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COVID-19 an infectious disease influenced in modern era - recent survey in India

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A B S T R A C T

The virus which is called as corona spoiling many of human lives as well as countries growth. Coronavirus is an infectious disease, so spreading from one person to other easily. Till now there is no medicine for corona. World Health Organization (WHO) taking lot of steps to control it. In India many of them get affected by coronavirus called COVID-19. A household survey is conducted nationally through online. This survey is a method for checking knowledge about the infectious virus. In this online survey some questionnaires were asked. People take their own interest and submit their reply through mobile phone and laptop/desktop devices. After analysing the survey, it is clearly proved that people didn’t have enough knowledge about COVID-19.

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1. Introduction

The word Corona described from the Latin word Crown. Coronavirus is a virus which affects animals during 19th century. M.C. Hawn and Arthur Schalk from North Dakota described about Coronaviruses [1] affected chickens in 1930’s. The virus spreaded chicken is called as IBV (Infections Bronchitis Virus). In 1940’s the coronaviruses which spreaded for animals are called MHV (Mouse Hepatitis Virus) and TGEV (Transmissible Gastroenteritis Virus) [4]. British Medical Research Council give a description about coronavirus in the year 1960 [2]. In 1960’s coronavirus first discovered was a large family of viruses [3]. Due to this illness for people and animals are affected a lot. These viruses severely affect the respiratory system. So, it is called as Severe Acute Respiratory System Coronavirus (SAR-Cov). Many of them affected mildly were recovered without any kind of special treatment. But severely affected persons were unable to recover. In 2019, it introduced in Wuhan (China) followed that it spreads throughout the world [13]. If it is infected by a person, its unable to predict for the first 14 days. Due to this reason, it’s difficult to avoid spreading. The symptoms include fever, difficulty in breathing and flu like symptoms. The precaution measures are maintaining social distance of 2 m, staying home, wearing mask and washing hands for every 20 min.

The origin of human virus is shown in Fig. 1. Two kinds of coronaviruses are detected, 1) SARS (Severe Acute Respiratory System) and 2) Middle East Respiratory Syndrome (MERS). In 2002 to 2003 SARS occurs around the world, nearly 800 death and around 8,000 people infected [5]. In 2012 MERS sporadically occurs, due to these 900 deaths and around 2,500 people infected [6]. The common human coronaviruses are a) Alphacoronaviruses (HCoV-229E, HCoV-NL63) and b) Betacoronaviruses (HCoV-OC43, HCoV-HKU1). Dorothy Hamre and John Procknow the medical students of the University of Chicago discovered a new cold virus called 229E which affects kidney well in 1965 [7]. In 1967, June Almeida a Scottish Virologist gave a study about two novel strains B814 and 229E at St. Thomas Hospital in London [8]. A virus called IBV (Infectious Bronchitis Virus) is a mouse hepatitis and a novel cold virus is known as coronaviruses introduced in Wuhan in 2019 [12]. In Wuhan, there is a wet market, in that large number of fishes, birds and animals were sold. Due to this the viruses easily jumped from animals to humans. Thus Covid-19 has been identified. Within a
short period, it spreads to Italy, America, India, etc., likewise throughout the world. Fig. 2 represents the coronavirus relevant content in 12th standard book in Tamil Nadu State Board syllabus.

In 1930s, the chickens were affected by Infections Bronchitis Virus and in 1970s, the bats were affected by Betacoronaviruses \cite{9,11}. Like Coronaviruses, in 1961 cholera spreaded throughout the world more than 4.0 million people affected due to cholera and 143,000 people died \cite{10}. Likewise, now due to Coronaviruses 2,626,321 were affected and 181,938 were died upto 24th April 2020. Because of this spreading virus lockdown happens. By maintaining lockdown rules many of the lives get saved. But due to lockdown some of the country’s growth get affected. Government in India helps the people for food and their daily routine needs. As an Indian am proudful to be a citizen and living under a safe Government.

2. Related study

The virus spreading from one person to another is controlled by quarantining the affected person. If a person is affected by coronavirus, that person is admitted in a hospital and he/she should be ventilated. That affected person neighbours and family members are quarantined. By that way spreading of virus is reduced. Some of the preventive measures were used to prevent ourselves. Such as a) often clean hands, b) maintaining a social distance of 2 m, c) use mask to cover your face, d) stay home and e) consult a doctor, if you are suffering from fever or cold. By using these precautions easily avoid spreading. Because for the first 14 days it is difficult to identifies the infectious virus is affected or not. The major symptoms of coronaviruses are as follows; fever, dry cough, headache, diarrhoea, vomiting, fatigue, lost of smell and taste, difficulties in breathing, kidney failure, stomach problems, etc., The common symptoms were shown in Fig. 3.

3. Results & analysis

The data which is collected from the online survey were analyzed confidentially. Overall 10 important questions were asked in the online forum. Coronavirus is a spreading disease, so easily it will jump from one person to another. To avoid spreading some precautions are needed. One of the question is, “how frequently you would wash your hands?”. For this survey only 2500 people show their interest in answering. Among 2500 person only 2060 chosen every two hours as answer. That is 93.1% of them know the importance of washing hands.

Out of 2500 person 120 of them chosen “before and after eating”, it seems 5.4% thinking that washing hands are necessary for eating. 33 of them answered very rare, i.e., 1.5% never wash their hands for having food in hygienic manner. Fig. 4 shows the analysis of washing hands, in which x-axis represents the number of people participated and y-axis represents the purpose of washing hands. Based on the washing hands purpose another one question also enquired as, “How long you should wash your hands”. For this among 2000 person, 1979 of them answered as 20sec. that is 89.6% of them how to kill infectious virus by washing hands for 20sec. 191 persons replied as 10sec. i.e., 8.6% were feeling laziness in washing hands. Only 39 of them chosen 5sec, i.e.,1.8% purely don’t about the virus effects. The timing needed for washing hands survey is shown in Fig. 5. The survey is analysed by using two axis. The x-axis represents the number of persons participated and the y-axis represents the timing in seconds.

When a person is going any place for their emergency needs. He/she should wash their hands and before enter their house. Everyone should maintain a social distance of 2 m. The other question is “what should be the safe distance maintained to avoid COVID 19?”. Among 2500 participants 2146 were chosen atleast 1 m social distance needed. It is clear that 97% were ready to maintain social distance. But 1.8% of them were selected 0.5 m and 1.3% chosen maintain social distance is not necessary. This proves lack of knowledge about COVID-19 among public. Fig. 6 shows the survey of social distance for safety.

Everyone should cover their face well. Because there is a chance of spreading virus from one person’s saliva to other. And also, virus may spread through sneezing. To prevent from this cotton cloths or mask is used to cover their face. So, if you are going outside, please cover your face and often wash your hands for 20sec. Fig. 7 represents the survey of closing mouth and nose.
The importance of covering face is taken as a survey as, “If you happened to have cough or sneeze, which of the following you should follow?”. Only 1500 persons attended this question. Among 1500 number of participants only 1276 chosen the correct answer as on your elbow. That is 57.7% persons having some knowledge about coronavirus. Remaining 43% people chosen close your mouth with palm and open-air options. Thus if anyone is affected by cough or sneezing, please keep your mouth on your elbow. A survey of prevention from cough and sneeze is shown in Fig. 9. The x-axis represents the number of participants and the y-axis represents the action against of coronavirus.

Initially COVID-19 started in China, later it spreads throughout the world. In India now few of them only affected by coronavirus, because of lockdown maximum were escaped. To avoid catching a new corona virus a question asked is, How should I greet another person by avoid catching new coronavirus?”. Only 1586 persons chosen correct answer as all of these. Remaining 28% of them chosen either by washing hands or by a bow. So as per our government request everyone please stay home. The survey representation is shown in Fig. 10.
If some of them get affected by infectious virus called COVID 19 and are isolated in a hospital. The doctors and nurses were taking care of them. By chance there is a growth in their health, suddenly doctors or nurses may express their happiness by giving hands usually. But for infectious persons it is necessary to avoid hand-shaking. A survey question asked is, “Avoid shake hands with:” Among 2500 number of people 2132 answered correctly, remaining 5% chosen incorrect answers. The survey of shake hands with others is shown in Fig. 11.

Many of the researchers says that if the temperature level is greater than 25 °C then it is easy to expose viruses. Large number of viruses were exposed already. But Coronaviruses were very different, its difficult to expose these kinds of infectious virus. The survey questionnaire is, “Can I prevent the corona virus by exposing myself to sun or a temperature greater than 25 °C?”. Among 1500 people only 63% chosen no option, because if yes means in this summer season it is easy to expose viruses. Remaining 47% of them didn’t have enough knowledge about coronaviruses. The exposing survey is taken in the society and is shown in Fig. 12.

It is clearly understanding that coronaviruses were infectious viruses. Also, for the first 14 days no one can predict the symptoms of virus. So, it is necessary to have hygienic food and maintaining social distances. The survey question enquired is, “who will be affected by coronavirus easily?”. Among 2000 number of people, 73.6% chosen all of them option. But 27% people chosen immune suppressive patients or affected by disease like diabetic, respiratory disease and renal disease. Till now people didn’t have enough knowledge about coronaviruses is clearly proved and the survey taken is shown in Fig. 13.
This survey is taken to analyse the knowledge about coronavirus among public. In a short period, this survey is taken for 2500 number of people. The survey is analysed in gender-wise. The gender-wise analysis is shown in Fig. 14. Only 49% number of males attended and 51% female participated with their own interests. The red colour shows the number of males attended and the blue colour represents the number of females chosen.

The participated people were grouped by their qualification. The grouping includes primary school, secondary school, undergraduate, postgraduate and others. A survey based on qualification is shown in Fig. 15. In these 50.6% were undergraduate, 23.3% were postgraduate, 17.1% were secondary school, 7.4% were others and few of them belongs to primary school.

In India, many of them didn’t have idea about coronaviruses. People living continuing their routine works. Due to increases in the number of coronavirus affected person, Indian government implement the lockdown system. Because of lockdown and restrictions many lives were saved. The survey which we personally conducted for some few people through online. In this survey 76.3% students, 17% employees, 3% home makers (House wife), 2% farmers and 7% others were participated. Many of the students know about coronaviruses and its effects. The surveyed persons occupation is shown in Fig. 16.

In this survey totally 10 questions were asked and for each question 1 point is allotted, totally 10 points. If people answered 10 questions correctly, they scored 10 points. To encourage them those who participated were awarded by certificate with their name. Fig. 18 shows the certificate of appreciation and Fig. 17 shows the representation of points distribution for survey.

In the total points distribution survey, x-axis represents the points scored and y-axis represents the number of respondents. Only 600 of them scored 10 points, 400 and more of them scored
8 & 9 points and few of them scored 0 points. This proves people in India as well as throughout the world didn’t have enough knowledge about COVID-19.

The people who were affected by COVID-19 were isolated and their family members were quarantined for precaution. Because till now no medicine is found for curing coronaviruses. India, USA and many countries stop their visa process and travelling from one country to other. On 26th April 2020, the total number of people affected by coronavirus throughout the world is 2,900,422. More than this 203,055 people died due to coronavirus and 822,760 people get recovered. In India, 26,496 persons confirmed, 5,804 of them recovered and 824 people were died as on 26th April 2020. Totally 31 states affected due to this coronavirus. The states includes Maharashtra (7,628 confirmed & 323 died), Gujarat (3,071 confirmed & 133 died), Delhi (2,625 confirmed & 54 died), Madhya Pradesh (2,096 confirmed & 99 died), Rajasthan (2,083 confirmed & 33 died), Uttar Pradesh (1,843 confirmed & 29 died), Tamil Nadu (1,821 confirmed & 23 died), Andhra Pradesh (1,097 confirmed & 31 died), Telangana (991 confirmed & 26 died), West Bengal (611 confirmed & 18 died), Karnataka (501 confirmed & 18 died), Kerala (458 confirmed & 4 died), Jammu and Kashmir (454 confirmed & 6 died), Punjab (298 confirmed & 17 died), Haryana (289 confirmed & 3 died), Bihar (251 confirmed & 2 died), Odisha (103 confirmed & 1 died), Jharkhand (68 confirmed & 3 died), Uttarakhand (50 confirmed & till now no death), Himachal Pradesh (40 confirmed & 1 death), Chhattisgarh (37 confirmed), Assam (36 confirmed & 1 death), Andaman & Nicobar Islands (33 confirmed), Chandigarh (30 confirmed), Ladakh (20 confirmed), Meghalaya (12

**Fig. 7.** A survey of using mask.

**Fig. 8.** Throwing tissues in a proper way survey.
Fig. 9. A survey of prevention from cough or sneeze.

Fig. 10. A survey of preventing us from virus.

Fig. 11. A survey of shake hands with others.
Fig. 12. A survey of coronavirus exposing possibilities.

Fig. 13. A survey of infectious virus.

Fig. 14. Gender-wise analysis.

Fig. 15. A survey based on qualification.
confirmed & 1 death), Goa (7 confirmed), Puducherry (7 confirmed), Manipur (2 confirmed), Tripura (2 confirmed), Arunachal Pradesh (1 confirmed), Mizoram (1 confirmed) and in Nagaland (1 confirmed) [14].

4. Conclusion

Thus, because of coronavirus people get madly affected without knowing about its infectious and countries growth reduced. World Health Organization suggesting everyone regarding their health and trying to introduce medicine for corona. Indian government exported hydroxychloroquine tablets to USA as a help of recovering patients from Coronavirus. In the survey report, it is clearly understood that students know something about coronaviruses than that of Employees and parents. After analysing the survey, it is clearly proved that people didn’t have enough knowledge about COVID-19.

Fig. 16. A survey of occupation of people who were participated.

Fig. 17. The representation of points distribution for survey.

Fig. 18. Certificate of appreciation for participating the survey provided.
Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

[1] https://www.telegraph.co.uk/news/2020/04/24/pandemic-coronavirus-covid-19-how-started-china/
[2] “Virus Taxonomy: 2018b Release”, International Committee on Taxonomy of Viruses (ICTV), (2019), Archived from the original on 2018-03-04. Retrieved 2020-01-24.
[3] R.J. De Groot, S.C. Baker, R. Baric, L. Enjuanes, A.E. Gorbalenya, K.V. Holmes, S. Perlman, L. Poon, P.J. Rottier, P.C. Woo, J. Ziebuhr, Family Coronaviridae, in: A.M. King, E. Lefkowitz, M.J. Adams, E.B. Carstens (Eds.), International Committee on Taxonomy of Viruses, International Union of Microbiological Societies, Elsevier, Oxford, 2011, pp. 806–828.
[4] https://www.who.int/emergencies/diseases/novel-coronavirus-2019/global-research-on-novel-coronavirus-2019-ncov
[5] Barclay E (2020), “How canceled events and self-quarantines save lives, in one chart”. Vox. Archived from the original on 2020-03-12. Retrieved 2020-03-12.
[6] Tyrrell, David Arthur John, Fielder, Michael, Cold Wars: The Fight Against the Common Cold. Oxford University Press, 2002, ISBN 978-0-19-261283-2.
[7] D. Hamre, J.J. Procknow, A New Virus Isolated from the Human Respiratory Tract., Exp. Biol. Med. 121 (1) (1966) 190–193, https://doi.org/10.3181/00379727-121-30734, ISSN 0037-9727, PMID 4285768.
[8] “Coronavirus Disease 2019 (COVID-19)”, Centers for Disease Control and Prevention, 2020. Archived from the original on 2020-03-04. Retrieved 2020-03-11.
[9] Murray J (2014), “What’s New With Ferret FIP-like Disease?”, Archived from the original on 2014-04-24. Retrieved 2014-04-24.
[10] C. Sang-Hun “MERS Virus’s Path: One Man, Many South Korean Hospitals”, The New York Times, Archived from the original on 2015.
[11] N. Xiang, F. Havers, T. Chen, Y. Song, W. Tu, L. Li, et al., Use of National Pneumonia Surveillance to Describe Influenza A(H7N9) Virus Epidemiology, China, 2004–2013, Emerg. Infect. Dis. 19 (2013) 1784–1790.
[12] D. Chang, H. Xu, A. Rebaza, L. Sharma, C.S. Dela Cruz, Protecting health-care workers from subclinical coronavirus infection, Lancet Respiratory Medicine 8 (3) (2020) e13.
[13] World Health Organization (WHO) DRAFT landscape of COVID-19 candidate vaccines, Geneva (2020).
[14] https://news.google.com/covid19/map?hl=en-IN&gl=IN&ceid=IN:en