Research Article

Coronavirus Disease (COVID-19): Spread, Awareness and Strategic Containment

Anil Sarin[1], _Akhil Sarin_[2]

[1]PhD, Post Doctorate DLitt, Professor, Faculty of Management Studies, MR International Institute of Research and Studies (Deemed University), Delhi-NCR, India.
[2]PhD, Business Consultant, Infosys, Bangalore, India.
DOI: https://doi.org/10.24321/0019.5138.202004

I N F O

Corresponding Author:
Anil Sarin, Faculty of Management Studies, MR International Institute of Research and Studies (Deemed University), Delhi-NCR, India.
E-mail Id:
dr.anilsarin@gmail.com
Orcid Id:
https://orcid.org/0000-0003-1023-011X
How to cite this article:
Sarin A, Sarin A. Coronavirus Disease (COVID-19): Spread, Awareness and Strategic Containment. _J Commun Dis_ 2020; 52(1): 22-31.

A B S T R A C T

Whenever, there is introduction of new medicine, medical intervention, new technology, studies, research, etc., world feels excited. The reason for this excitement is that everyone feels that lives will become better on this earth. On the contrary, the world of 21st century has been caught unaware from the dreadful Coronavirus disease (COVID-19), that is killing thousands of people every day irrespective of their economic or social status, and affiliation to developed, developing and under-developed countries. While writing this paper, the unfortunate death toll due to COVID-19 is highest in USA, known as strongest nation of the world due to its economic, military and technological development. This paper is an attempt of understanding the awareness level of people towards the precautions for containing coronavirus disease (COVID-19) in India through the engagement and integrated approach of Indian Government; based on the factors - social distancing, washing hands effectively and frequently, staying at home. On the basis of conducting survey and analyzing the data related to awareness (towards the precautions to combat this dreadful virus) of people in India, the results show that the government was able to make people aware in the shortest time. The awareness of public about the precautions and utility of lockdown proved useful resulting in much lessor causalities in India in comparison to the countries which delayed in taking these initiatives. Indian model of confining the virus seems to be valid till the appearance of COVID-19 treatment.

Keywords: Coronavirus Disease, COVID-19, Macro Uncontrollable Factors, Strategic Control, Containment, Management, Communicable Disease, Pandemic, Treatment

Introduction

COVID-19 seems to be a very strange and unfortunate development of this world. People forgot many unpleasant incidents including pandemic diseases that stirred the major population of the world around a hundred years back. People were thinking that there can't be outbreak of any disease which could take so many lives. It was thought that the world's medical infrastructure has become too strong and capable to handle the outbreak of any disease.

China reported a few cases of coronavirus disease (COVID-19)

23

Sarin A et al.
J. Commun. Dis. 2020; 52(1)

in December 2019, and at that time the whole world was confident that China was capable enough to handle it and it won't spread. Therefore, in initial days, other countries did not pay much attention to this development. But things became quite ugly with the reports of thousands of deaths because of coronavirus disease (COVID-19) in Wuhan, China.

Till January, no other country thought that it could happen to them also. But coronavirus disease (COVID-19) gave a serious and big shock to the whole world by appearing in almost two hundred and five countries within next 2 to 3 months, killing thousands of people. COVID-19 spread so fast that the most developed countries, like USA, reported death rate more than 40000, Italy 25000, Spain 22000 (till the writing of this paper) in few days. It is unfortunate happening for all of us, and we are sad about all these deaths. Nobody dreamt that the most powerful countries in this world will lose thousands of precious lives every day. The most affected countries in terms of causalities till date are America, Italy, Spain, France, Britain followed by many other countries.

In the meantime, decline in deaths and COVID-19 affected people appeared in Chinese media by the end of March 2020. Of course, it was welcome news for the whole world, but the expertise of China of controlling COVID-19 was not of much use to the world as liberal information was not available on this development.

When all such things were happening, India the largest democracy of the world with around 1.3 billion people was drawing attention of the whole world towards the possible severe attack of coronavirus disease (COVID-19). Interestingly, status of coronavirus disease (COVID-19), in India till date is a matter of relief as India has been able to confine its spread with less than one thousand of its mortality figure till date. This study reveals the aspect like awareness among people, created by Indian Government by involving doctors, played significant role for COVID-19's confinement in India till date.

Treatment of Coronavirus Disease (COVID-19)

Unfortunately, there is no medicine or procedure in medical sciences available for the treatment of coronavirus disease (COVID-19) in any of the countries till date. Therefore, the whole world is working on various strategies to control the spread of coronavirus disease (COVID-19) in their countries. However, the following are the common strategies being adopted by most of the countries.

- Find its treatment immediately
- In the absence of any treatment, at least stop the spread of coronavirus disease (COVID-19)
- Collect information to understand its pattern of spread
- Strengthen the medical infrastructure for treating people

Analysis of the Present Strategies to Contain Coronavirus Disease (COVID-19)

The analysis of the possible strategies available in the present scenario to contain coronavirus disease (COVID-19) is as follows

Find its treatment immediately: It is very challenging as to develop treatment for such killer virus is time consuming. Things become more complex when we look at the fact that scientists have no historical data about this virus. Everything has to be started from the beginning. The speed with which it is spreading among people and killing many of them, it is not possible at present to sit and start conducting Research and keep on waiting till scientists are able to develop its treatment. So let the scientist work on it, but world can't rely upon this development as it may take a few months or years together.

In the absence of any treatment to stop the spread of coronavirus disease (COVID-19): Till some treatment appears for this disease, it is important to stop its spread further or at least slow down its speed of spread. By the end of February or start of March 2020, it was well-known to all the countries of world that COVID-19 spread from person to person. It was the only precious information available about the dreaded virus. Many countries did not utilize this information to stop the spread of COVID-19 in their countries. India was the largest democratic country which developed and implemented strategic solution for stopping COVID-19 spread on the basis of this information that it spreads through contact. India followed the strategy of social distancing to stop or at least slow down the spread of COVID-19. India did not stop here but introduced lockdown of one day and subsequently the lockdown of whole country when hardly few cases of COVID-19 infected patients appeared. On the contrary, USA took a longer time to understand the strategic benefits of social distancing by imposing lockdown. America imposed lockdown but by that time COVID-19 got infected thousands of its citizens and deaths of people started taking place. Same is case of Italy, France, Germany, Iran and many other countries.

Collect information to understand its pattern of spread: Information is the most important and precious input for taking decision. In such rare developments, when thousands, literally every minute, one person is dying on this earth due to this dreadful virus, there is not only the need to take decision, but to take Quick Quality Decision (QQD). Accordingly, quality comes from quality information and quickness from quick information. Therefore, quick quality decision making is possible on the basis of Quick Quality Information (QQI). At this moment, it is very important for the leaders of all the countries to search for quality information and that too as fast as possible. In fact, India is the largest country which was considered as prone to

Sarin A et al.
J. Commun. Dis. 2020; 52(1)

24

the faster spread of the virus due to many of its thickly populated areas with moderate medical infrastructure. But the quick quality decision (QQD) making of its leadership shielded it from the onslaught of COVID-19 with few causalities. It is the power of QQD and visionary leadership.

Strengthen medical infrastructure for treating people: This approach is also a need of hour as COVID-19 affected people need symptomatic treatment. Creating infrastructure at this point is not easy task. If we take example of USA, Italy, France and Germany; these countries have already good medical infrastructure in place. But these countries did not introduce social distancing and lockdown in time; therefore, the number of infected people increased manifold in few days. This jump of infected people choked the existing medical services of these countries and quality treatment has become a big challenge. India with limited medical resources put all out efforts to reduce the spread of this coronavirus by adopting the strategy of social distancing through countrywide lockdown. It reduces the speed of spread of coronavirus in India. When in many developed countries death rate of people due to coronavirus reached to 1000 plus per day; India was hardly having 30 to 40 deaths per day. During this period, India upgraded its medical infrastructure manifolds by converting hotels, guest houses and railway coaches into hospital facilities and quarantine centers. India asked its car manufacturing companies to produce ventilators. It also manufactured PPEs, safety suits and masks in plenty. By this time, Indians were made aware about the disease and precautions among public through media advocacy were promoted intensively and extensively. In view of the above, research has been conducted to understand the awareness level of people in India about the social distancing and keeping the hygiene and other precautions to fight against coronavirus.

Utilization of QQDs by the Government of India to Contain Coronavirus Disease (COVID-19)

Government of India took quick-quality-decisions (QQDs) that they need engagement of public to fight with virus. They collected the following quality information and made all out efforts among people to make them aware about precautions:

- Maintain social distancing
- Wash hands with soap after small intervals
- Put mask on face or cover it with some clean cloth
- In case of some symptoms, consult doctor
- Stay at home as per the instructions of local government
- Apart from the liberal address to nation many times by the prime minister of India, government utilized all its resources to make the people aware about the spread of this virus

QQDs and awareness of people were the integral strategy of the Government of India. Accordingly, awareness levels of Indians about the precautions to contain coronavirus disease (COVID-19), have been studied with the following research methodology.

Research Methodology

The study was performed through the collection of both primary and secondary data. Primary data was collected through questionnaire from Indian residents across Mumbai, Delhi, Kolkata, Bengaluru and Chennai to understand their awareness towards the precautions to contain coronavirus disease (COVID-19). Foreigners and NRIs were not considered in the study. The primary data had been collected from February 2020 – April, 2020. Foreigners and NRIs had not been considered for the study.

The questionnaire was filled by 1045 respondents, out of which 1020 were found suitable for the purpose of analysis. The secondary data has been captured from various news articles, websites, publications etc. The analysis of primary data has been done using SPSS. The representation and analysis of the collected data has been done using appropriate tables. ANOVA (at 5 per cent level of significance) and Chi-Square have been used for testing of hypothesis.

Reliability Statistics

The Cronbach's Alpha towards the set of questions designed to find out awareness among Indian residents towards the precautions to contain coronavirus disease (COVID-19) is 0.764 (Table 1). Accordingly, the value of Cronbach's Alpha, lies in acceptable range.[1]

Table 1.Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N. of Items
0.764	0.765	5

Awareness about the Precautions to Contain Coronavirus Disease (COVID-19)

The study has been conducted to find the awareness level of Indian residents towards precautions to contain coronavirus disease (COVID-19).

Null Hypothesis (H0): Indian residents are not aware about the precautions to contain coronavirus disease (COVID-19).

Alternate Hypothesis (H1): Indian residents are aware about the precautions to contain coronavirus disease (COVID-19).

The mean awareness score of 1020 Indian residents surveyed towards the precautions to contain coronavirus disease (COVID-19) is 3.08 (Table 2) on a scale ranging from 1 to 5 (1 refers to the lowest degree of awareness score and 5 indicates high degree of awareness).

25

Sarin A et al.
J. Commun. Dis. 2020; 52(1)

Table 2.Awareness Score - COVID-19

Description	N	Mean	Std. Deviation
Awareness Score - COVID-19	1020	3.08	0.720

Table 3.T-Test - Awareness Score - COVID-19

Description	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Awareness Score - COVID-19	3.341	1019	0.001	0.075	0.031	0.120

As per t-test (table 3) at 5 per cent level of significance t (1019) = 3.341, p = .001. 2-tailed test results have been produced through the SPSS statistical software. Further, t-statistic has also been compared with the critical t-values mentioned in the t-table at 5 per cent level of significance in order to perform one-tail testing of hypothesis. The critical t-value as per t-table at 5 per cent level of significance t (1019) = 1.65. Hence, null hypothesis is rejected. Accordingly, Indian residents are aware about the precautions to contain coronavirus disease (COVID-19).

Awareness Score Differentiation towards the Precautions to Contain Coronavirus Disease (COVID-19) among Different Gender

The awareness level of Indian residents towards the precautions to contain coronavirus disease (COVID-19) among different gender has been analyzed (Table 4).

Null Hypothesis (H0): There is no significant difference in awareness score towards the precautions to contain coronavirus disease (COVID-19) among different gender.

Table 4.T-Test - Awareness Score - COVID-19 * Gender

Description	N	Mean	Std. Deviation
Male	522	2.95	0.699
Female	498	3.20	0.720
Total	1020	3.08	0.720

Table 5.ANOVA - Awareness Score - COVID-19 * Gender

Description	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	15.625	1	15.625	31.045	0.000
Within Groups	512.353	1018	0.503		
Total	527.977	1019			

Alternate Hypothesis (H1): There is significant difference in awareness score towards the precautions to contain coronavirus disease (COVID-19) among different gender.

As determined by ANOVA (Table 5) at 5 per cent level of significance, F (1,1018) = 31.045, p = .000. Hence null hypothesis is rejected i.e. there is significant difference in awareness score towards the precautions to contain coronavirus disease (COVID-19) among different gender.

Awareness Score Differentiation towards the Precautions to Contain Coronavirus Disease (COVID-19) among different Age Groups

The awareness level of Indian residents towards the precautions to contain coronavirus disease (COVID-19) among different age groups has been analyzed (table 6).

Null Hypothesis (H0): There is no significant difference in awareness score towards the precautions to contain coronavirus disease (COVID-19) among different age groups.

Alternate Hypothesis (H1): There is significant difference in awareness score towards the precautions to contain coronavirus disease (COVID-19) among different age groups.

Table 6.T-Test - Awareness Score – COVID-19 * Age Group

Description	N	Mean	Std. Deviation
Less than 25 years	58	2.60	0.844
25 years and above but less than 40 years	353	3.09	0.660
40 years and above but less than 55 years	417	3.14	0.720
55 years and above	192	3.04	0.733
Total	1020	3.08	0.720

Sarin A et al.
J. Commun. Dis. 2020; 52(1)

26

Table 7. ANOVA - Awareness Score – COVID-19 * Age Group

Description	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	15.541	3	5.180	10.271	0.000
Within Groups	512.437	1016	0.504		
Total	527.977	1019			

Table 8. Tukey HSD: Awareness Score – COVID-19 * Age Group

Dependent Variable: Awareness Score - COVID-19		Mean Difference	Sig.
Age Group			
Less than 25 years	25 years and above but less than 40 years	-0.50	0.000
	40 years and above but less than 55 years	-0.55	0.000
	55 years and above	-0.45	0.000
25 years and above but less than 40 years	Less than 25 years	0.50	0.000
	40 years and above but less than 55 years	-0.05	0.747
	55 years and above	0.05	0.860
40 years and above but less than 55 years	Less than 25 years	0.55	0.000
	25 years and above but less than 40 years	0.05	0.747
	55 years and above	0.10	0.355
55 years and above	Less than 25 years	0.45	0.000
	25 years and above but less than 40 years	-0.05	0.860
	40 years and above but less than 55 years	-0.10	0.355

As determined by ANOVA (Table 7) at 5 per cent level of significance $F_{(3,1019)} = 10.271$, p = .000. Hence null hypothesis is rejected i.e. there is significant difference in awareness score towards the precautions to contain coronavirus disease (COVID-19) among different age groups. Accordingly, post hoc Tukey HSD has been conducted to determine the difference in awareness score among respective age groups.

As determined by Tukey HSD (Table 8) at 5 per cent level of significance, the level of awareness towards the precautions to contain coronavirus disease (COVID-19) is significantly different for age group of less than 25 years in comparison to all other age groups. There is no significant difference in awareness score towards the precautions to contain coronavirus disease (COVID-19) among 25 years and above but less than 40 years, 40 years and above but less than 55 years and 55 years and above age groups.

Awareness Score Differentiation towards the Precautions to Contain Coronavirus Disease (COVID-19) among Different Education Level

The awareness level of Indian residents towards the precautions to contain coronavirus disease (COVID-19) among different education levels has been analyzed (Table 9).

Null Hypothesis (H0): There is no significant difference in awareness score towards the precautions to contain coronavirus disease (COVID-19) among different education levels.

Alternate Hypothesis (H1): There is significant difference in awareness score towards the precautions to contain coronavirus disease (COVID-19) among different education levels.

Table 9. Awareness Score – COVID-19 * Education Level

Description	N	Mean	Std. Deviation
School Level	26	1.57	0.678
Graduate	522	2.79	0.531
Professional	177	3.86	0.391
Post-graduate	265	3.11	0.531
Doctorate	30	4.43	0.337
Total	1020	3.08	0.720

27

Sarin A et al.
J. Commun. Dis. 2020; 52(1)

Table 10.ANOVA - Awareness Score - COVID-19 * Education Level

Description	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	265.106	4	66.276	255.907	0.000
Within Groups	262.872	1015	0.259		
Total	527.977	1019			

Table 11.Tukey HSD - Awareness Score - COVID-19 * Education Level

Dependent Variable: Awareness Score - COVID-19			
Education Level		Mean Difference	Sig.
School Level	Graduate	-1.22	.000
	Professional	-2.29	.000
	Post-graduate	-1.54	.000
	Doctorate	-2.86	.000
Graduate	School Level	1.22	.000
	Professional	-1.07	.000
	Post-graduate	-0.32	.000
	Doctorate	-1.64	.000
Professional	School Level	2.29	.000
	Graduate	1.07	.000
	Post-graduate	0.75	.000
	Doctorate	-0.58	.001
Post-graduate	School Level	1.54	.000
	Graduate	0.32	.000
	Professional	-0.75	.000
	Doctorate	-1.32	.000
Doctorate	School Level	2.86	.000
	Graduate	1.64	.000
	Professional	0.58	.001
	Post-graduate	1.32	.000

As determined by ANOVA (Table 10) at 5 per cent level of significance $F_{(4,1015)}$ = 255.907, p = .000. Hence null hypothesis is rejected i.e. there is significant difference in awareness score towards the precautions to contain coronavirus disease (COVID-19) among different education levels. Accordingly, post hoc Tukey HSD has been conducted to determine the difference in awareness score among respective education levels.

As determined by Tukey HSD (Table 11) at 5 per cent level of significance, the level of awareness towards the precautions to contain coronavirus disease (COVID-19) is significantly different for each education level in comparison to other education levels.

Awareness Score Differentiation towards the Precautions to Contain Coronavirus Disease (COVID-19) among Different Occupations

The awareness level of Indian residents towards the precautions to contain coronavirus disease (COVID-19) among different occupations has been analyzed (table 12).

Null Hypothesis (H0): There is no significant difference in awareness score towards the precautions to contain coronavirus disease (COVID-19) among different occupations.

Alternate Hypothesis (H1): There is significant difference in awareness score towards the precautions to contain coronavirus disease (COVID-19) among different occupations.

Table 12.Awareness Score - COVID-19 * Occupation Status

Description	N	Mean	Std. Deviation
Student	38	2.09	0.762
Homemaker (Family Management)	225	2.86	0.685
Service	504	3.18	0.648
Business/ Self-employed	189	3.33	0.745
Retired	64	2.80	0.517
Total	1020	3.08	0.720

Table 13.ANOVA - Awareness Score – COVID-19 * Occupation Status

Description	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	69.279	4	17.320	38.325	0.000
Within Groups	458.698	1015	0.452		
Total	527.977	1019			

As determined by ANOVA (table 13) at 5 per cent level of significance $F_{(4,1015)}$ = 38.325, p=.000. Hence null hypothesis is rejected i.e. there is significant difference in awareness score towards the precautions to contain

Sarin A et al.
J. Commun. Dis. 2020; 52(1)

28

coronavirus disease (COVID-19) among different occupations. Accordingly, post hoc Tukey HSD has been conducted to determine the difference in awareness score among respective occupations.

Table 14.Tukey HSD - Awareness Score – COVID-19 * Occupation Status

Dependent Variable: Awareness Score - COVID-19		Mean Difference	Sig.
Occupation Status			
Student	Homemaker (Family Management)	-0.77	0.000
	Service	-1.09	0.000
	Business / Self-employed	-1.23	0.000
	Retired	-0.71	0.000
Homemaker (Family Management)	Student	0.77	0.000
	Service	-0.32	0.000
	Business / Self-employed	-0.46	0.000
	Retired	0.06	0.969
Service	Student	1.09	0.000
	Homemaker (Family Management)	0.32	0.000
	Business / Self-employed	-0.14	0.086
	Retired	0.38	0.000
Business / Self-employed	Student	1.23	0.000
	Homemaker (Family Management)	0.46	0.000
	Service	0.14	0.086
	Retired	0.52	0.000
Retired	Student	0.71	0.000
	Homemaker (Family Management)	-0.06	0.969
	Service	-0.38	0.000
	Business / Self-employed	-0.52	0.000

As determined by Tukey HSD (table 14) at 5 per cent level of significance, the level of awareness towards the precautions to contain coronavirus disease (COVID-19) is significantly different for most of the occupations in comparison to other occupations. There is no significant difference in awareness towards the precautions to contain coronavirus disease (COVID-19) among residents belonging to service and business/self-employed categories. There is also no significant difference in awareness towards the precautions to contain coronavirus disease (COVID-19) among residents belonging to retired and homemaker (family management) categories.

Awareness Score Differentiation towards the Precautions to Contain Coronavirus Disease (COVID-19) among Different Annual Family Income Groups

The awareness level of Indian residents towards the precautions to contain coronavirus disease (COVID-19) among different annual family income groups has been analyzed (Table 15).

Null Hypothesis (H0): There is no significant difference in awareness score towards the precautions to contain coronavirus disease (COVID-19) among different annual family income groups.

Alternate Hypothesis (H1): There is significant difference in awareness score towards the precautions to contain coronavirus disease (COVID-19) among different annual family income groups.

Table 15.Awareness Score - COVID-19 * Annual Family Income

Description	N	Mean	Std. Deviation
Less than Rs 10 lacs	366	2.85	0.675
Rs 10 lacs and above but less than Rs 20 lacs	331	3.16	0.681
Rs 20 lacs and above but less than Rs 30 lacs	247	3.21	0.712
Rs 30 lacs and above	76	3.34	0.836
Total	1020	3.08	0.720

Table 16.ANOVA - Awareness Score - COVID-19 * Annual Family Income

Description	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	31.182	3	10.394	21.257	0.000
Within Groups	496.795	1016	0.489		
Total	527.977	1019			

As determined by ANOVA (table 16) at 5 per cent level of significance F (3,1016) = 21.257, p = .000. Hence null hypothesis is rejected i.e. there is significant difference in awareness score towards the precautions to contain

29

Sarin A et al.
J. Commun. Dis. 2020; 52(1)

coronavirus disease (COVID-19) among different annual family income groups. Accordingly post hoc Tukey HSD has been conducted to determine the difference in awareness score among respective annual family income groups.

Table 17. Tukey HSD - Awareness Score - COVID-19 * Annual Family Income

Dependent Variable: Awareness Score - COVID-19			
Family Income per Annum		**Mean Difference**	**Sig.**
Less than Rs. 10 lacs	Rs. 10 lacs and above but less than Rs 20 lacs	-0.31	.000
	Rs. 20 lacs and above but less than Rs 30 lacs	-0.36	.000
	Rs. 30 lacs and above	-0.49	.000
Rs. 10 lacs and above but less than Rs. 20 lacs	Less than Rs. 10 lacs	0.31	.000
	Rs. 20 lacs and above but less than Rs. 30 lacs	-0.05	.821
	Rs. 30 lacs and above	-0.18	.190
Rs. 20 lacs and above but less than Rs. 30 lacs	Less than Rs. 10 lacs	0.36	.000
	Rs. 10 lacs and above but less than Rs. 20 lacs	0.05	.821
	Rs. 30 lacs and above	-0.13	.513
Rs. 30 lacs and above	Less than Rs. 10 lacs	0.49	.000
	Rs. 10 lacs and above but less than Rs. 20 lacs	0.18	.190
	Rs. 20 lacs and above but less than Rs. 30 lacs	0.13	.513

As determined by Tukey HSD (Table 17) at 5 per cent level of significance, the level of awareness towards the precautions to contain coronavirus disease (COVID-19) is significantly different for Indian residents having annual family income less than Rs 10 lacs in comparison to all other annual family income groups. There is no significant difference in awareness score towards the precautions to contain coronavirus disease (COVID-19) make among Indian residents having annual family income of Rs 10 lacs and above but less than Rs 20 lacs, Rs 20 lacs and above but less than Rs 30 lacs and Rs 30 lacs and above.

Discussion

The availability of literature is also a challenge as coronavirus disease (COVID-19) is recent development. However, few articles have appeared in some of the journals. As per the material available, most of the countries used their wisdom on this issue. The prime minister, Boris Johnson, addressed the nation at a press conference on 3 March 2020, and mentioned that UK was "extremely well prepared."[2] Britain crossed around 5000 of deaths within next one month. It is very unfortunate to mention here, that the prime minister himself got admitted to ICU after catching COVID-19.[3]

Till now no one knows the treatment of coronavirus. Public engagement is key for containing COVID-19 pandemic.[4] The paper mentions a few of the tools that could be used for containing the spread of this dreadful virus.[5] These tools are social distancing, quarantine and prompt reporting of the cases.[6] As per Bhatia, it all requires public engagement in the management of containing this dreadful virus. The role of public is very important.[7]

Online products can be sold during this time.[8] This will keep the economy running at the same time.[9] This will help in managing the issue in a better manner.[10] It is possible to run family business by keeping social distancing.[11] It will allow business activity as take care of precautions.[12] Long time lockdown period may affect the mental health of people.[13] Therefore there is a need to issue advisories for stress management.[14]

The editorial which appeared in *The Lancet* put light on many issues related to the mismanagement of coronavirus disease (COVID-19) by many countries and that includes their delayed actions for containing it. There is a mention of countries like UK, the USA, and Sweden now looks increasingly poorly judged. The leaders of many countries scrambled to acquire diagnostic tests, personal protective equipment, and ventilators for overwhelmed hospitals, there is growing sense of anger.[15]

Physical distancing is need of the hour but it may stretch mental health system.[16]

Anil sarin's "Contributory Theory of Existence" suggests that all human beings on this earth have two factors– demanding factor and let me give factor. However, the mix of demanding and let me give factors varies from individual to individual. The safety and health of consumers can influence any business house. During such happenings, leaders are required to motivate 'let me give' side of their citizens for making them to engage with the strategic actions of government in the national interest.[17]

Some of the countries, by delaying their actions for fighting against COVID-19 cost them heavily. It is a case of 'Nosedive Strategy'.[18] Throughout history, infectious diseases represent a major global threat to human life and health, knowing neither geographic nor political borders.[19]

The macro environment plays a crucial role and it can have a huge impact on the health and livelihood of people.[20] The awareness of people towards such scenarios is of prime importance.[21]

Sarin A et al.
J. Commun. Dis. 2020; 52(1)

30

It also gives message to premium medical and management institutes that there is a need to incorporate the contemporary issues regarding the sensitivity towards the safety of people.[22] At this stage it is required to take immediate initiatives for in order to address medical problems like coronavirus disease (COVID-19).[23]

Public health authorities should keep watch on the situation, and respond to the developments of the virus with quality information.[24]

SWOT analysis is one of the major tools that help to understand the present scenario and accordingly provide strategic direction in such situations.[25] The market for various products and services is dependent upon the health of people to ensure their prolonged survival.[26] Poor decision making with respect to the health of people by government can ruin the economy of country.[27]

Currently, there is no treatment for coronavirus disease (COVID-19), and experiments are being made with existing drugs.[28] Till that the best solution is to identify coronavirus disease (COVID-19) infected people immediately and quarantine them to avoid its spread to masses.[29] As per WHO, the basic principles to reduce the spread of COVID 19 - avoiding close contact with people, frequent hand-washing etc.[30]

For managing the nations effectively, understanding of the overall macro-health issues play important role.[31] The effective solutions does not always come from branded institutions always.[32] It could be from any source.[33]

Conclusion

The study shows that people of India are aware about the steps to be taken for containing the coronavirus disease (COVID-19). When other countries were looking at China's mortality rate of this disease, India took it as a warning and started preparing for it. Interestingly, the Government of India's campaign was able to spread awareness across the country and that includes segments like poor, rich, men, women, literate, illiterate, working and non-working. The engagement of people for containing coronavirus disease (COVID-19) in India proved very useful and helped in saving precious lives of its citizens.

Nobody could predict future, same is true in case of spreading coronavirus disease (COVID-19) also, if in a worst scenario, it spreads in India like USA, Italy and other countries, still India is in advantageous position. Since by postponing the spread of coronavirus disease (COVID-19) for few months, India has been able to expand its medical infrastructure by creating thousands of additional beds in its hospitals, established beds and treatment facilities in trains to the capacity of around 60,000 of beds that could be moved to any part of India, if situation warrants. Thousands of ventilators have been installed. Such massive

preparedness would definitely drop causalities significantly, even in case of its community spread in India. So the government's awareness strategy seems to be working in both the situations.

Recommendation

On such rare occasions, there is not a need of taking only decisions, but quick quality decision (QQD) making is the requirement, which India did. Other nations like USA, Italy, Spain, UK etc. took delayed decisions of locking down, and engagement of public for spreading awareness to contain the spread of coronavirus disease (COVID-19), were not quick decisions.

The public engagement along with other stakeholders play significant role while combating such pandemics. In a very first initiative, Government of India, started campaign of making public aware about the precautions for avoiding the spread of this disease. The research shows, they were able to achieve it by improving the awareness among people from all segments. It worked and people started supporting the campaign of government and the results are in front of all us.

Other countries could also utilize the strategies of India to contain the spread of coronavirus disease (COVID-19) in their country for saving the lives of their citizens as it is possible, and India proved it. WHO should also promote Indian model among other countries, till medical sciences is able to find the treatment of coronavirus disease (COVID-19).

Conflict of Interest: None

References

1. M&E Studies, "Reliability Analysis in SPSS," [Online]. Available: http://www.mnestudies.com/research/reliability-analysis-spss.

2. Hiam L, McKee M, Dorling D. The NHS has been run on the goodwill of its staff for too long. 7 April 2020. [Online]. Available: https://blogs.bmj.com/bmj/2020/04/07/the-nhs-has-been-run-on-the-goodwill-of-its-staff-for-too-long/.

3. BBC, "Coronavirus: Boris Johnson moved to intensive care as symptoms worsen," 7 April 2020. [Online]. Available: https://www.bbc.com/news/uk-52192604.

4. Dhingra N, Sarin A, Gill BS. CSR Expenditure and Corporate Profitability in India. *International Journal of Business and Administration Research Review* 2015; 3(9): 70-77.

5. Dhingra N, Sarin A, Gill BS. CSR Performance of Central Public Sector Enterprises in India: An Analysis. *International Journal of Research in Management & Social Science* 2015; 3(2): 48-54.

6. Dhingra N, Sarin A, Gill BS. Corporate Social Responsibility in Selected Central Public Sector Enterprises in India: A Closer Look. *International Journal of Business and*

31

Sarin A et al.
J. Commun. Dis. 2020; 52(1)

Administration Research Review 2015; 1(8): 247-252.

7. Bhatia R. Public engagement is key for containing COVID-19 pandemic. *Indian Journal of Medical Research* 2020.

8. Gupta D, Sarin A. A Comparative Study on Differences in Consumer Buying Aspects Through Online and Offline Retailing. *Universal Review* 2019; 8(4): 251-259.

9. Gupta D, Sarin A. A Study on Assessing the Growth and Demand of Electronics (White Goods) in India. *International Journal of Research and Analytical Reviews* 2018; 5(3): 807-809.

10. Gupta D, Sarin A. A Study on Factors Influencing Consumers to Purchase Apparel Online or Offline. *Universal Review* 2019; 8(4): 260-266.

11. Pathak S, Sarin A. Assessing Stressors Responsible for Stress Generation among Women Employees in Indian BPO's. *American International Journal of Research in Humanities, Arts and Social Sciences* 2015; 3(10): 274-280.

12. Pathak S, Sarin A. Differentials in Stressors and Stress Responses Among Males and Females Employees in BPOs in India - A Rational Review. *International Journal of Research* 2015; 2(4): 700-717.

13. Pathak S, Sarin A. Gender Differences In Stress Outcomes: A Contemporary Issue For The BPO's In NCR, India. *International Journal of Management, IT and Engineering* 2015; 5(7): 85-100.

14. Pathak S, Sarin A. Management of Stress Among Women Employees in BPO Industry in India: A Contemporary Issue. *International Journal of Management and Business Studies*, 2011; 1(3): 65-70.

15. The Lancet - Editorial. COVID-19: learning from experience. *The Lancet* 2020; 395: 1011.

16. Johnson W, Humble A. To Take Care of Others, Start by Taking Care of Yourself. Harvard Business Review, 28 April 2020.

17. Sarin A. Corporate Strategic Motivation: Evolution Continues- Henry. A. Murray's Manifest Needs to Maslow's Hierarchy of Needs to Anil Sarin's Contributory Theory of Existence. *The Journal of American Academy of Business, Cambridge* 2009; 14(2): 237-244.

18. Sarin A. Boeing Technological Issues and Challenges: Nosedive Strategy. *International Journal of Innovative Technology and Exploring Engineering* 2019; 8(11): 481-485.

19. Brida M, Chessa M, Gu H, Gatzoulis MA. The globe on the spotlight: Coronavirus disease 2019 (Covid-19),. *International Journal of Cardiology* 2020; 1-3.

20. Sarin A, Gupta R. Solar Residential Rooftop Systems (SRRSs) in India: PEST and Environment Analysis. *International Journal of Applied Business and Economic Research* 2017; 15(4): 71-84.

21. Sarin A, Gupta R, Jituri VV. Solar Residential Rooftop Systems (SRRS) in South Delhi: A Strategic Study with Focus on Potential Consumers' Awareness. *International Journal of Renewable Energy Research Delhi: A Strategic Study with Focus on Potential Consumers' Awareness* 2018; 8(2) 954-963.

22. Sarin A. Contemporary Issues in Services Marketing. *Indian Journal of Marketing* 2007; 37(10): 40-44.

23. Jituri VV, Sarin A. LED Lighting in India: Analysis on Progress. *The International Journal of Business & Management* 2015; 3(3): 30-35.

24. Lai CC, Shih TP, Ko WC, Tang HJ, Hsueh PR. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and coronavirus disease-2019 (COVID-19): The epidemic and the challenges. *International Journal of Antimicrobial Agents* 2020; 55(3): 1-9.

25. Sarin A, Gupta R, Jituri VV. Solar Residential Rooftop Systems Business Models: SWOT Analysis. *Indian Journal of Environmental Protection* 2019; 39(5): 479-488.

26. Jituri VV, Sarin A. Stakeholders and Influencers in LED Lighting in India. *Research Journal of Social Science & Management* 2015; 5(8): 193-201.

27. Sarin A. Strategic Consumer Approach Towards Boeing 737 Max Planes. *International Journal of Scientific & Technology Research* 2020; 9(1): 3709-3715.

28. Ahuja SK, Sarin A. Five Must Have Ingredients For Success Full Family Business. *International Journal of Information Technology and Management* 2016 10(15).

29. Wu YC, Chen CS, Chan YJ. The outbreak of COVID-19. *Journal of the Chinese Medical Association* 2020; 83(3): 217-220.

30. World Health Organization. Novel Coronavirus(2019-nCoV), Situation Report 18. 2020.

31. Sarin A. Manage India - The Strategic Management of Corporate and Social Sector. *Prabandhan: Indian Journal of Management* 2010; 3(10): 47-51.

32. Ahuja SK, Sarin A. Stress of Family Business. *International Journal of Information Technology and Management* 11(17): 20-23.

33. Sarin A. Lehman: Premier Branded Talent Syndrome. *Prabandhan: Indian Journal of Management* 2009; 2(1): 29-32.