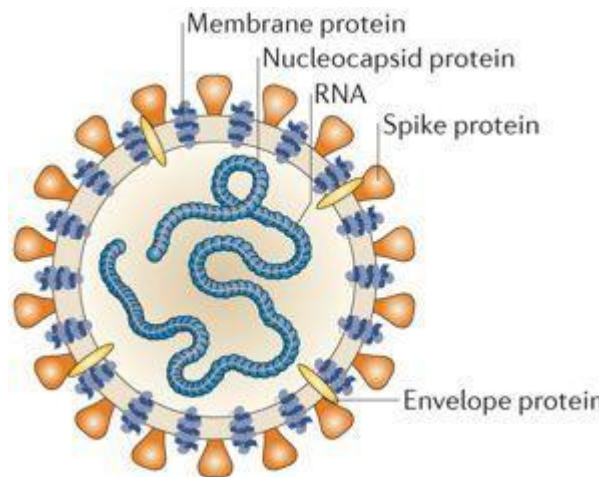
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Gateway of Corona Virus

The current pandemic situation was due to some virus, causing acute respiratory tract infection and was first reported in Wuhan, China, in 12 December 2019. Afterwards, a new name proposal of this virus as “COVID-19 or SARS-CoV-2” (11 February 2020) was coined by WHO and Coronavirus Study Group (CSG) of the International Committee [8]. Based on current epidemiological investigation, the incubation period is 1–14 days, mostly 3–7 days. And the COVID-19 is contagious during the latency period [9]. National Health Commission of the People’s Republic of China confirms that SARS-CoV-2 was most likely transmitted from wild bats to humans and later on from person to person [10]. Coronavirus (CoV-2) is host-specific and can infect humans as it belongs to β - coronavirus type, which has enveloped non-segmented positive-sense RNA [11]. To infect a human host, viruses must be able to gain entry into individual human cells. In this case SARS-CoV-2 has proteins on the surface known as spike protein, that latches onto human cells (Fig 1). A series of structural changes happen that allows the viral membrane to fuse with the host cell membrane. The viral genes can then enter the host cell to be copied, producing more viruses according to Central Dogma (<https://www.livescience.com/howcoronavirus-infects-cells.html>) [12].

Fig 1: Cartoon representation of SARS-CoV-2 structure. (Source:



<https://www.nature.com/articles/nrmicro3143>

Model Analysis and impact of its parameters on pandemic

We know that SIR model [2] is simplest and most established approach to modeling epidemic outbreak. This model assumes a well – mixed population in which individuals have average interaction and recovery patterns. Three important parameters in this model are S: susceptible to disease, I: Infected person, R: Recovery or die. In this model, transformation of Sto Imin (S_{Imin}) needs social distancing while (I_R) is connected with institutional health care with full medical equipment. As mentioned in [1], human distancing with social bonding in place of social distancing will be mentioned henceforth. Now we focus on the parameters which develop more social bonding to confront the disaster. We know that, capacity of the society and social bonding goes hand in hand.

Now definition of disaster can be expressed through a quite simple mathematical equation as led down by UNDP as

$$D = \frac{H X V}{C}$$

Where, D: Disaster, H: Hazards, V: Vulnerability, C: Capacity. Hence, more the capacity, more the social bonding and less disaster. When pandemic breaks, three parameters viz. C_1 , C_2 and C_3 where C_1 represents religion, faith, belief and practices; C_2 represents information sharing and C_3 represents preparedness of society and training of social volunteers have huge impact on disaster management. Though there are many other factors which influence C (Capacity) but we restrict ourselves to these three parameters only.

(a) Role of C1 on capacity building of society to reduce pandemic

Religion in India is characterised by a diversity of religious belief, faiths and practices (C1) though by constitution, India is a secular country. Indian soil is the birthplace of four World's major religions namely Hinduism, Buddhism, Jainism and Sikhism. Atheists are also there but in a limited number. According to 2011 census in India, we have population following Hinduism (79.8%), Islam (14.2%), Christianity (2.3%) and Sikhism (1.7%)

(<https://censusindia.gov.in/2011-Common/CensusData2011.html>).

COVID-19 pandemic has impacted religion in various ways and vice versa:

- Official declaration of cancellation of worship services of various faiths.
- Official declaration of cancellation of congregation of pilgrimages in the temples and festivals
- Official declaration of shift of religious services from in-person to online worships.

Normally different religious groups coexist with their religious belief and faith in India but worst form of communal violence's are also witnessed under the shadow of religious fundamentalists and crooked politicians. Irrational and unrealistic behavioural pattern of religious leaders has gone against human distancing as well as social bonding. As for example:

- On 14th March, district administration of Amritsar banned the entry of visitors to the basement of the Golden Temple Plaza

(<https://www.hindustantimes.com/cities/coronavirus-outbreak-golden-temple-plazabasement-closed-for-visitors/story-VD4HKAumUkhZhVXL7iqfaO.html>). Amidst corona virus fears Gurduwaras remain open till date and administrators refused to shut the Shrine. Akal Takht didn't give any verdict to close the door of Gurduwaras including Golden Temple.

- When the death toll in USA was increasing exponentially, on 11th April 2020 the day before Yester Sunday, the President of Claremont Institute tweeted for "resistance and civil disobedience to an unconstitutional Lockdown. It may be mentioned that corona virus was first noticed in France on 24th January and in Italy on 31st January, 2020

[13]. When the virus started spreading and death rally begun in Europe, no response of closing the religious institutions of Christianity was noticed till Pope, the Supreme religion leader of Christianity declared closing of Vatican City Church for worshipers on 9th March 2020 (<https://catholicphilly.com/2020/03/news/world-news/vatican-closes-st-peters-square-basilica-to-tourists/>). It was noticed that Bishops of India didn't instruct to close the Churches till Government announced lockdown on 25th March 2020.

- Shahi Imam of Jama Masjid, India declared closing of the Masjid for worshipers and visitors on 24th March 2020 to 31st March and afterwards extended according to Government's official announcement. For inaction of Shahi Imam at proper time, 25 BSF jawans got infected due to corona virus. It may be mentioned that Great mosque of Mecca and Masjid-an-Nabawi in Medina were declared closed much earlier

(<https://www.aa.com.tr/en/latest-on-coronavirus-outbreak/saudi-arabia-suspendsprayers-at-two-holy-mosques/1772591>). A mass Muslim evangelical event held in Delhi (13th -15th March 2020) had send shivers down the spine of corona virus hit India. Congregation attended by more than 2000 people including foreign delegates from different countries, was organized by Tablighi Jamaat. By then Delhi Government had already issued an advisory against large gathering. This Jamaat contributed to a cluster of more than 900 infected cases nationwide. Leaders of Tablighi Jamaat in Nizamuddin of New Delhi had acted callously by inviting foreign nationals from the countries which are already infected in the congregation

(<https://www.thehindu.com/news/cities/Delhi/coronavirus-200-people-fromnizamuddin-develop-symptoms-area-cordoned-off/article31204617.ece>). Not only that they had also allowed Jamaati's to overstay in the campus even violating Government's directive.

- On 8th March, thousands and thousands of people gathered in Thiruvanthapuram to attend a ten-day-long temple festival (<https://www.thehindu.com/news/cities/Thiruvananthapuram/thousands-of-womenflock-to-thiruvananthapuram-for-attukal-pongala-today/article31020975.ece>). On the same day, five new corona infected patients reported in Pathmmamthitta district of Kerala. By 9th March, 2020 total no of infected patients was 43 in the state. How many among them were infected due to their presence in the festival not known yet. Between

17th -19th March, 2020 more than 2 lakh of pilgrimages had visited Tirupati Temple without medical examination and human distancing was not maintained. Lord Venkateswara Temple near Tirupati and other renowned temples thronged by devotees from across the country remained open till 19th March, 2020 until Government's restrictions came into force. After the announcement of lockdown, Hon'ble Chief

Minister of Uttar Pradesh attended 'Ram Navami' festival in Ajothya which influences many couple of thousands of devotees to break the lockdown to celebrate the same (<https://thewire.in/politics/coronavirus-yogi-adityanath-lockdown-ramnavami-ayodhya>). Behavioural pattern of leaders geopraredised the call for 'Human

Distancing’.

(b) Role of C2 on capacity building of society to reduce pandemic

Information sharing plays an important role in disaster management. From the ancient period, people used to pass information in different ways during disaster. In Indian subcontinent till today, when there is an earthquake people used to blow Shank (conch) to alert neighbours. Government gets information in two ways:(a) official information system (b) social media. The second one plays a very important role nowadays. People had witnessed first through social media the lathi charge, bursting of tear gas shell by Police on starving labours who were walking through National Highway on their way back to home (Fig 2). People are aware of the society, legal system and what is happening in the micro-level and these help them to differentiate good and fake news. In the present timeline, many videos and news came through different apps that were manufactured and fake and thereby causing communal disharmony and thus broke the social bonding. Government had taken some actions against few fake videos and newsmakers. Tamil Nadu (TN) Government warned of stringent action against those spreading rumours linking religion or caste to corona virus. Situation was so prevailed that one of the Minister of TN Government stated “The virus does not attack on the basis of caste or religion”.



Fig 2: Photo representing a long walk back to home state of the migrant workers
(Source:<https://www.indiatoday.in/india/photo/migrant-worker-walk-home-coronaviruslockdown-pictures-1660519-2020-03-27>)

(c) Role of C3 on capacity building of society to reduce pandemic

First 21 days of lockdown (25th March-14th April, 2020) Government administration and its machinery was failing repeatedly to find drivers to carry the patients and dead bodies, burning place for cremation of dead bodies of corona affected patients. Chain of information from village level to Gram Panchayat onwards regarding hideouts of corona virus infected people, regular information for home and official quarantine people were missing as trained medical volunteers were not vividly active. On 16th May, 2020, just before the commencement of 4th phase lockdown the scenario of trained personnel is not changed. One day before, on 15th May 2020, 185 trained nurses working in different hospitals in Kolkata, West Bengal have left their jobs causing serious problems in health management in pandemic situation. Civil defence volunteers who are thought to be the backbone of civic society at the time of disaster were also not visible at all.

Inference from theoretical model

1. People attended religious festivals/rituals/prayers with full trust on the Almighty God, but one could not save themselves from the pandemic.
2. Unrealistic and unscientific attitude of religious leaders have created further problem
3. In this pandemic, religious institutions did not come forward openly to extend support (relief) though many religious institutions are financially extraordinarily rich.
4. Religious leaders/government did not take much initiative to stop transmitting communal news/videos for strengthening social bonding.
5. Government, socio political bodies, religious leaders have not acted as a cohesive force.
6. Government has not taken any lesson from the happenings of China/Europe/USA to enhance its medical and social capacity to mitigate the Pandemic.
7. Government (centre and states) did not raise trained volunteers after Pandemic in Europe. Had they been deployed, social bonding as well as human distancing could be maintained in a proper way.
8. Continuous call for “Social Distancing” has continuously minimized social bonding.
9. Absence of planning to bring back the labours working in away states to their home before announcement of lockdown.

Statistical Analysis

A set of questionnaire was prepared and send it to hundred labours of Uttar Dinajpur, West Bengal working in five different states viz. Delhi, Punjab, Haryana, Tamil Nadu and Kerala for their e-responses. Questionnaire (translated from Bengali to English) is given in format

Table 1 and the corresponding tabulated e-responses is given in table Table 2 below.

Table 1: Questionnaires (1-7) to labours of Uttar Dinajpur, West Bengal

Sl No.	Questions	Yes	No	No Comment
1.	Is religion has given you mental support to combat the situation?	a	b	c
2.	Was there any support in terms of Kinds from religious Institutions through religious leaders or volunteers for you?	a	b	C
3.	Are you agreeable to the statement “Fake news and videos have seriously affected social bonding”?	a	b	c
4.	Are your neighbours and job providers helpful to you during these days?	a	b	c
5.	Could you manage to maintain human distancing in your residence?	a	b	c
6.	Are you agreeable to the fact that more social bonding is helpful to build up the capacity to confront disaster?	a	b	c
7.	Do you think that Government (Centres and States) had positivity to bring you back to your home within lockdown?	a	b	c

* Put a tick (✓) to appropriate column in Table 1

Table 2: e-response of labours through questionnaires (1-7) given in Table 1. Row and column represents five different states and sub-questionnaires.

States	1			2			3			4			5			6			7		
	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c	a	b	c
Delhi	12	2	6	5	14	1	17	0	3	6	13	1	0	18	2	18	0	2	0	19	1
Punjab	11	5	4	10	10	0	18	0	2	5	10	5	1	17	2	19	0	1	0	20	0
Haryana	10	5	5	6	12	2	16	1	3	2	16	2	0	19	1	16	0	4	0	19	1
Tamil Nadu	14	3	3	5	14	1	18	0	2	4	14	2	2	17	1	19	0	1	0	18	2
Kerala	13	6	1	4	15	1	19	0	1	8	10	2	2	18	0	20	0	0	0	20	0
No. of responders	60	21	19	30	65	05	88	01	11	25	65	12	05	89	06	92	00	08	00	96	04

It reveals from the table T1, T2 that

1. Labours got mental support in this period from their religion (60%) though 65% did not get much needed relief from religious institutions or religious leaders.
2. Fake news and videos had adverse effect on social bonding and religious harmony (88%).
3. Job providers and neighbours did not give any support – stated by 63% of sample size.
4. Labours (89%) could not maintain human distancing at all in their residences.
5. More is social bonding, more is capacity of the country and thereby less is disaster stated by 92% of the labours.
6. Most of the labours (96%) strongly belief that Government (States and Centre) did not have any intention to bring them back to their home before declaration of 'lock -down'.

It is noticeably clear that e-statistics data analysis is quite compatible with the inferences drawn from the theoretical model.

Declaration of Competing Interest

The authors declare no conflict of interest. We confirm that the manuscript has been read and approved by all named authors.

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