



Google Knowledge and Awareness of COVID-19 Among the General Public - A Questionnaire Survey

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ABSTRACT

Background: COVID-19 pandemic is a dreadful pandemic that has spread worldwide. COVID-19 pandemic has affected more than 188 countries and territories across the globe. Coronaviruses are a family of enveloped, single-stranded, positive-strand RNA viruses classified within the nidovirales order. The underlying biological mechanisms and functional constraints that determine the evolution and conservation of the unique activities of the virus remains to be elucidated. Researchers are testing a variety of possible approaches and treatment methodologies for eradicating this novel coronavirus. No antibiotics are effective against the virus. No medication is currently available that can be recommended to treat COVID-19 and is, therefore, no cure available. We all know that Prevention is always better than cure. But in this case, Prevention is the only option left.

Aim: The aim of the current study is to measure the knowledge and awareness of COVID-19 among the people residing in the locality of Chennai and to provide detailed statistical data.

Methodology: A survey had been conducted among 115 people residing in the locality of Chennai. A survey questionnaire had been used to collect data from the people. An online survey platform "Google forms" had been used for this purpose. The questionnaire comprised of 24 questions. The questionnaire had been distributed through digital platforms and the answers were recorded. SPSS Software had been used in the analysis and the results are described in pictorial charts.

Results: The results show that about 82.57% of the study population had complete knowledge and awareness on the symptoms of the COVID-19 infection and the precautionary measures that help in preventing the infection. The results also show that females have higher knowledge and awareness of the ongoing pandemic than males.

Conclusion: From our study, we can conclude that the people of Chennai have got significant knowledge and awareness of the COVID-19 pandemic. Educational Interventional Programs can be conducted to enhance the knowledge and awareness of the people.

Key Words: COVID-19, Knowledge, Awareness, Coronavirus, Virus, Immunity

INTRODUCTION

The great thing that shook the whole world of 2020 is the coronavirus pandemic. COVID-19 pandemic is a dreadful ongoing pandemic that has spread worldwide. The pandemic has terribly affected people residing over more than 188 countries and territories. As of May 2020, more than 4.68 million cases of COVID-19 have been reported resulting in

more than 3,13,000 deaths ¹. Corona viruses are members of enveloped, single-stranded, positive-strand RNA virus family classified within the nidovirales order ². Six coronavirus species are known to cause diseases in humans ³. 229E, OC43, NL63, and HKUI are the four viruses that are prevalent and cause common cold symptoms in immunocompetent people ⁴. There exist two more strains termed as severe acute respiratory syndrome coronavirus (SARS-CoV) and

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the other was Middle East respiratory syndrome coronavirus (MERS-CoV) ⁵. They are zoonotic in origin and have been linked to fatal illness. SARS-CoV was responsible for severe acute respiratory syndrome outbreaks in 2002 and 2003 in Guangdong province, China ⁶. SARS-CoV virus had been first identified in 2002 ⁶. SARS-CoV likely originated in wild bats. Then they were known to spread to palm civets and similar mammals ⁷. The virus then mutated and adapted itself in these animals until it eventually infected humans. SARS had spread to more than 24 countries until health authorities worldwide had managed to contain it ⁶. Between November 2002 to July 2003, there were 8,098 cases worldwide and 774 deaths recorded ⁸. SARS-CoV had been added to the national select agent registry. It regulates the handling and possession of viruses, bacteria, or toxins that have the ability to pose a severe threat to public health and safety ⁷. The SARS outbreak control solely owes to the usage of public-health measures, such as wearing surgical masks, washing hands, maintaining proper self-hygiene, and isolation of infected patients⁸. As history repeats itself, several local health facilities had reported clusters of patients with pneumonia of unknown cause, epidemiologically linked to sea food and wet animal wholesale market in Wuhan, Hubei province, China in late December 2019 ⁹. The virus had been provincially named as COVID-19 by WHO¹⁰. Later, the International Committee on Taxonomy of virus announced “Severe acute respiratory syndrome coronavirus-2” (SARS-CoV-2) as the name of the novel coronavirus on 11 February 2020¹¹. Phylogenetic analysis of the novel coronavirus indicated that it is different (- 80% nucleotide identity) but related to SARS-CoV virus ¹². The viral infection had been estimated to have a mean incubation period of about 6.4 days and a basic reproduction number of 2.24-3.58 ¹³. The common symptoms of the virus are fever, cough, fatigue, and shortness of breath ¹⁴. The symptoms may develop into more complicated pneumonia and acute respiratory distress syndrome ¹⁵. Bilateral lung involvement with ground-glass opacity was the most common finding from computed tomography images of the chest¹⁶. The extraordinary size of the coronavirus replicase (poly) proteins, their generally large phylogenetic distance from those of other RNA viruses, and the presence of several predicted RNA processing activities that are not found in other positive-strand RNA viruses indicate that coronavirus replicas are of an unparalleled complexity ¹⁷. The precise strategy used by the virus for genome replication is not yet known ¹⁸. The underlying biological mechanisms and functional constraints that determine the evolution and conservation of these unique activities remain to be elucidated ¹⁹. On that note, researchers are testing a variety of possible approaches and treatment methodologies for eradicating this novel coronavirus. No antibiotics are effective against the virus. No medication is currently available that can be recommended to treat COVID-19 and is, therefore, no cure available ²⁰. We all know that prevention is always better

than cure. But in this case, prevention is the only option left. Authorities worldwide have responded by implementing travel restrictions, lockdowns, workplace hazard controls, and facility closures ²¹. Recommended preventive measures include hand washing, covering one’s mouth while sneezing and coughing, maintaining social distance, wearing gloves and face masks in public settings, monitoring, and self isolation of infected people ²². Speaking about the terms, knowledge, and awareness, they may sound similar but they are not. Knowledge is a remembrance of facts, information and skills acquired through experience or education ²³. Awareness is perceiving, knowing, feeling, or being conscious of events, objects, thoughts, emotions, or sensory patterns ²⁴. In simple words, knowledge is the fact and awareness is the perception of the knowledge and usage of that knowledge in practical life ²⁵. The knowledge and awareness of COVID-19 play a very crucial role in restricting the spread of the infection. As the previous similar outbreaks of 2003 were controlled mainly by preventive measures, as we said earlier. A survey had been conducted among 115 people residing in the locality of Chennai. ²⁶. It is quickly becoming the number one tool that market researchers use to gather data ²⁷. It is the most convenient form of collecting data ²⁸. It is cost-effective ²⁹. It provides high representativeness ³⁰. It has also got good statistical significance ³¹. But it has also got some disadvantages ³². The interpretation and analysis issues can be time-consuming for the respondents ^{33,34}. So, the current study aims to measure the knowledge and awareness of COVID-19 among the people residing in the locality of Chennai and to provide detailed statistical data.

MATERIALS AND METHOD

A survey had been conducted among 115 people residing in the locality of Chennai. A survey questionnaire had been used to collect data from the people. Google forms software had been used for this purpose. The Questionnaire link has been enclosed here https://docs.google.com/forms/d/e/1FAIpQLScL8rXbqN0_XhMWCTZ7Sny9i0p-SrDGcrynjTyBxmQDWvm1yaA/viewform?usp=sf_link. The questionnaire comprised 24 questions. The questionnaire had been distributed through digital platforms and the answers were recorded. The ethical clearance was obtained from Institutional Review Board, the IEC letter no: SRB/SDC/BDS/002/04.

STATISTICAL ANALYSIS

SPSS software had been used in analysis and the results are described in pictorial graphs.

QUESTIONNAIRE

1. Name
2. Age
3. Gender
Male
Female
4. Do you know that COVID-19 disease is a pandemic?
(Pandemic - disease spreading world wide)
Yes
No
May be
5. Do you think that the number of COVID-19 cases is increasing day by day?
Yes
No
Maybe
6. What are the major symptoms of COVID-19?
Fever
Cough and sore throat
Trouble breathing
All the above
7. Do you think that maintaining a safe distance from anyone who is sneezing or coughing is healthy?
Yes
No
Maybe
8. Do you wear gloves while going out?
Yes
No
Maybe
9. Who has to wear a mask?
Sick people
People related to the sick
Health care workers
General public
All
10. Do you wear masks while going out?
Yes
No
Maybe
11. Do you maintain social distance while shopping?
Yes
No
Maybe
12. Do you dispose your gloves and masks after coming home?
Yes
No
Maybe
13. Do you take shower after returning home?
Yes
No
Maybe
14. Do you use sanitizers or hand washes frequently?
Yes
No
15. Going out frequently is not good in this pandemic condition. Do you agree?
Yes
No
Maybe
16. Touching your eyes, nose and mouth often is not good for health. Do you agree?
Yes
No
Maybe
17. Who are more sensitive to this COVID-19 disease?
Children
Pregnant women
Senior citizens
All the above
18. Taking food rich in proteins and vitamins build up the Immunity. Do you agree?
Yes
No
Maybe
19. Do you rinse the fruits and vegetables at least three times before taking them into your house?
Yes
No
Maybe
20. Do you keep the pantry products in the sunlight for at least 2 hours before taking them into your house?
Yes
No
Maybe
21. Do you cover your nose or mouth with your bent elbow or a tissue when you cough or sneeze?
Yes
No
Maybe
22. Maintaing Social distance, Washing hands frequently and Following lockdown is good for health. Do you agree?
Yes
No
May be
23. What is the best way out COVID-19?
Panic
Follow every information that you find on social media
Follow lockdown and authentic information put forth by the Government
24. Have you got Arokhya setu app installed in your devices?
Yes
No
Maybe

RESULTS AND DISCUSSION

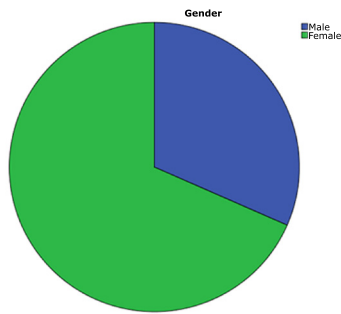


Figure 1: The pie chart represents the gender of the study population. The chart shows that 31.3% of the study population is male [Blue] and 68.7% are female [Green].

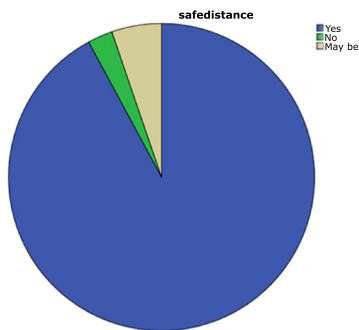


Figure 2: The pie chart represents the percentage of the study population who maintain a safe distance from people who sneeze or cough. 92.2% of people have answered that they maintain the same [Blue]. 2.6% of people answered that they don't maintain a proper safe distance [Green] while 5.2% of people were not sure [Grey].

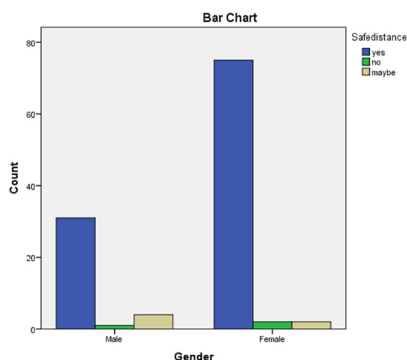


Figure 3: Bar chart representing the association between gender and awareness on maintaining a safe distance from people who sneeze or cough. X-axis represents the gender of the respondents and Y-axis represents the number of responses on the awareness of maintaining a safe distance. From the graph, it is evident that females have higher awareness than males. However the association between the gender and awareness on maintaining a safe distance was not significant (Chi-square test, P-value = 0.157, $p < 0.05$, statistically not significant).

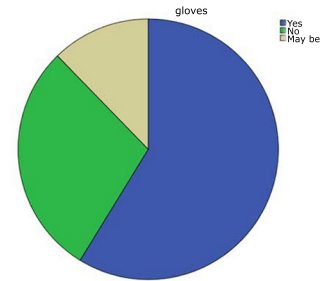


Figure 4: The pie chart represents the awareness of wearing gloves. Only 59.1% of the people have stated that they wear gloves [Blue]. 28.7% answered that they don't wear gloves [Green] while 12.2% were not sure [Grey].

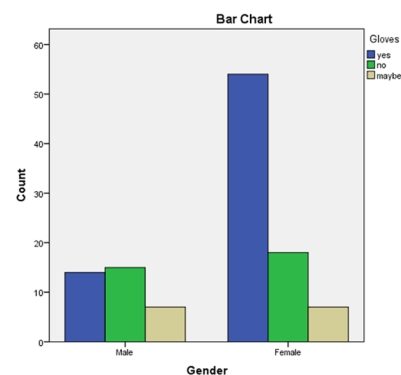


Figure 5: Shows Bar chart representing the association between gender and awareness on wearing gloves. X-axis represents the gender of the respondents and Y-axis represents the awareness of wearing gloves. From the graph, it is evident that females have higher awareness than males. Association between the gender and awareness of wearing gloves was done using the Chi-square test (p-value = 0.011) and was found to be statistically significant.

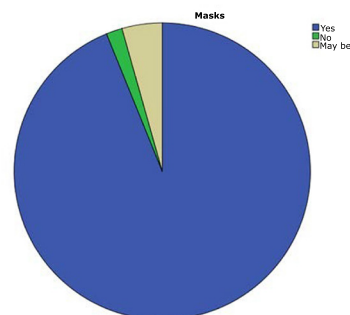


Figure 6: The pie chart represents the awareness of people on wearing face masks. The majority of the people, about 93.9% of them wear face masks [Blue] while 1.7% of people have stated that they don't wear face masks [Green] while 4.3% of people were not sure [Grey].

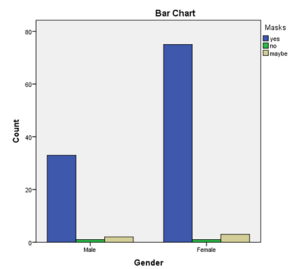


Figure 7: Shows Bar chart representing the association between gender and awareness of wearing masks. X-axis represents the gender of the respondents and Y-axis represents the awareness of wearing masks. The Graph shows that females have higher awareness than males. Association between the gender and awareness of wearing masks was done using the Chi-square test (p -value = 0.768) and was found to be statistically insignificant.

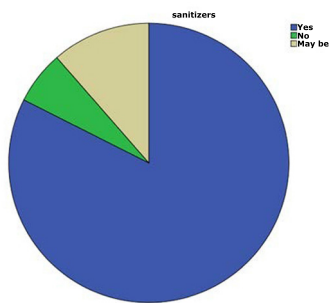


Figure 8: The pie chart represents the percentage of people who use hand washes and sanitizers frequently. About 82.6% of people use hand washes and sanitizers frequently [Blue]. While 6.1% don't use them frequently [Green]. 11.3% of people were not sure [Grey].

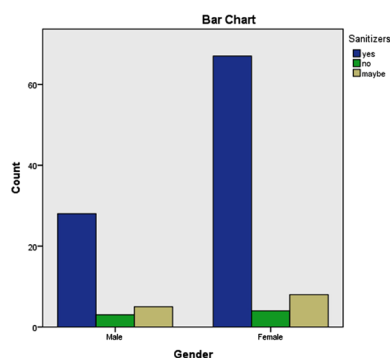


Figure 9: Shows Bar chart representing the association between gender and awareness of frequent usage of hand washes and sanitizers. X-axis represents the gender of the respondents and Y-axis represents the awareness of frequent usage of hand washes and sanitizers. The Graph depicts that females have higher awareness than males. Association between the gender and awareness on frequent usage of hand washes and sanitizers was done using the Chi-square test (p -value = 0.640) and was found to be statistically insignificant.

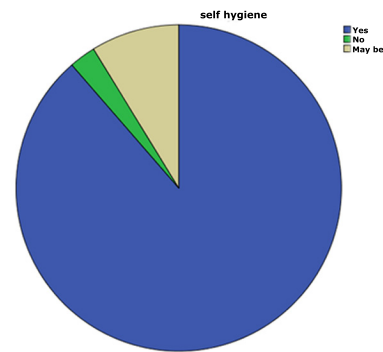


Figure 10: The pie chart represents awareness of self-hygiene. 88.7% of the people knew that touching one's eyes, nose and mouth frequently is not good for health [Blue]. While 2.6% didn't know the same [Green]. 8.7% of the people were not sure [Grey].

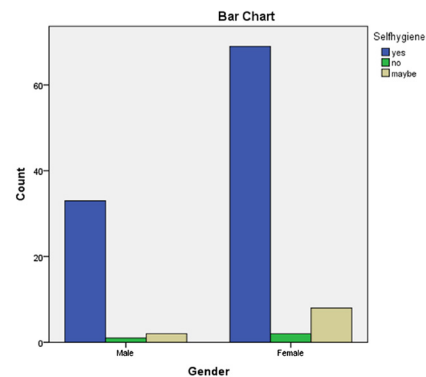


Figure 11: Shows Bar chart representing the association between gender and awareness of maintaining self-hygiene. X-axis represents the gender of the respondents and Y-axis represents the awareness on maintaining self hygiene. From the graph, it is evident that females have higher awareness than males. Association between the gender and awareness on maintaining self-hygiene was done using the Chi-square test (p -value = 0.722) and was found to be statistically insignificant.

The study population comprises 115 people residing in the locality of Chennai. Of the 115 people, 68.7% are females and 31.3% are males [Figure 1]. The survey was open to people of the age group of 7 - 70 years. 94.8% of the people have stated that they knew COVID-19 was a dreadful pandemic. Whereas 5.2% of the people have stated that they hear the term pandemic for the first time. This confirms that the majority of the people had awareness about a Pandemic crisis and knew that COVID-19 is a pandemic. The majority of the people *i.e.* 89.6% of the survey population felt that the number of COVID-19 cases is increasing day by day while 10.4% did not. Then when they were asked about the major symptoms of COVID-19, 82.6% of the re-

spondents answered correctly. They knew that fever, cough, sore throat, and trouble breathing were the symptoms of COVID-19. A high percentage of people, 92.2% have stated that they maintain a safe distance from people who sneeze or cough [Figure 2]. [Figure 3] shows the correlation between the gender of the study population and people's awareness of maintaining a safe distance. From the graph, it is evident that females had more awareness than males on the maintenance of safe distance. The p-value is found to be 0.157 which is greater than 0.05 and so is statistically insignificant. When the people were asked about wearing gloves while going out, it was found that only 59.1% of the people wear gloves while going out [Figure 4]. Though there is a majority, the margin of difference is very low here. [Figure 5] shows the correlation between gender and people's awareness of wearing gloves. The graph shows that females had more awareness than males on wearing gloves. The p-value is found to be 0.011 and is statistically significant. But a significantly higher population, 93.9% wear face masks while going out [Figure 6]. From this, we can infer that people know the importance of wearing masks and more awareness should be done on the importance of wearing gloves [Figure 7] shows the correlation between gender and people's awareness on wearing gloves. The p-value is found to be 0.768 and is statistically insignificant. 80.9 % of the people dispose of their used masks and gloves safely. The majority of the people, 82.6%, have stated that they use hand washes and sanitizers frequently [Figure 8]. [Figure 9] represents the association between the gender of the study population and awareness on frequent usage of hand washes and sanitizers. The p-value is found to be 0.640 and is found to be statistically insignificant. 91.3% of the people have stated that they knew that going out frequently was not good for their health. 88.7% of the people knew that touching one's eyes, nose, and mouth often was not good for health [Figure 10]. [Figure 11] depicts the association between gender and awareness of maintaining self-hygiene. The p-value being greater than 0.05 so is not statistically significant. When the people were asked about the people who are more susceptible to the disease, 72% of the people answered correctly. 78.3% of the people have stated that they rinse the fruits and vegetables that they buy at least three times before taking them into their homes. The majority of the people keep their pantry products in the sunlight for about 3 hours before using them. 89.6% of the people were aware that taking food rich in proteins and vitamins build up their immunity. 89.6% of people follow self-hygiene rules regularly. The majority of the people *i.e.* 85.2% of people follow the authentic information put forth by the government while 15.7%, quite a high percentage of people rely upon social media for the information. They are intimidated to follow every information that is put forth on social media. Only 48.7% of the people have got the health

advisory Arogya Setu App on their devices while 51.3% of the people haven't even heard about the app. Knowledge and Awareness of COVID-19 become really very important in preventing the spread of the Pandemic. People should maintain at least 6 feet distance from one another in public settings. Always masks and gloves should be worn in public settings. Frequent touching of eyes, nose, and mouth should be avoided. Frequent hand washing techniques should be followed even when the hands don't look visibly dirty. If using soap, hands should be washed for about at least 40 to 60 seconds. Alcohol-based sanitizers can be used wherever feasible at least for 20 seconds. Respiratory etiquette should be followed and spitting in a public setting is strictly prohibited. Pregnant women and patients with co-morbidities should be given extra care. A similar study was conducted by Roy et al, and it was found that the majority of the people had awareness of COVID-19 pandemic and the precautionary measures taken to prevent it ³⁶. A study conducted in Mumbai reports 71.2% correct answers from the respondents ³⁶. A study was conducted among dentists in Jordan which reports that the dentists had awareness of the symptoms, mode of transmission, and infection control of the novel coronavirus but the study reports that some lack extra precautionary measures to protect themselves and their patients from the infection ³⁷. A study by Srikanth et al., states that there is an urgent need for educational interventions to improve the knowledge and perception of COVID-19 among the people³⁸. The study has got some limitations. The study cannot be generalized as the survey population includes only 115 people residing in the locality of Chennai. Secondly, the survey is limited to people who had smartphones or electronic gadgets and had the ability to understand English.

CONCLUSION

Within the limitations of the study, the following conclusion can be drawn that the majority of the people residing in the locality of Chennai have good knowledge and awareness of the COVID-19 pandemic.

Author contributions

Author 1 (Anu Iswarya Jaisankar), carried out the study by collecting the data and drafted the manuscript after performing the necessary statistical analysis. Author 2 (Dr. L. Keerthi Sasanka) aided in conception of the topic, has participated in the study design, statistical analysis and supervised in preparation of the manuscript. Author 3 and 4 (Dr. Venkatesh Kommi, Dr. D. Ezhilarasan) has participated in the study design and has coordinated in developing the manuscript. All the authors have discussed the results among themselves and contributed to the final manuscript.

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Conflict of interest

None declared.

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