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COVID-19 In India - Awareness, Perception And Psychological Changes In Public: A Virtual Survey

Swathi T[1], Jyothi Reddy Gangavaram[1]*, M.Pooja[2], Ch.Appa Rao[3], Niranjan Rao Podili[1], K.Snigdha[4].

1. Department of Pharmacology, SVU College of Pharmaceutical Sciences, Sri Venkateswara University, Tirupati, India.517502.
2. Department of Pharmacology, Institute of Pharmaceutical Technology, SPMVV, Tirupati, India, 517502.
3. Department of Biochemistry, Sri Venkateswara University, Tirupati, India.517502.
4. Annamacharya College of Pharmacy, New boyanpalli, Rajampeta, A.P. India,516126.

*Address for Correspondence:

Jyothi Reddy Gangavaram, Department of Pharmacology, SVU College of Pharmaceuticl Sciences, Sri Venkateswara University, Tirupati, India.517502.

Email ID: jyothi.reddy992@gmail.com. ORCID: 0000-0002-9209-3835.

Abstract

Background: The world today is facing a major health crisis with serious social and economic concerns due to COVID-19 pandemic. The disease is extremely contagious and no effective clinically approved drugs are reported. Confronted with this, severe measures like lockdowns, physical distancing, etc., have been imposed to adapt and to break the chain of commuting the deadly infections. This ambiguity threatens public physical and mental health as well. To facilitate the elimination of COVID-19 from India, public adherence and compliance to the Government's control measures is essential. In this context, the present study was aimed to educate public and to investigate public awareness, population perception and psychological consequences of lockdowns through online survey in India.

Methods: This online survey was a cross-sectional study conducted for about 2 weeks in India using Google forms after taking consent from general public. The survey contained a questionnaire regarding demographics, knowledge, practices and socio-psychological consequences of COVID lockdown which was posted as a link on various social networking applications.

Results: Based on the 612 responses, it was evident that about 60% of the participants were aware about the mode of transmission of the virus, symptoms of COVID-19 and about 75% had positive perception towards COVID-19. The present study shows that psychological behavior of a minor fraction of population was affected during the COVID lockdown period.

Conclusion: The results from the study indicate that there is a need to implement more efficient awareness programs to raise the awareness of public with an emphasis on illiterates so as to effectively eliminate COVID-19 from India.

Keywords: COVID-19 in India, SARS-CoV-2, Awareness on COVID-19, Psychological consequences of COVID Lockdown, Web based survey.

Key Messages:

To facilitate the elimination of COVID-19 from India, public adherence and compliance to the Government's control measures is essential. There is a need to implement more efficient awareness programs to raise the awareness of public with an emphasis on illiterates so as to effectively eliminate COVID-19 from India.

Introduction

The present-day world is facing an unforeseen public health crisis with serious consequential social and economic challenges due to the outbreak of COVID-19 (Coronavirus disease 2019), which is caused by a novel coronavirus (SARS-CoV-2). The disease is extremely contagious and transmits from person to person through close contact and inhalation of respiratory aerosols or droplets of an infected individual.[1] Till-date neither clinically approved vaccine nor drugs that are effective against COVID-19 are reported.[2] Confronted with the COVID-19 pandemic, severe measures like lockdowns have been imposed to adapt and to break the chain of deadly infections, this ambiguity threatens public physical and mental health as well. The WHO has recently raised its concern over the epidemic's mental wellbeing and socio-psychological consequences.[3]

Globally, over 136.9 million confirmed cases and 2.95 million deaths have been reported to WHO as of 14 April 2021. USA has the highest number of cases (2.367 million) around the world and highest number of deaths (1.216 lakh). India has now occupied top 2nd place in the world (1.8 lakh cases newly reported per day as on 13th April 2021). A cumulative total of 13.87 million confirmed cases and 1.72 lakh deaths reported to WHO, and a total of 104.36 million vaccine doses have been administered As of 10 April 2021 in India.[4]

In this context, to facilitate the elimination of COVID-19 from India, public adherence and compliance to the Government's control measures is required and their awareness and positive attitude to prevent spread of COVID-19

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is essential. Therefore, the present study aimed to educate and understand the public awareness and population perception about COVID-19, and to assess the psychological consequences during the pandemic through online survey.

Methodology

This cross-sectional study was conducted for about 2 weeks all over in India. The data collected of this study is from general public through online, as social distancing is crucial, it is not recommended to do community-based sampling or household surveys. The survey contained a questionnaire which includes questions regarding demographics, knowledge, practices and the socio-psychological consequences of COVID lockdown. The poster of the study containing a brief introduction, objective as well as the link of the online questionnaire was also posted on the websites and authors' social networking applications like WhatsApp, Facebook, Instagram and Email. Persons of Indian nationality, who understood the contents of the poster, participated in the study by clicking the link. Consent was taken from all the participants through the first and foremost question with yes/no options, to confirm their voluntary participation and willingness. Consent conformation was followed by the self-report questions regarding knowledge and practices for prevention and control of spread of novel Corona virus, attitude, psychological state during this lockdown period. The questionnaire had 20 questions with multiple options as presented in the Table I. Some questions were framed in a way so as the participants can select multiple options for one question, the main purpose of framing this type of questions was to obtain more information from participants in a single question.

Table I: The questionnaire of the survey

QUESTIONS	OPTIONS
I Consent (Agree) to take part in this Corona virus (COVID-19) Survey	**-Yes** **- No**
1. In the event of COVID-19outbreak, do you think there is a cure or vaccine for the Novel Corona Virus?	-Yes - No - I don't know
2. Novel Corona Virus spreads through?	-Air -Houseflies -Respiratory droplets of infected individuals -Pet animals -I don't know
3. Which of the following is/are myths (False statements) about COVID-19	-Adding pepper to meals prevent virus -The Corona virus in India is a weak virus. -Drinking Alcohol prevents COVID-19 -Virus cannot transfer in hot climate -All the above -None of the above
4. Holding breath for 10 seconds without coughing is a test for Corona virus.	-Yes - No - I don't know
5. The symptoms of COVID-19 are?	-Fever -Dry cough -Headache -Breathlessness -Tiredness -May not show any symptoms -All the above -I don't know
6. Do you think rapid testing and Quarantine/Isolation of infected People will control the spread of COVID-19?	-Yes -No -I don't know
7. To prevent corona virus are you using any Ayurvedic/ Homeopathic medicines	-Yes -No

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8. Are you using any medicines for?	-Asthma -Diabetes -Hypertension (BP) -Heart diseases -Liver diseases -Cancer -None of the above
9. Are you taking any special care to protect old people from COVID-19?	-Yes -No
10. Do you think this Lockdown will eliminate Corona virus and we can win the battle against COVID-19?	-Yes -No - I don't know
11. If you suffer from fever, cold, cough and breathing problems what would you choose to do?	-Isolate myself for 14 days -Call COVID helpline (telepathy). -Approach COVID centers -Get medicines from pharmacy -I don't know
12. Do you think travelling is safe during this period?	-Yes -No -May be
13. Are you using any of these to improve your strength/immunity against COVID-19?	-Multivitamin tablets -Fruits -Egg and meat -Drinking hot water -Taking herbal remedies -None of the above
14. Do you Experience any of the following symptoms during lockdown period?	-Fear -Sadness -Stress -Confusion -Depression -Anger -None of the above
15. What precautions do you take when you leave home?	-Cover your face with mask. -Avoid handshaking and Close contact -Avoiding crowded places. -Physical distancing of at least 6feets -All the above.
16. How many times have you washed your hands yesterday?	0,1,2,3,4,5,6,7,8.
17. Have you heard about Arogya setu app.?	-Yes -No
18. What would be the reason for using Arogya Setu App?	-COVID-19 Tracker -Self-Assessment (self-test) -COVID-19 updates -I don't use the App
19. During this lockdown period, are you doing any of these activities?	-Spending time with family. -Yoga -meditation. -Walking -Physical exercises -Playing games -None of the above.
20. How many days you went out in the last one week	0,1,2,3,4,5,6,7.

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Results

The online survey was conducted in India, based on the demographic, awareness, perception, preventive practice and psychological behavior of the general public during COVID lockdown. A total of 612 participants responded voluntarily to the survey after giving consent. Maximum of the participants were literate people. Demographic data included name, age, gender, occupation and location. Approximately there was 51 % of females and 48.9 % of males. The age of the participants was between 12-68 years. The study group included 57.92 % of students, 14.85% lecturer and professors, 11.71 % of job holders, 3.3 % of engineers, 2.64 % of doctors and 9.57 % others, belonging to different states of India.

There were 5 questions on awareness and our findings were depicted in Figure 1. Majority of the participants (56.5 %) responded that a cure or vaccine is available for COVID-19. About 89.9 % of the participants were aware about the spread of the virus, however few reported that the virus spreads through air. Most of the participants gave correct answer about the symptoms of COVID-19. Nearly 40.7 % believed that holding the breath for 10 seconds is a test for COVID-19. On the other hand, about 39.4 % were aware and did not believe the myths that are widespread in the society, but about 15.2 % believed them as false statements.

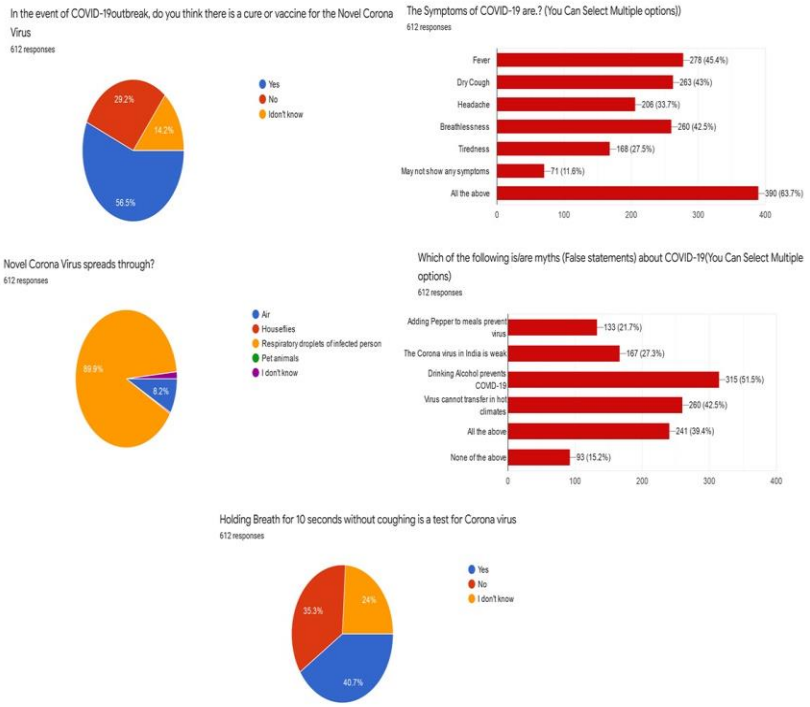

Figure 1: Results showing awareness among participants

Concerning the perceptions of general population there were 4 questions and the results were depicted in Figure 2. Overall 75 % of respondents showed positive attitude towards winning the battle against COVID-19, also had faith that the virus could perhaps be controlled and prevented by rapid testing and isolating the infected people. Most of the respondents perceived that travelling is not safe during this lockdown period.

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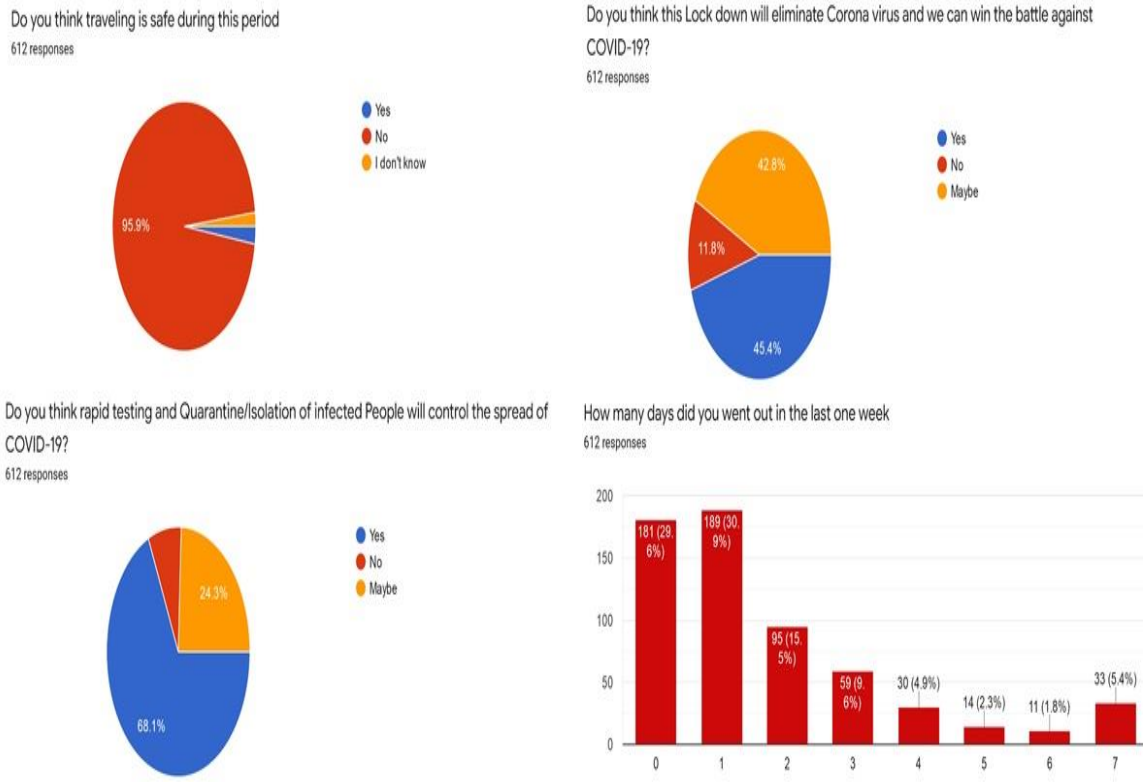

Figure 2: Results showing perception of the participants

Eight questions of preventive practice were included in the study whose results were shown in Figure 3 and 4. The results indicated that participants tend to take many preventive measures, such as boosting their immunity by taking fruits, egg and meat, drinking hot water, taking herbal remedies, multi-vitamin tablets. However, 5.17 % respondents had no access to the above. On the other hand, only 12 % of the respondents reported to use different Ayurveda/homeopathic medicines as part of their preventive practices. Moreover, about 89.5 % participants reportedly took precautions while leaving home such as covering their face with mask, avoid hand shaking, maintaining physical distancing, avoid crowded places etc. Likewise, though 89.7 % respondents heard about Arogya setu app, but 34 % do not use the app and, it was learnt from the results that the participants used the app for different reasons, the major reason was tracking COVID-19 infected people around them. Regarding their hand-washing practice, majority of the respondents usually wash about 5-8 times per day in order to prevent the spread of the virus. In our study we found that nearly 8 % were suffering from few diseases (Hypertension, Diabetes and Asthma). Participants also take special care to protect old people from corona virus.

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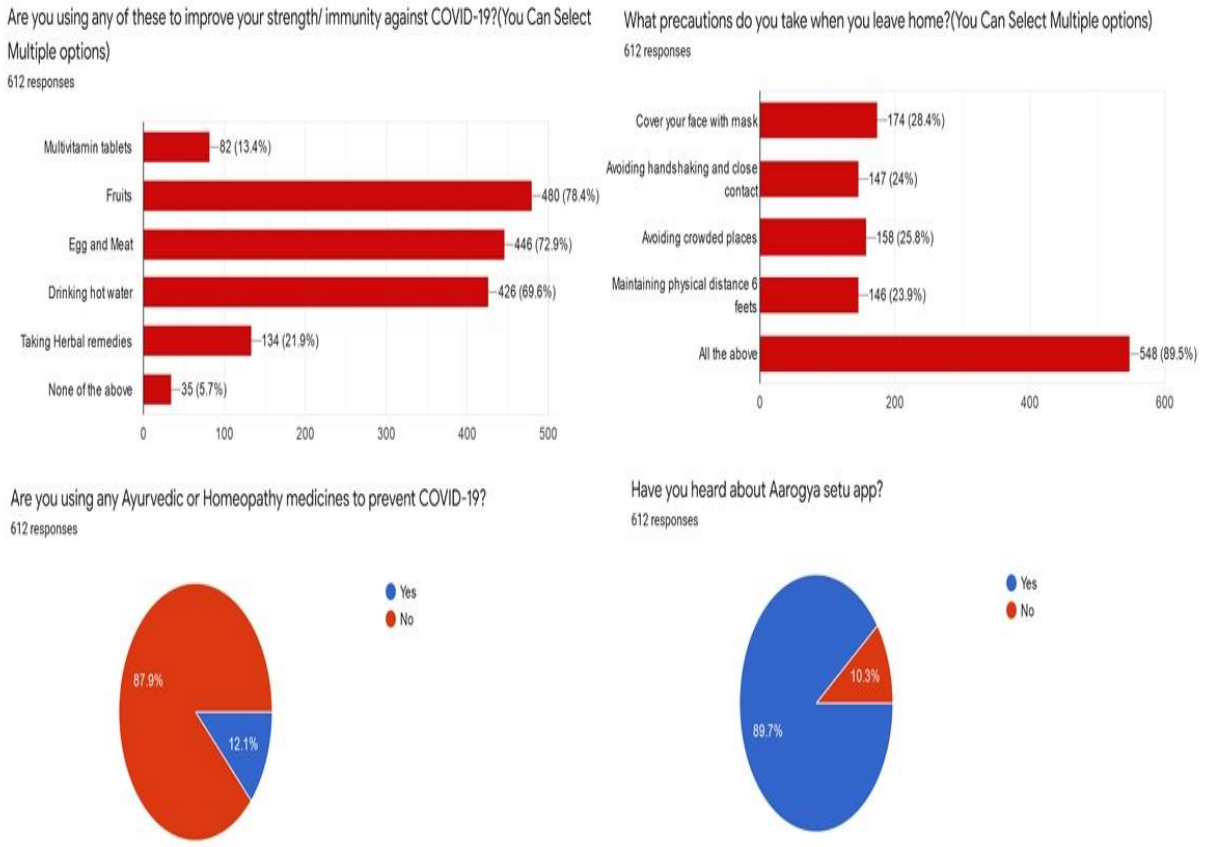

Figure 3: Results showing preventive practices of the participants

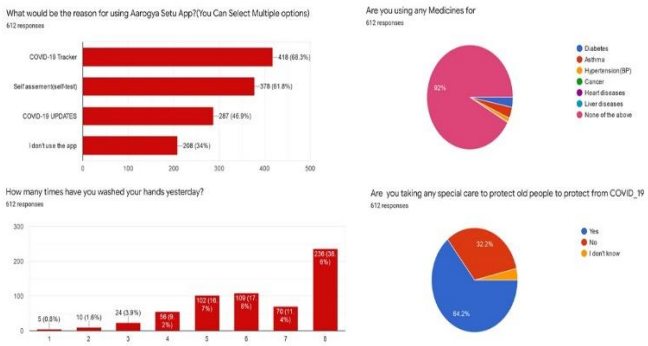

Figure 4: Results showing preventive practices of the participants

Based on psychological/behavioral consequences of COVID lockdown, there were 3 questions whose results were represented in Figure 5. Feeling stress, anger, confusion, depression, sadness are some psychological changes faced by the people during this Corona Pandemic as evident from the present results. Similarly, the behavioral perspective of the participants was investigated, suggesting that majority of the participants if experience one or few of COVID-19 symptoms would want to isolate themselves for 14 days (34.6 %), call COVID Helpline (30.9 %), approach COVID health centers (28.8 %), and few choose to get medicines from nearby pharmacy. The behavioral patterns of public were investigated, which revealed that majority respondents utilized the lockdown period by spending time with family, playing games, and doing physical exercises, yoga and meditation.

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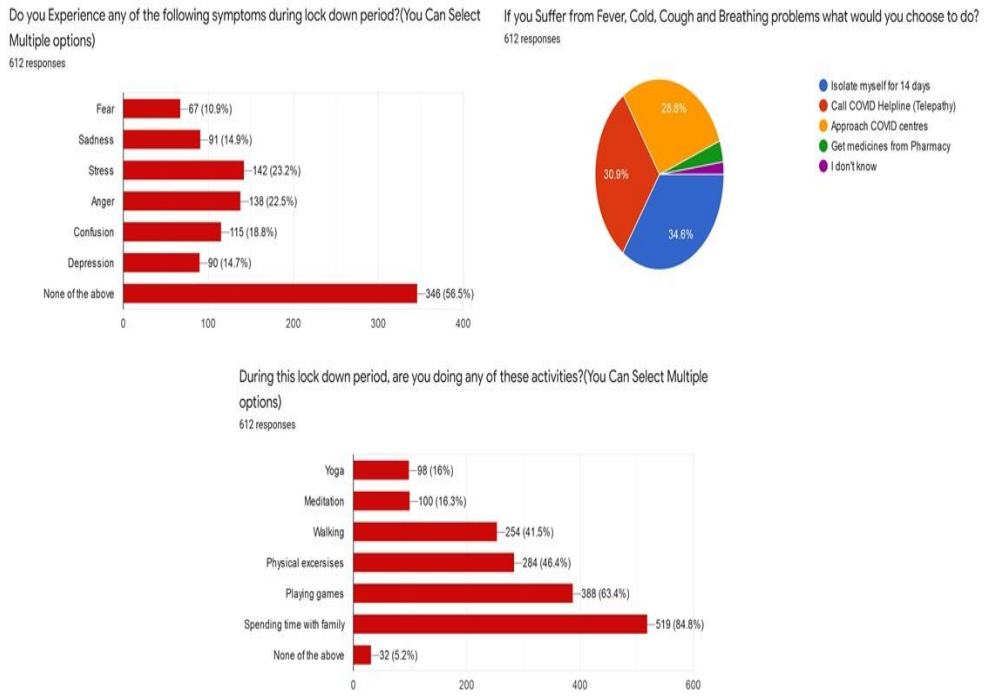

Figure 5: Results showing psychological consequences of lockdown

Discussion

COVID-19 has become a daily discussion topic in general public and media, and this crisis is creating stress throughout the population. In this scenario, WHO and public health authorities all around the globe are consistently acting to contain the spread of COVID-19. The Government of India announced a variety of measures to tackle the situation, one such measure is announcement of lockdown on 24 March 2020. However, people in the community face several challenges and problems in this period, it was a most essential step to adapt and control the spread of deadly infections in this pandemic. In this context, an online survey was conducted in India, regarding awareness, perception, prevention and psychological behavior of the general public during the lockdown period.

The main clinical symptoms include fever, dry cough and dyspnea, however upper respiratory tract symptoms like sore throat, rhinorrhoea, sneezing were less common in these patients.[5] Moreover, COVID-19 virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes, and hence, it is important to create awareness and inculcate preventive practice measures such as washing hands or frequently using an alcohol based rub, coughing into a flexed elbow and not touching face. Elderly age and comorbidities like diabetes, hypertension, cardiovascular disease, chronic respiratory disease, and cancer were identified as potential risk factors for COVID-19 and may possibly develop serious illness and mortality.[6] The best approach to slow down and prevent transmission is to be knowledgeable about COVID-19 virus, the symptoms caused, the spread and mode of transmission of the virus.

In the present study, it was evident from the results that, majority of participants were very much aware about the mode of transmission of the virus, symptoms of COVID-19, and about the availability of cure and vaccine. This could be attributed to the literate nature of the participants. The present results agreed to a study reported by Medani *et al*[7] but in contrary to another study which reported 73.4% poor knowledge about the disease.[8] This implies that, public awareness on COVID-19 was satisfactory though there was a gap (42 % of the population were unaware) which needs to be addressed for effective control of COVID-19. This awareness gap could be related to the spread and misbelief of misleading information that is being circulated among public through social media. These misbeliefs include, "adding pepper to meals will prevent virus, Corona virus in India is week, Indians are more resistant to infections, drinking alcohol prevents COVID-19, and virus cannot transfer in hotter climate, holding 10 seconds breath is a test for Corona", etc., The present investigation acknowledged poor results as about 50 % of the participants believed these falsehoods. Hence there is a need for greater efforts to raise the awareness of public in India with an emphasis on illiterate population.

Regarding perception towards COVID-19, it was noticeable that majority of the participants believed in the measures taken and were hopeful in overcoming the situation. The perception of the participants towards testing,

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isolation and control of disease was excellent and the result was in accordance with a previous study which reported excellent acceptability rate for testing.[9] They also stated that, rapid diagnosis and establishing quarantine/isolation (if tested positive) progress decision making and COVID crisis management. This could also help in reducing anxiety. Moreover, majority of the participants agreed that travelling is not safe during this lockdown period. As travelling rise the chances of spreading and getting COVID-19 and is dangerous in case of high-risk population. Though, population perception of the risk is not essentially related to the actual risk, yet it influences the protective behaviours of public.[10] Thus, good population perception as evident from the present study is a positive sign and motivates to overcome the pandemic situation effectively.

During this Corona pandemic people are practicing many preventive measures. Social distancing (e.g., school closures, cancellation of large gathering) is an important part of public health measure for infection control.[11] In this context, many social activities and gatherings have been scaled down. From the present findings, it was obvious that the participants practiced physical distancing approaches and other preventive measures. The present results were in accordance with previous reports[11,12] that showed the respondents strongly agreed that COVID-19 could be prevented by following precautions given by WHO or CDC.[13]

Accessibility to information only from trustworthy sources, like "Arogya setu" app launched by Indian government, is essential for the practice of preventive measures, with illustration of precautionary activities, and hygienic educational measures. From the present results, it is evident that there is a need to address the gap and hence it is required to educate public especially in rural areas, poorer neighborhoods, or communities and among old people, since they may have difficulties in getting access to reliable information or meeting financial or other resource barriers to practice the preventive measures.[14] Moreover, if proper hand-washing practices are implemented in self-care practices by individual people and the public on the whole, it can help to stop and prevent the spread of the virus in the country.

On the other hand, emerging COVID data suggests that in COVID-19 patients with known diabetes, hypertension and cardiac disorders, there is an increase in mortality. Therefore, Special care is essential in patients with COVID-19 with allied comorbidities.[15] A recent study among confirmed cases of COVID-19 reported that patients with any comorbidity resulted in poorer clinical results than those without.[16] From the present study we found that nearly 8 % were suffering from comorbidities, furthermore majority of the participants were precautious and took special care for old people, however it is essential to educate public to adopt preventive practices to fight against COVID-19.

WHO speculated that the present measures such as quarantine and self-isolation have affected livelihoods, normal activities and habits of people that lead to an upsurge in loneliness, insomnia, anxiety, depression, and suicidal behavior or self-harm.[17] Moreover, people tend to develop negative emotions[18] and negative cognitive assessment[19] for self-protection according to Behavioral Immune System (BIS) theory.[20] The present study confirms that psychological behavior of a minor fraction of population was affected during the COVID lockdown period. Similarly, with the potential disease threat, public may develop avoidant behaviors[21] as evident from the present study that majority of the participants choose to prefer self-isolation than other options suggesting that people tend to avoid approaching COVID helpline or health centres which might be attributed to their hesitant behaviours. These results agree with previous reports, which found that public health emergencies (e.g., SARS) triggered a series of stress emotional response containing a higher level of anxiety and other negative emotions.[22] Furthermore, the behavioral pattern of public suggest that people show more concern for health and family. On the whole, the present results emphasize the need for psychosocial therapy and social support for the anxiety and related mental health conditions.

Limitations of the present study include inaccessibility of people to online panels, android phones or internet limiting the participation of some important population groups, such as the elderly and disadvantaged population groups, uneducated people, homeless people and other vulnerable groups. The urgency of the pandemic situation also incurs some limitations to the study. Self-reported behaviours may differ from real behaviour due to the social desirability effect, and thus the outcomes related to behaviour should be understood with this reliability limitation in mind.

Conclusion

It is essential to note that the COVID pandemic has terribly affected various aspects of human life in the whole world, confronting the present health systems. We found that the higher awareness score as evident from the present study could be related to the higher preventive practices towards COVID-19. However, it is crucial to implement more efficient awareness programs and educate public to adopt preventive practices to fight against COVID-19. Moreover, the present results emphasize the need for psychosocial therapy and social support for the anxiety and related mental health conditions. In conclusion, we trust that the present study will motivate the healthcare authorities, and media to spread more COVID-19 related accurate knowledge to facilitate the elimination of COVID-19 from India.

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