

Research Article**A Comprehensive Survey Report Regarding Public Perception on COVID-19****Aritra Saha, Sejuti Ray Chowdhury, Aditya Prasanna Mukherjee, Tiyas Saha, Monosiz Rahaman, Debasmitta Dutta Roy, Arijit Das, Suraj Kumar Shah, Sourav De****Department of Pharmaceutical Technology, School of Medical Sciences, Adamas University, Kolkata-700126 India*

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Abstract

COVID-19 is one of the novel diseases of recent era. This virus affects the mankind almost in every aspect. The aim of this study is to understand the rudimentary idea of Corona Virus among people, to figure out the public awareness, to uncover misconception & myths about COVID-19. A total of **123** responses from two different regions of North 24 Paraganas, West-Bengal were received. Between two regions, 'Region A' belongs to Habra and 'Region B' belongs to Dumdum, respectively. Most of the respondents have adequate cognizance for COVID-19 outbreak and its preventive measures, have basic idea of about the virus. The people have the proper knowledge about the symptoms. They understand the need of preventive measures. They also know about do's & don't if someone having symptoms of COVID-19. Though there were some misconceptions about vaccination program. People used antibiotics excessively. Majority of the respondents were fully vaccinated. People were aware about the facilities of their respective healthcare departments. They gave honest reviews regarding the healthcare facilities in their locality. Additionally, they point out the pros and cons of the facilities. They used to follow trusted source of information from the government official websites, media, etc. Despite having sufficient understanding about the COVID-19, they lacked some essential knowledge like improper use of antibiotic, actual cause of the infection, etc. This survey will help the community to understand public perception regarding the spread and control of COVID-19. It also allows us to formulate strategies to suppress/eliminate this dreaded disease.

Keywords: COVID-19, perception, vaccination, knowledge, awareness

Introduction

COVID-19 has become a crucial cause of concern for people of worldwide. Corona virus disease (COVID-19) was proclaimed as “pandemic” by the World Health Organization (WHO). It is caused by the Severe Acute Respiratory Syndrome Corona Virus (SARS-CoV-2) (Feng et al., 2020). These viruses are spherical in shape. On the surface of these virus, we can find crown like structure known as spike proteins. After infection, these spike protein hasp on the human cells. Subsequently, it undergoes structural alterations which allows the virus envelope to amalgamate with the cell membrane. The viral genes can then invade the host cell for replication, and can generating more viruses in human body (Mahmood et al., 2020).

In some cases, a number of this Viruses are known to cause respiratory infections ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and severe acute respiratory syndrome (SARS) (Larsen et al., 2020). Precautionary measures are being acquainted to prevent spread the outbreak (Jaber et al., 2021). This dangerous disease spreads through person-to-person contact, and the public health threat is extremely high. The symptoms of COVID-19 include fever, loss of taste & smell, dyspnea, cough & cold, weakness, fatigue, headache and diarrhea etc. These symptoms observed after the incubation period, which ranges from 0 to 24 days (Guan et al., 2019) There are different vaccines (Covaxin, Covishield, Sputnik V, etc.) & Medicine (like Remdesivir, Dexamethasone, Molnupiravir, Doxycycline and Sarilumab etc.) showing some therapeutic activity against the virus, but still there no consistent effective treatment. Despite of taking precautionary measures and several lockdowns the death tolls and active cases are still on the rise. And also, economical advancements in India have slowed down severely (Sahoo, 2020). The main purpose of this article is to

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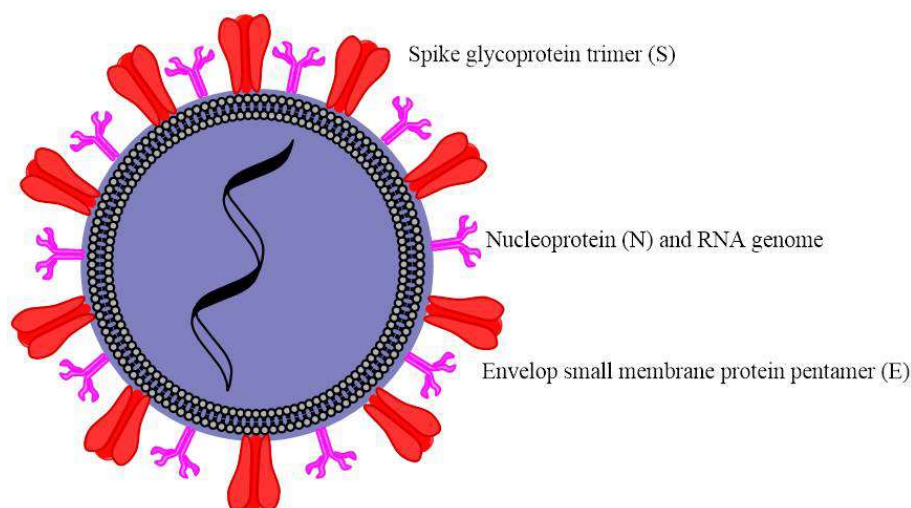


Figure. 1 Structure of SAR-COV 2 Virus

point out various key factors regarding public perception about COVID-19; the study is carried out among several candidates in North 24 Parganas, a major district of West Bengal, India. This study conjectures public perception and knowledge towards this deadly disease regardless of scientific approach, misconceptions, fallacies and others (Geldsetzer, 2020 and Narayana, 2020).

This study was aimed to analyze the level of awareness, knowledge and perspective to fight against COVID-19 among the common people and other residents of the North 24 Parganas region of West-Bengal. As the COVID-19 pandemic outbreak placing overwhelming impact on health. There are various objectives of this rapid survey, those are following-

- This rapid survey was created to assess the perception, knowledge & practice towards COVID-19.
- To uncover the misconception & myth of people regarding COVID-19.
- To analysis of service of healthcare professionals in treatment

& patient counselling during the pandemic.

- To improve the different sectors of healthcare department as per requirements.
- Evaluate the therapeutic knowledge of people regarding treatment of Corona virus.
- To analyse the wrong beliefs & misunderstanding regarding the vaccination program of COVID-19.
- Increase people awareness & preparedness to fight against the novel disease.
- Utilize the survey to modify the future strategies to fight against COVID-19.

Material and methods

This prevalence study utilized a self-made, online questionnaire which was distributed through social media outlets (e.g., Gmail, Outlook, LinkedIn, Facebook and WhatsApp) across North 24 Parganas, West Bengal, India between 19th November 2021 and 30th November 2021. The

Table 1. Questionnaires included in the survey form

Sl. No	Questionnaires
1	Name of the Patient.
2	Which age group do you fall under?
3	What is your gender?
4	Area of residence.
5	Have you heard of the Corona virus (COVID-19) outbreak?
6	Approximately when did you first hear about the COVID-19 outbreak?
7	What is your main source of information regarding COVID-19?
8	Do you think your country's Health Department is doing enough to prevent outbreak from spreading and to cure those are infected?
9	Which of the following strategies you think are effective against Covid-19?
10	Can COVID-19 be cured with antibiotics?
11	Rate your area's Health Department in the following aspects: Health & Hygiene, Travel limitations, Screening and tests to detect the virus, Availability of health care, Quality of Treatment.
12	Do you think vaccination is the ultimate solution of Covid-19?
13	If you developed symptoms of covid-19, what will you do?
14	Are you vaccinated?
15	If you are affected with covid-19, do you know that after recovery in how many days you can take the vaccine?
16	Do you think Covid-19 is affecting our mental health /social life?

questionnaire was created, designed and circulated using the digital platform. Participants were encouraged to fill up the form.

Candidates are requested for sharing the questionnaire with their family members, friends and relatives. Importantly, participants were restricted to one response only to avoid fake or overestimate data. Participants residing outside the particular zone, and submitted incomplete questionnaires were excluded. In the light of the current situation for self-isolation and home quarantine, online surveys are the most appropriate method for data collection. The set of questionnaires are presented following below-

Survey Report and Discussion

After receiving 123 responses from two surveyed regions, between two regions, 'Region A' represents Habra and 'Region B' represents Dumdum respectively. The responses are analyzed and represented in various graphical forms. We enlighten our key findings of this study through statistical data & graphs.

Demography of Respondents According to Age

As COVID-19 is a communicable disease, we kept the age range wide as we tried to collect different opinion from various age groups from ranging youngsters to older persons.

In Region A, among the respondents 7.5% are under age group of 17 years, 52.8% belongs to 18-35 years, 20.8% are under age group of 36-55 years, 13.2% are under age range of 56-75 years and 5.7% of the respondents are in age group 75 years & above.

In case of Region B, it is easily understandable that among total participants, 95.7% of them are under the age group of 18-30 years. And rest of them are categorized under the age group of 31-50 years. (2.9%) and the age group of 51-60 years (1.4%), respectively.

Demography of Respondents According to Gender

According to findings in Region A, 60.4% are male and 39.6% are female of the total respondents.

In Region B, there are 65.7% male candidates and 34.3% are female candidates in the surveyed population.

Feedback of Respondent on Basic idea of COVID-19

As per our motto, was to identify the knowledge of people about this disease. The primary thing is to know "what is COVID-19", means who is responsible for causing the disease.

As per our findings, in Region A, majority of participants (84.91%) thinks that COVID-19 is caused by the virus SARS-COV-2. But 13.21% and 1.89% of surveyed population thinks that COVID-19 is a spiritual curse / act of God and COVID-19 is caused by fungal infection respectively.

In case of Region B, majority of participants (91.43%) thinks that COVID-19 is caused by the virus (SARS-COV-2). But 7.14% and 1.43% of surveyed population thinks that COVID-19 is caused by E. Coli bacterial infection and COVID-19 is caused by fungal infection. respectively.

Public Opinion About the Source of Information Regarding COVID-19

The outbreak of Corona Virus has been accompanied by a huge amount of fake news & false information which may misleading to people.

Table 2. Compiled Results of public views about the causes of COVID-19 of both surveyed regions

What is COVID-19	Response of Region A	Response of Region B
COVID-19 is caused by the virus SARS-COV-2.	84.91 %	91.43 %
COVID-19 is caused by E. Coli bacterial infection.	0 %	7.14 %
COVID-19 is caused by fungal infection.	1.89 %	1.43 %
COVID-19 is a spiritual curse / act of God.	13.21 %	0 %

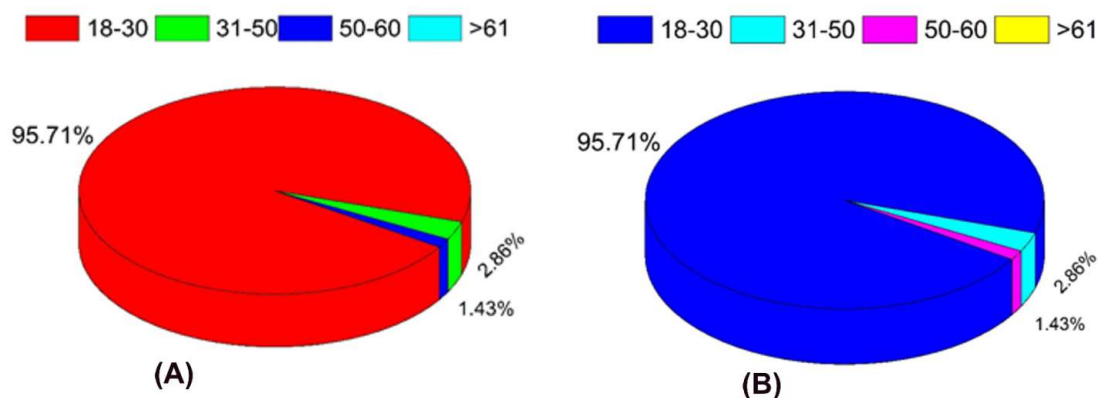


Figure 2. Demography of various age groups in Region A and Region B

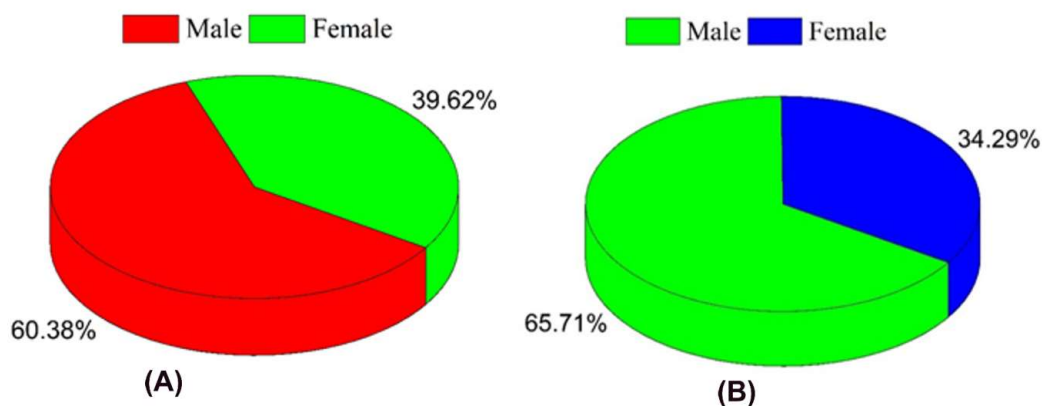


Figure 3. Demography of gender of participants in Region A and Region B

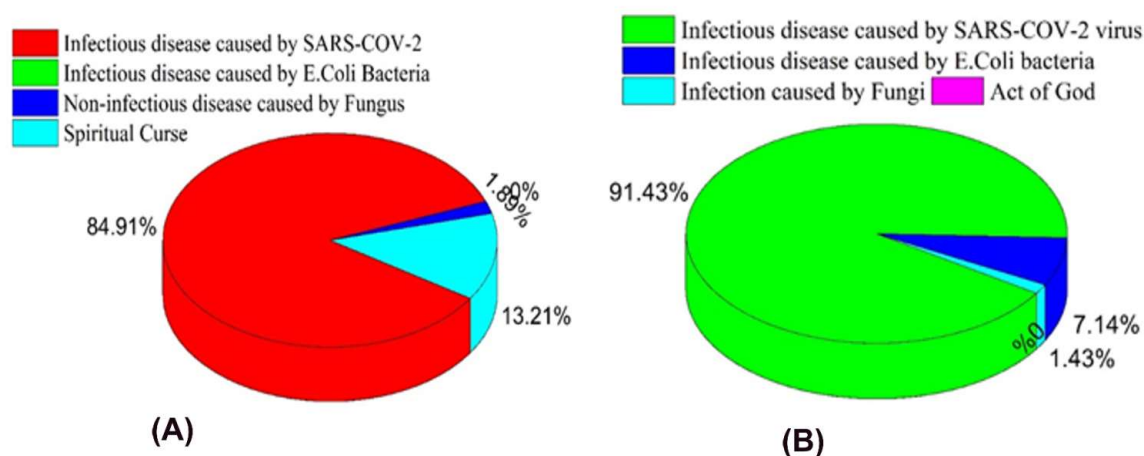


Figure 4. Public views about the cause of COVID -19 in Region A and Region B

In Region A, 39.6% of people got the information regarding COVID-19 from newspaper & Television News. 17% people use social media as source of information. 15.1% people prefers Government official websites & get news from Healthcare Professionals directly. 13.2% of respondents take the information from friends & family members.

In Region B, the majority of them (81.4%) opted that they get information from newspaper and television broadcast. Others, about 11.4% of them keep on eye in government official websites, and 7.1% of total candidates get information through friends and family.

Public Perception Regarding the Common Symptoms of COVID-19

Majority of participant of Region A, pointed out that, Fever & shortness of breath (96.2%), cough & cold (94.3%) are the main symptoms. Almost 56.6% of people marked sore throat as a primary symptom, 39.6% reported redness in Eye & 17% of people marked nausea-vomiting as symptoms of COVID-19. In addition, 1.9% of respondent included weakness as a symptom.

Also in the Region B, participants chose the well-known and most common symptoms, such as fever (90%), shortness of breath (84.3%), cough (82.9%) and cold (68.6%). Some of them opted for some other symptoms like sore throat (61.4%), redness of eye (30%), diarrhea (27.1%) and stomach pain (15.7%).

Public Knowledge on Preventive Measures of COVID-19

Precautionary measure plays a very vital role to prevent the spread of the Corona virus. So, we give both right and wrong option randomly to find out the actual idea of people. Majority of people know about the guidelines provided by WHO and the Government of India.

In Region A, almost 96.2% of Participants point Out Washing Hands with Soap/Using Sanitizers & 94.3% People marked Wearing Mask as major tools of precaution. 67.9% of people showed Maintaining Physical Distance & 60.4% of people. Avoid Touching uncovered parts of the body as a defence key against COVID-19. As good

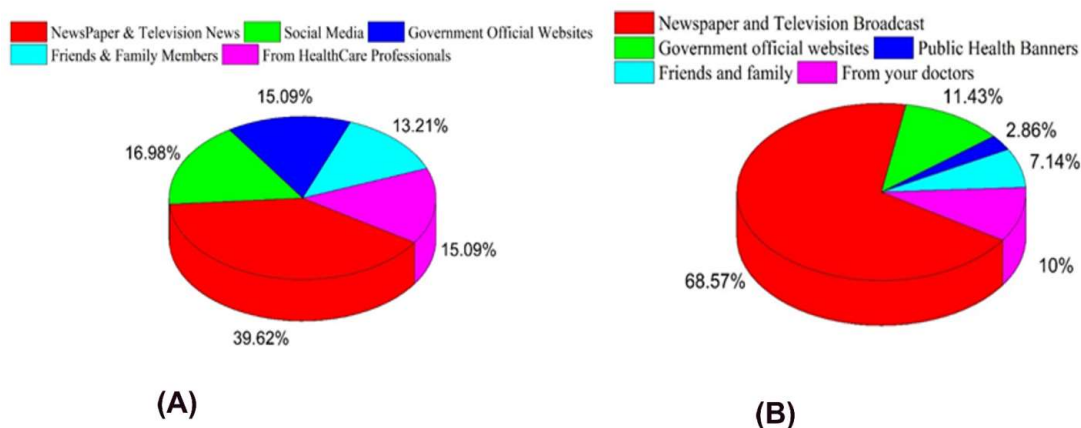


Figure 5. Demography of source of information regarding COVID-19 of Region A and Region B

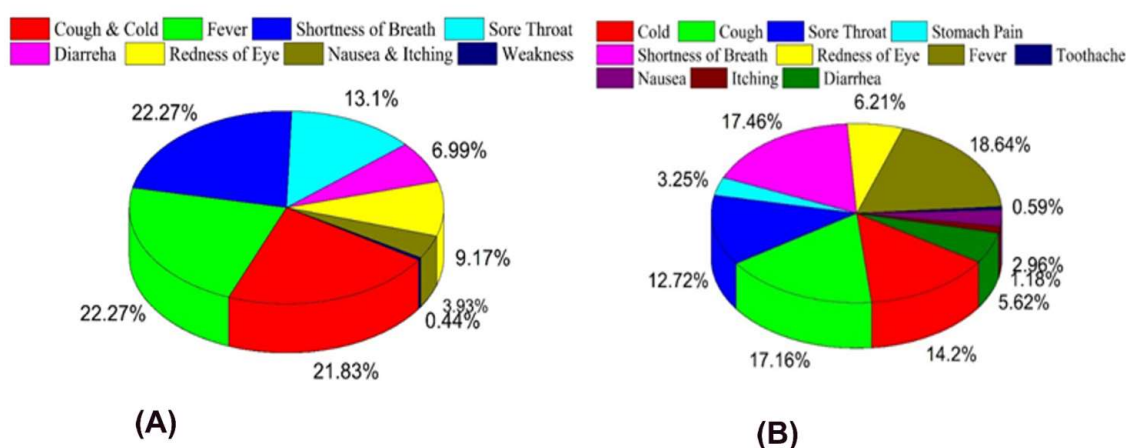


Figure 6. Public Perception Regarding the Common Symptoms of COVID-19 in Region A and Region B

immunity status helps to fight against the virus, 39.6% among the respondents think Eating Nutritious Food can be helpful weapon against the COVID-19.

In case of Region B, Majority (94.3%) of total candidates opted for using mask. Also, Other strategies like washing hand (80%), using sanitizer (81.4%), avoiding crowded place (81.4%) are also considered effective by the candidates under the survey. Our study showed that all the participants were aware of avoiding mass gathering.

Public Reaction Regarding Vaccination is the Ultimate Solution of COVID-19

Vaccination is the key to stop COVID-19, but after surveying the population of two regions, it is clear that there are some misconceptions regarding the purpose of the vaccination.

According to our study, 81.1% of respondents of Region A think that Vaccine is the ultimate solution of COVID-19. 15.1% of people not sure about the effectiveness of vaccine & 3.8% of participant not agree about the importance of vaccination, but majority of people aware about the need of vaccination.

In case of Region B, the survey shows that 37.1% of total participants are still in dilemma whether the vaccination is the ultimate solution of COVID-19. 32.9% of them give positive feedback and 30% of total participants share negative thoughts regarding vaccination program.

Demography Of Fully Vaccinated and Partially Vaccinated Population

After surveying the population of two regions, we found that In Region A, 67.9% of people were fully vaccinated and 24.5% of the people were partially vaccinated and 7.5 % of people were yet to receive the vaccination.

In Region B, among total participants 91.4% of them are fully vaccinated and others 8.6% are partially vaccinated.

Public Knowledge About Cure of COVID-19 With Antibiotics

As COVID-19 caused by virus (SARS-COV-2), Antibiotic cannot cure it. We need antiviral drug for that. But antibiotics can reduce the severity of symptoms. So, there is some misconception about the use of antibiotics.

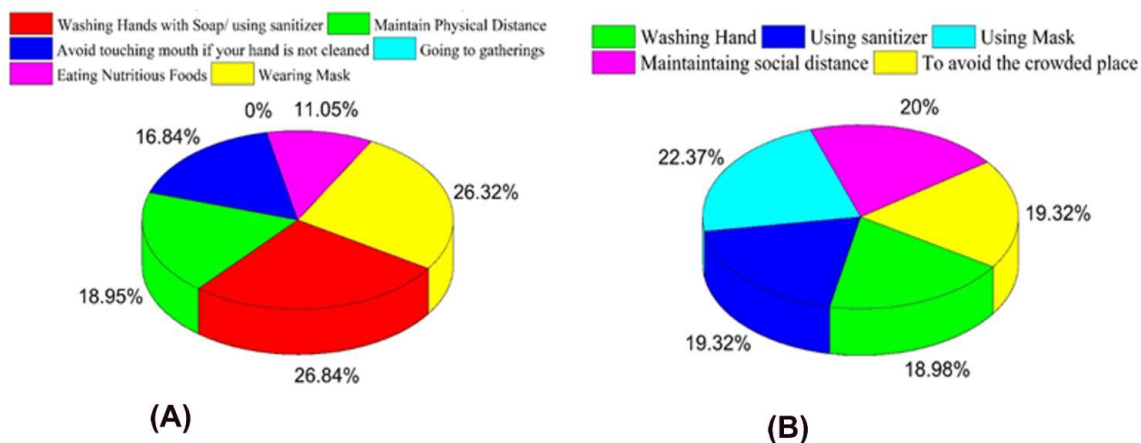


Figure 7. Public Knowledge on Preventive Measures of COVID-19 in Region A and Region B

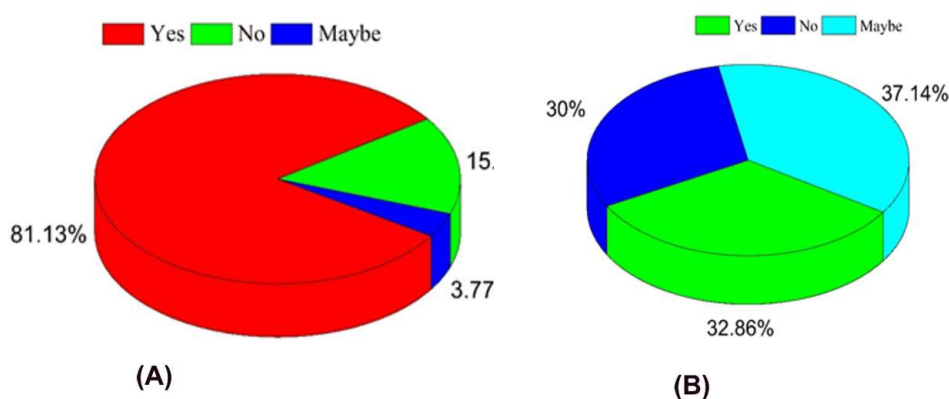


Figure 8. Public reaction regarding vaccination is the ultimate solution of covid-19 in Region A and Region B

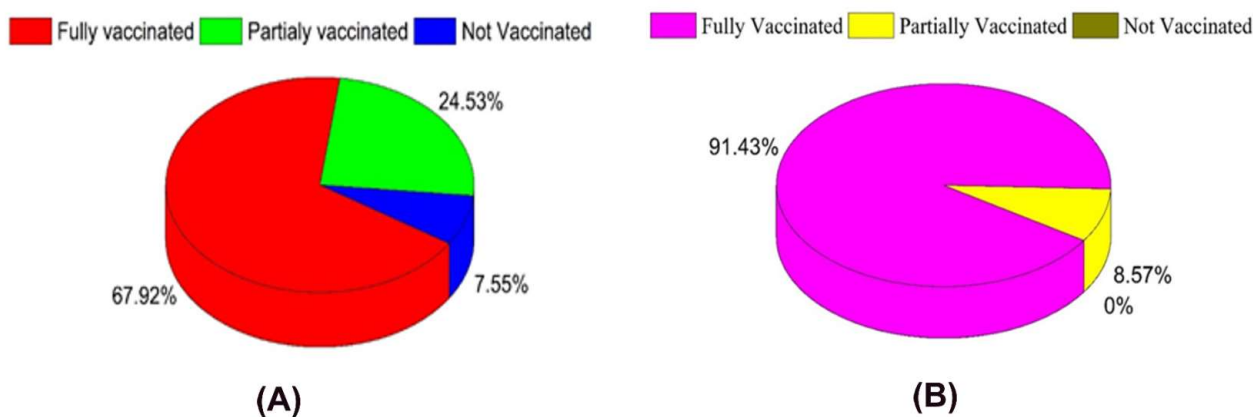


Figure 9. Demography of Fully and partially vaccinated population in Region A and Region B

In Region A, majority of people (49.1%) think that the antibiotic can cure COVID-19 & 30.2% of people not sure about it. Only 20.8% of respondents has proper idea about the use of antibiotics in COVID-19.

In case of region B, it can be seen that only the 28.6% of surveyed population positively opted for the use of the antibiotics to cure COVID-19. On the other hand, 24.3% didn't agree with this. And the majority (47.1%) are still in dilemma that the antibiotics can treat the COVID-19 or not.

Public Perception About Affecting Mental Health Due to COVID-19

As COVID-19 is totally a novel disease and it impacts on every aspect of our lives. It also affected the lifestyle and the mental health of people includes anxiety, depression, insomnia, palpitation, stress, mood swings etc.

As per our findings in Region A, 75.47% of total respondents faced the mental health issues due to COVID-19. 5.66% of surveyed population are not sure about this.

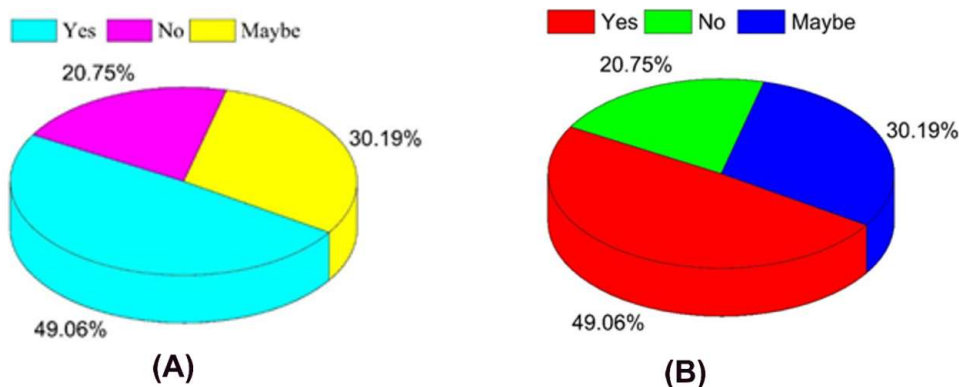


Figure 10. Public knowledge about cure of COVID-19 with antibiotics in Region A and Region B

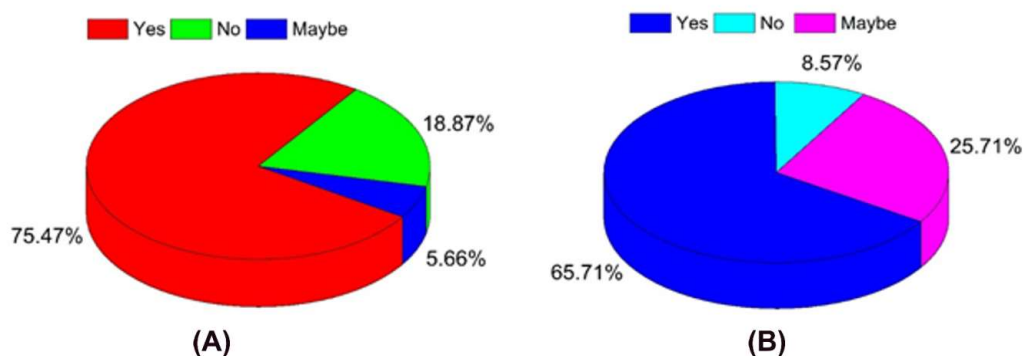


Figure 11. Public perception about affecting mental health due to COVID-19 in Region A and Region B

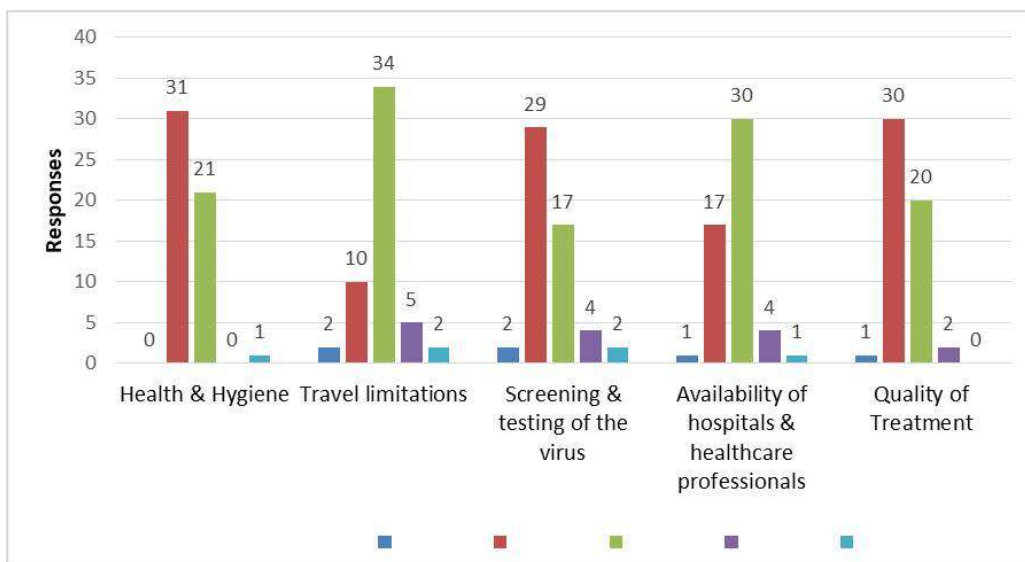


Figure 12. People's feedback of consecutive health department in Region A

and also 18.87% of participants ensured that they did not face any mental health issues due to COVID-19.

In case of Region B, most of participants shared their opinion about facing mental health issue especially due to the COVID-19 and the lockdowns they faced. Up to 65.7% of total participants admitted that at some point they faced something directly connected to mental health issue. 25.7% of total participants are

not sure about-facing mental health issues in COVID-19. Also 8.6% of surveyed population did not face any kind of mental health issues due to COVID-19.

People's Feedback of Consecutive Health Department

COVID-19 has created multiple challenges for healthcare departments. It also extremely difficult for frontline healthcare professionals like doctors, nurse, and pharmacists

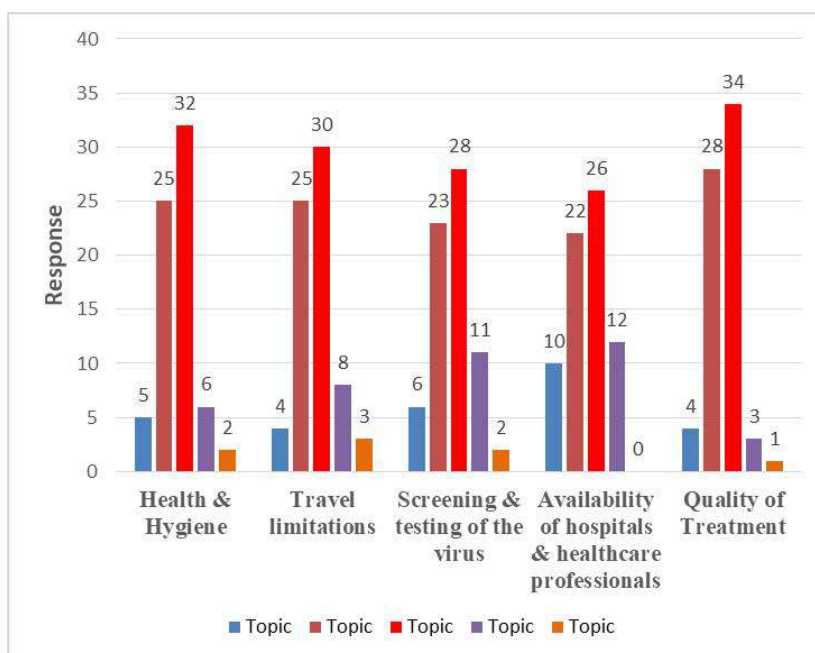


Figure 13. People's feedback of consecutive health department in Region B

to provide service round the clock during this pandemic. Our objective is to know whether people are satisfied by the services of healthcare departments in their area. So, we asked them to rate the healthcare departments on five factors which includes - Health & Hygiene, Travel Limitations, Screening & Tests to Detect the virus, Availability of Hospitals & Healthcare Professionals, Quality of Treatment.

After surveying the population of Region, A, it is found that the majority of people put satisfactory and good remarks to their healthcare departments in terms of Health & Hygiene. Then in case of “screening & testing to detect the virus” which is important parameter to diagnose the disease, majority of respondents give good and satisfactory review. But also, some of them put poor and terrible remark. As the surveyed region is highly populated, the “availability of hospitals & healthcare professionals” is not enough somewhere. So according to that very few put up excellent and majority rated for good & satisfactory remarks. The surveyed population rated the healthcare department in terms of “quality of treatment”, as per our findings very few put up excellent remarks & majority opted for good remark; they are very satisfied with the service of health departments. But some people showed disappointing expressions about the quality of treatment.

In Region B, after assessing the performance of health department in terms of health & hygiene, screening & testing to detect the virus, availability of Hospitals & healthcare professionals, quality of treatment and travel limitations. It can be stated that in all aspects the healthcare department of the surveyed region is performing satisfactory according to the opinions of all-participants. But there is a lot of sectors for

improvement to achieve all-around public health and well-being because some of the population give unsatisfactory remark about the healthcare system.

Conclusion

The survey is completed successfully and the final data are analyzed and interpreted. After proper evaluation, we are able to understand the essential key points regarding the understanding of the COVID-19 perception of the general population. In summary, the degree of awareness & knowledge is depicted by the studied populations is mildly sufficient, yet lacking in specific dimensions like virus transmission process and treatment awareness. Not only that but there is some misconception and myths about vaccination program still there in people. Majority of population are aware of preventive methods & symptoms. People are following various trusted sources of information such as television broadcast, newspapers and official government website, so the government should deliver all important information to these platforms. Common people in society are well aware of medical facilities, government initiatives, which are vital to cease the infection. Concerned authorities should spend time and resources into raising awareness through official platforms. To control the pandemic situation, the authority should increase the number of frontline Healthcare professional in hospital and healthcare centers, it will be a great effort to help the population to overcome the challenges. Majority of the surveyed population were well aware of pandemic situation. But there were some misconceptions about using antibiotics against COVID-19. The respondents also

indicated that they face mental health issues due to lockdowns and economic crisis during the outbreak.

This study will make the scientific community to understand the core of public perception, myths, misconceptions, superstitions regarding COVID-19. It will help the concerned authorities to find new ways and upgrade/modify the existing strategies in order to prevent this deadly disease. Hence, it is believed that this study will help the scientific community across the globe.

Authors contributions

Aritra Saha[‡], Sejuti Ray Chowdhury[‡], Aditya Prasanna Mukherjee, Tiyas Saha, Monosiz Rahaman, Debasmita Dutta Roy, Arijit Das- Conceptualization, Survey and Methodology

Mr. Suraj Kumar Shah and Dr. Sourav De- Investigation and Writing- Original draft preparation

Conflicts of Interest

The authors declare no conflict of interest.

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