

Original Research Article

Awareness of COVID-19 outbreak in local population of Maval taluka in Maharashtra, India

Shilpa A. Pratinidhi¹, Anjum A. K. Sayyed^{1*}, Mohak A. Tilokchandani², Sudnya V. Malode²,
Siddhi S. Bhalgat², Chaitanya R. Bhujbal²

¹Department of Biochemistry, ²MBBS student, MIMER Medical College, Talegaon (D) Pune, Maharashtra, India

Received: 03 May 2020

Accepted: 28 May 2020

*Correspondence:

Anjum A. K. Sayyed,

E-mail: anjumsayyed102@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: There is a growing fear and perceived threat about coronavirus among local population. The population, inclusive of all age groups is making use of available media such as internet, social media, newspapers and television to make themselves aware. There is no authenticity and information may be wrong. Since, corona has become major cause of concern, present study was carried out to bring the awareness and educate them about coronavirus among the local population.

Methods: A cross sectional study was carried out on COVID-19 by using online Google based questionnaire in Maval area to assess the knowledge and awareness about corona virus among the 125 local participants. The questionnaire consisted of 10 validated peer reviewed questions covering various aspects of COVID-19 awareness were voluntarily filled by participants. Data was analysed in Microsoft Excel 2010.

Results: Present findings revealed that 94% participants knew that COVID-19 is caused by the corona was first detected in Wuhan China and the first case of the same was reported in Kerala was known to 60% respondents. The virus remains on the surface of mobiles was known to 11% participants. 76.8% participants apprised 2-14 days being the incubation period of the virus. Patients with two or more comorbidities can develop severe COVID-19 was known to 46.6% participants. Only 5% participants knew the difference between swine flu and corona virus. Nearly 89% participants knew soap is the best material for cleaning in the presence of dirt and about 51% participants knew the need of isolating persons with known COVID-19 infection.

Conclusions: Correct answers with scientific explanation were posted to the participants in the form of instantaneous feedback. Hence knowledge gained was increased by the participants. Their misconceptions were removed. More awareness can be brought & propagation of COVID-19 infection can be prevented even after lockdown period.

Keywords: Awareness, COVID-19, Local population, Pandemic

INTRODUCTION

Novel coronavirus (19-nCoV) is a new strain that has not been previously identified in humans. The COVID-19 is caused by the virus severe acute respiratory syndrome (SARS-CoV-2). COVID-19 is an emerging respiratory disease that is caused by a novel coronavirus and it was first detected in December 2019 in Wuhan city, China.¹⁻⁴

COVID-19 expanding globally including Italy, Thailand, Republic of Korea, Japan, USA, Philippines, Vietnam and India (as of 2/6/2020 at least 25 countries).² Globally No of cases of COVID-19 cases have been reported increasing exponentially. Its main clinical symptoms include fever, dry cough, fatigue, myalgia and dyspnea.^{1,5} The experts believe that unnoticed, asymptomatic cases of coronavirus infection could be an important source of

contagion.⁶ The numbers of COVID-19 cases are increasing very fast in India. Hence, this study was conducted to assess the knowledge and awareness regarding COVID-19 pandemic among the local population which may help in curbing the further spread of the infection.

METHODS

A cross sectional study was carried out on COVID-19 by using Online Google based questionnaire (Annexure 1). The online questionnaire had 2 sections, general awareness and precautions of COVID-19 comprising total 10 questions designed to assess awareness. The study was conducted at MIMER Medical College, Talegaon, Pune from 1 February 2020 to 1 March 2020 to bring awareness on newly emerged virus among local population. The questionnaire was sent to 185 participants, out of which 125 participants consented to participate in the study by filling the response. The questionnaire was translated into local languages Hindi, Marathi and English and correct answer score were shown to them. Instantaneous correction of wrong answer was done and explanation for correct answer was immediately posted to the respondents so any misconception was removed. This questionnaire was mainly based on mode of transmission, social distancing, cleaning hands etc. Therefore knowledge and awareness about the emerging virus was accessed. The responses were calculated using Microsoft Excel 2010 and data was analyzed. The detail of score was depicted in the chart 1.

RESULTS

In this study 50.4% (n = 63) were males and remaining 49.6% (n=62) were females from Maval area (Figure 1). The mean age of the participants was 30.5 years. Study showed that majority of local population had a fair knowledge and awareness regarding COVID-19 outbreak (Figure 1).

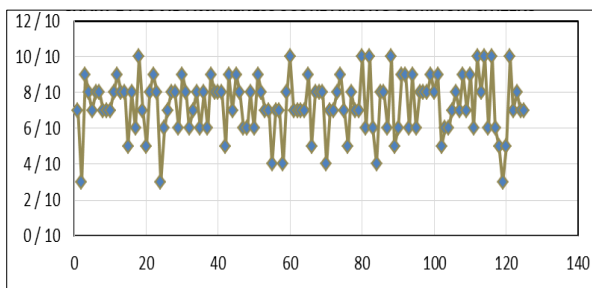


Figure 1: COVID awareness score among common citizens.

When asked about the incubation period 76.8% (n = 96) correctly answered 2-14 days. Rest 17.6% (n = 22) wrongly said 15-20 days, 0.8% (n = 1) had poor knowledge of 30 days and 4.8% (n = 6) were not knowing about the incubation period (Figure 2).

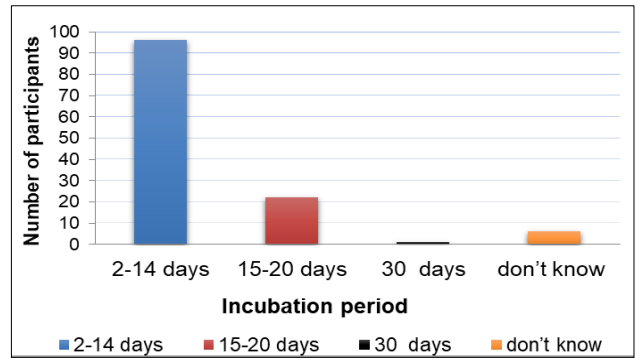


Figure 2: Response of COVID-19 to incubation period.

On asking about death of virus occur at what temperature, 80% (n = 100) rightly mentioned more than 35°C, 5.6% (n = 7) clicked on less than 30°C and 14.4% (n = 18) had no idea about it (Figure 3).

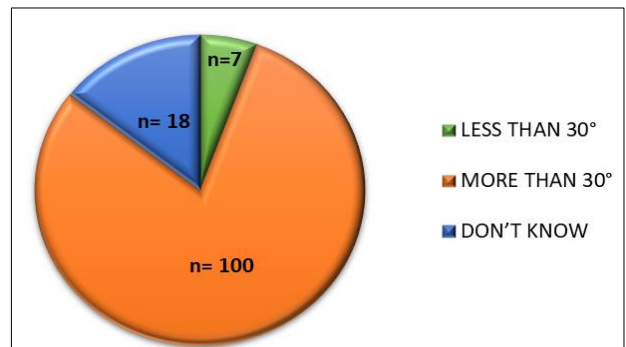


Figure 3: Response of participants to death of virus.

India's first coronavirus case was reported in Kerala. When questioned about same, 60.5% (n= 75) had correct information. 1.6% (n= 2) said Uttar Pradesh, Maharashtra 9.7 % (n= 12), Delhi 23.4% (n= 29) and 5.6% (n= 7) were not knowing about first reported case of COVID-19 in India (Figure 4).

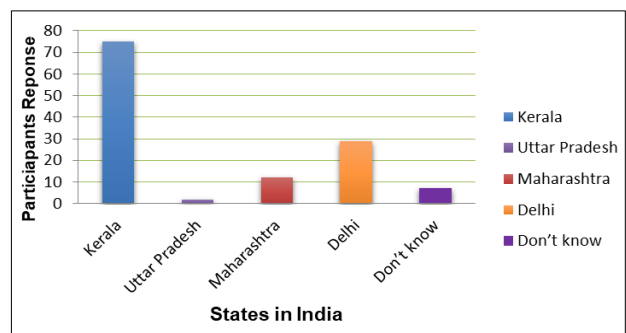


Figure 4: First case detected in India.

The question was, in which city COVID-19 first caused infection. This question doesn't need an explanation. Almost all participants (93.6%, n= 117) were knowing about Wuhan city in China. 4.8% (n= 6) mentioned

Hunan, China and rest 1.6% (n= 2) were not knowing about it (Figure 5).

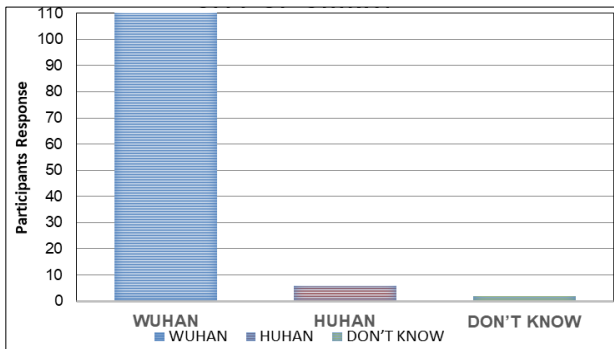


Figure 5: Case first found in which city of China.

That risk of COVID -19 infections in human. When ask about the response, 36% (n= 45) participants said it is associated with breathing diseases, 46.6% (n= 58) correctly responded all of these diseases contribute to COVID-19 infection. Only few participants said 5.6% (n= 7) diabetes and heart 4.8% (n= 6) remaining 4.8% (n= 6) reported none of these disease (Figure 6).

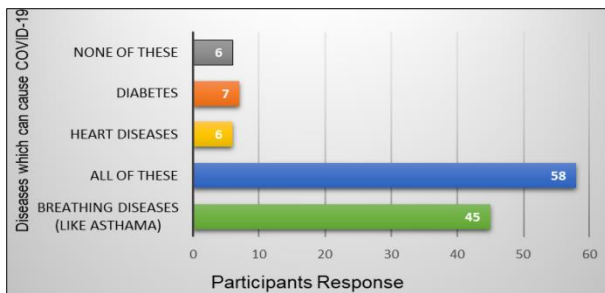


Figure 6: Risk of COVID-19 infection in human.

As such there is no association between COVID -19 and cats. When inquired about the association between COVID-19 and cats, 83.5% (n=104) had given right answer, 2.4% (n=3) participants said yes and 14.4% (n=18) participants were unaware about association between these two (Figure 7).

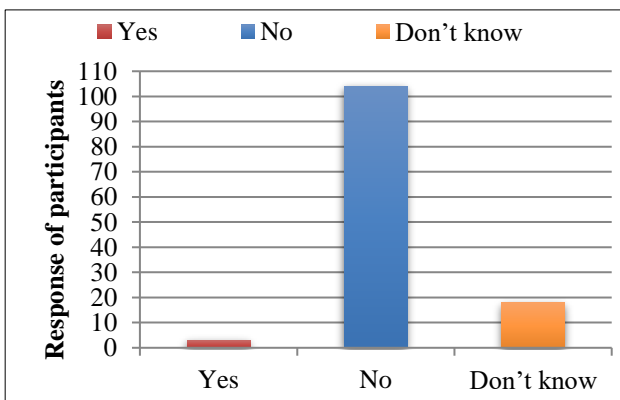


Figure 7: Association of COVID-19 with cats.

Can corona virus survive on surfaces like mobile phones that act as fomites, 77% (n=96) participants said did not had idea about it. Only few had fair knowledge 11% (n=15) and 12% (n=14) were lacking knowledge about it (Figure 8).

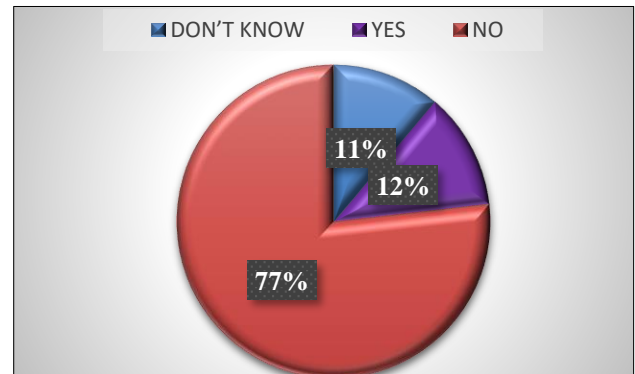


Figure 8: Can corona virus survive on surfaces like mobile phones.

Is Swine flu virus same as that of corona virus yes answer was given by 89% (n=111) which was wrong. Only 5% (n=6) knew about both viruses and rest participants 6% (n=7) didn't know about it (Figure 9).

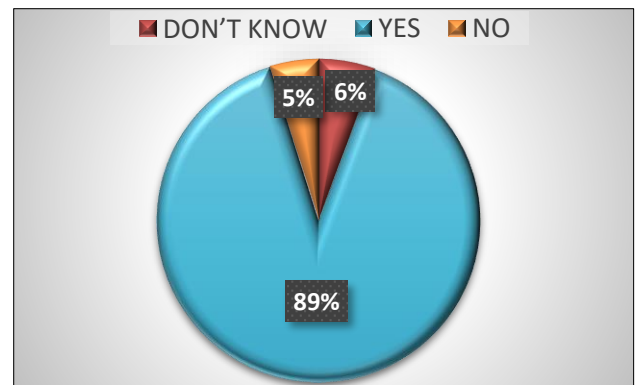


Figure 9: Is Swine flu virus same as that of Corona virus.

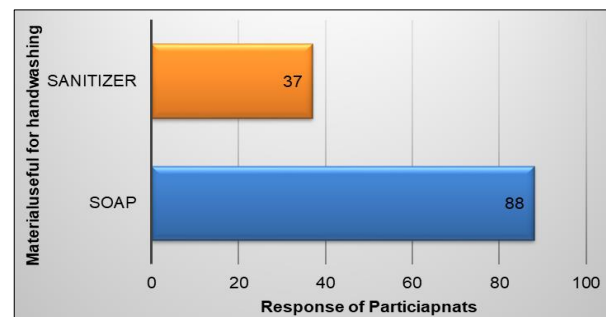


Figure 10: Material used for cleaning dirty soiled hands.

Upon asking if an individual has both dirt / soil on his/her hands which method of hand washing should he/she

prefer. 70.4% (n=88) participants had mentioned rightly as soap and remaining 29.6% (n=37) participants quoted as sanitizers. The benefits and prevention of disease were known to majority of participants (Figure 10).

On questioning about if a person who was tested positive for a COVID-19 infection which is the better alternative isolation or quarantine 51.2% (n=64) participants said isolation was right alternative, quarantine was reported by 46.4% (n=58) which was wrong. There was still a small portion of the participants 2.4% (n=3) who had no knowledge about it (Figure 11).

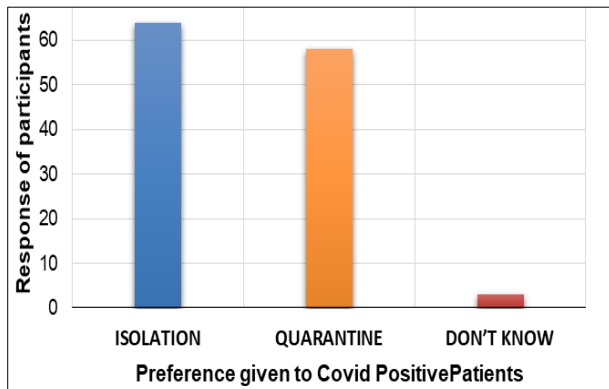


Figure 11: For a person tested positive for COVID-19 infection which is the better alternative.

DISCUSSION

To the best of our knowledge, this was the first study creating awareness among common public. Improving COVID-19 knowledge and awareness would be helpful for encouraging an optimistic attitudes and maintaining safe practices. The COVID-19 virus infects people of all ages. However, evidence to date suggests that two groups of people were at a higher risk of getting severe COVID-19 disease. These were older people (that was people over 60 years old) and those with underlying medical conditions. The first occurred deaths were majorly elderly people who might have faster disease progression. The public should pay more attention to protect elderly people who have contacted the virus. Majority of participants know well about COVID-19 (Figure 1).

The incubation period of the virus was the time between the exposure and the display of symptoms. Based on ministry of health family welfare report (MoHFW) survey, the latency period of virus was generally from 5 to 6 days with a maximum of 14 days.⁷ The preliminary estimate of the incubation period distribution provides important evidence to support a 14 day medical observation period or quarantine for exposed persons.⁸ Majority of the (76.8%, n = 96) participants correctly cited the incubation period which was 2-14 days, while other 17.6% (n = 22) couldn't make out (Figure 2).

Numbers of cases in India are ever changing. In general, coronaviruses were very stable in a frozen state according to studies of other coronaviruses, which have shown survival for up to two years at -20°C .⁹ The transmission of virus can be affected by climate, temperature and humidity etc.¹⁰

Higher temperatures were shown to have a protective effect against transmission of SARS (Severe acute respiratory syndrome) in 2002–2003, possibly due to the decreased survival of the SARS-CoV on surfaces at higher temperatures.^{11,12} Decreased aerosol spread at higher temperatures.^{13,14} Secondly, cold and dry weather can also weaken the hosts' immunity and make them more susceptible to the virus. Many participants (80%, n=100) correctly responded to death of virus occur when temperature rises above 35°C (Figure 3).

India had reported first confirmed case of novel coronavirus in Thrissur district of Kerala. The patient was a student studying in Wuhan University, China and had recently returned to India.¹⁵ 60.5% (n=75) participants had correct knowledge about first reported case of COVID-19 (Figure 4).

The COVID-19 basically originated from China in late December 2019 based on the large number of infected people that were exposed to the wet animal market in Wuhan City, China.^{16,3} The majority of the participants had clear idea about Wuhan (93.6 %, n= 117) (Figure 5).¹⁶

Person-to-person transmission occurs primarily via direct contact or through invisible droplets spread by coughing or sneezing from an infected individual. Coronavirus is one of the major pathogens that primarily target the human respiratory system.^{16,17} Around 1 out of every 6 people who gets COVID-19 becomes seriously ill and develops difficulty in breathing.⁷

Patients with COVID-19 can progress from asymptomatic or mild illness to hypoxemic respiratory failure or multisystem organ failure.¹⁸ As far as deaths were concerned, it has noticed that advanced age and comorbidities such as breathing diseases like asthma, diabetes cardiac and kidney ailments were responsible for the deaths.¹⁹ 46.6% (n=58) participants correctly responded to all of these diseases contribute to COVID - 19 infection (Figure 6).

There was limited knowledge regarding the transmission of COVID-19. Coronaviruses are a large family of viruses that are common in animals. Occasionally, people get infected with these viruses which may then spread to other people. For example, SARS-CoV was associated with civet cats and Middle East respiratory syndrome (MERS-CoV) corona virus is transmitted by dromedary camels. Possible animal sources of COVID-19 have not yet been confirmed.⁷ In this study 83.5% (n=104)

participants rightly mentioned there was no association between COVID -19 and cats (Figure 7).

Studies suggest that corona viruses may persist on surfaces for few hours or up to several days. This may vary under different conditions (e.g. type of surface, temperature or humidity of the environment).^{7,9} These droplets land on objects (like mobile) and surfaces around the person. Other people then catch COVID-19 by touching these objects or surfaces, then touching their eyes, nose or mouth.⁷ On asking about survival of corona on surfaces like mobile phones only 11% (n=15) participants had clear idea about it (Figure 8).

Coronavirus disease is caused by SARS-COV2 and MERS represents the causative agent of a potentially fatal disease that is of great global public health concern.^{16,3} The COVID-19, same as that of SARS is caused by coronaviruses and can cause viral pneumonia.²⁰ The majority of participants (89%, n=111) did not know the answer (Figure 9). Only 5% (n=6) participants knew difference between swine flu and corona virus.^{21,22}

In developing countries the most common form of hygiene was considered to be hand washing. It is an effective measure to control transmission of various communicable diseases and COVID-19. Hand washing with a generous amount of clean water and soap was effective at reducing the presence of some viruses, bacteria and parasites. Alcohol-based sanitizers (hand-rub) should be considered as an alternative to soap. These sanitizers requires less time, are microbiologically more effective and are less irritating to skin than soap, but the high cost must be weighed carefully.²³ Majority of the participants (70.4%, n=88) said soap was perfect for washing dirty hands at least 20 second to prevent COVID -19 and remaining 29.6 % (n=37) replied as sanitizer (Figure 10).

Patients with suspected 2019-nCoV infection should be quarantined as soon as possible. Doctors should make recommendations based on the patient's situation. Patients with mild symptoms and suspected infection may consider in home isolation and home care (weak recommendation) or quarantine.²⁴

As per WHO suggestion, patients with severe respiratory symptoms (pneumonia), positive COVID -19 test, or the confirmed case should be isolated (prefer a negative pressure isolation room or, alternatively, a single room with good ventilation) as per the guidelines.² Nearly 51.2% (n=64) participants said isolation was right alternative, quarantine was mentioned by 46.4% (n=58) participants (Figure 11). Under the circumstances of resolved symptoms for 24 hours and consecutive two negative results, isolation could be released.²

Extensive measures to reduce person-to-person transmission of COVID-19 have been implementing to control the current outbreak.^{16,24} Although some drugs are

under trial, there is no standard treatment available for COVID-19. Hence it is important to avoid infection or further spreading by creating awareness.

CONCLUSION

This study revealed the level of awareness regarding the COVID- 19 outbreak among the local population. By doing this study we tried to sensitize the population in control of spread of infection even after lockdown period. This method is economical, time saving and may slow down further propagation of infection among common public. By doing this type of study we tried to correct the wrong information or misconceptions which people had given in form of instantaneous answers. Now a day everyone has smart phones and social media has become main source of information dissemination. In India there is very high usage of social media, but the information given by it may not be scientifically correct. Social media information has to be authenticated. Television is one way of communication but in this study we are doing two way communications so that there was no scope for any doubts. This type of knowledge, attitude and practices cum training would be beneficial since Maharashtra has come under red zone area in India. And after the lock down phase is over the information and the knowledge gained by this study is needed to prevent and or limit the spread of the virus.

ACKNOWLEDGEMENTS

Authors would like to thank all the participants involved in this study for their co-operation and support during conduction of this study.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

1. Zhong BL, Luo W, Li HM, Zhang QQ, Liu XG, Li WT, et al. Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey. *Int J Biol Sci.* 2020;16(10):1745.
2. Wu Y, Chen C, Chan Y. The outbreak of COVID-19: An overview. *J Chinese Med Assoc.* 2020;83(3):217-20.
3. Bogoch II, Watts A, Thomas-bachli A, Huber C, Kraemer MUG, Khan K. Pneumonia of unknown aetiology in Wuhan, China: Potential for international spread via commercial air travel. *J Travel Med.* 2020;Jan 14:1-3.
4. World Health Organization. Coronavirus disease 2019 (COVID-19): situation report, 73.
5. Miller A, Reandelar MJ, Fasciglione K, Roumenova V, Li Y, Otazu GH. Correlation between universal BCG vaccination policy and reduced morbidity and

- mortality for COVID-19: An epidemiological study. medRxiv. 2020.
6. Day M. Covid-19: Four fifths of cases are asymptomatic, China figures indicate. *Br Med J.* 2020.
 7. Ministry of Health family Welfare. Available at: <https://www.mohfw.gov.in/>. Accessed April 8, 2020.
 8. Li Q, Guan X, Wu P, Wang X, Zhou L, Tong Y, et al. Early transmission dynamics in Wuhan, China, of novel coronavirus - infected pneumonia. *New Engl J Med.* 2020;328(13):1199-207.
 9. World Health Organization. Coronavirus disease 2019 (COVID-19). Situation report, 32.
 10. Wang J, Tang K, Feng K, Lv W. High temperature and high humidity reduce the transmission of COVID-19. Available at SSRN 3551767. 2020 Mar 9.
 11. Lin K, Fong DY, Zhu B, Karlberg J. Environmental factors on the SARS epidemic: Air temperature, passage of time and multiplicative effect of hospital infection Environmental factors on the SARS epidemic: air temperature, passage of time and multiplicative effect of hospital infection. *Epidemiol Infect.* 2006;134(2):223-30.
 12. Chan KH, Peiris JSM, Lam SY, Poon LLM, Yuen KY, Seto WH. The Effects of Temperature and Relative Humidity on the Viability of the SARS Coronavirus. *Adv Virol.* 2011.
 13. Lowen AC, Mubareka S, Steel J, Palese P. Influenza Virus Transmission Is Dependent on Relative Humidity and Temperature. *PLoS Pathog* 2007. 2007;3(10):e151.
 14. Bannister-Tyrrell M, Meyer A, Faverjon C CA. Preliminary evidence that higher temperatures are associated with lower incidence of COVID-19, for cases reported globally up to 29th February 2020. medRxiv. 2020.
 15. Kerala reports first confirmed coronavirus case in India. Available at: <https://www.indiatoday.in/india/story/kerala-reports-first-confirmed-novel-coronavirus-case-in-india-1641593-2020-01-30>. Accessed April 8, 2020.
 16. Rothan HA, Byrareddy SN. The epidemiology and pathogenesis of coronavirus disease (COVID-19) outbreak. *J Autoimmun.* 2020;(February):102433.
 17. Peeri N, Bibi S, Baghbanzadeh M, Change C. The SARS, MERS and novel coronavirus(COVID-19) epidemics, the newest and biggest global health threats: what lessons have we learned? *Int J Epidemiol.* 2020.
 18. Greenland JR, Michelow MD, Wang L, London M. COVID-19 Infection: Implications for Perioperative and Critical Care Physicians. *Anesthesiology.* 2020;Mar 19.
 19. World Health Organization. Coronavirus disease 2019 (COVID-19). *Situat Rep*, 51.
 20. Wang HJ, Du SH, Yue X, Chen CX. Review and Prospect of Pathological Features of Corona Virus Disease. *Fa yi xue za zhi.* 2020 Feb 25;36(1):16-20.
 21. Gari J, Reddy M, Prathyusha K, Venkataswamy M, Alluri R. Spreading of Swine flu disease: Past and Present. *Res J Pharm Dos Forms Technol.* 2018;10(2):71-8.
 22. Cui J, Li F SZ. Origin and evolution of pathogenic coronaviruses. *Nat Rev Microbiol.* 2019;17(3):181-92.
 23. Pratinidhi SA, Haribhakta S V, Ambike DA, Bhole O, Kankariya B. Study of knowledge and practices related to handwashing in school going children of a rural community. *Int J Contemp Pediatr.* 2019;7(1):24.
 24. Jin YH, Cai L, Cheng ZS, Cheng H, Deng T, Fan YP, et al. A rapid advice guideline for the diagnosis and treatment of 2019 novel coronavirus (2019-nCoV) infected pneumonia (standard version). *Military Med Res.* 2020 Dec 1;7(1):4.

Cite this article as: Pratinidhi SA, Sayyed AAK, Tilokchandani MA, Malode SV, Bhalgat SS, Bhujbal CR. Awareness of COVID-19 outbreak in local population of Maval taluka in Maharashtra, India. *Int J Res Med Sci* 2020;8:2378-84.

ANNEXURE 1

Depict response to questionnaire to COVID-19 (n=125)

Response to Questionnaire to COVID -19 (n= 125)	Options
General awareness regarding COVID-19	
What is the incubation time of COVID-19	2-14 days, 15-20 days 1 month, Don't know
In what conditions will COVID-19 die	More than 35°C Less than 30°C Don't know
The first confirmed case of coronavirus in India was reported from	Maharashtra Uttar Pradesh Kerala Delhi Don't know
In which country did COVID-19 first cause an infection	Wuhan, China Hunan, China Don't know
People having which of the following have more risk for COVID-19 infection?	Breathing diseases (like asthma) Diabetes Heart Diseases None of these All of these Other
Is there an association between COVID-19 and cats	Yes No Don't know
Can corona virus survive on surfaces like mobile phones	Yes No Don't know
Is Swine flu the same as that of corona virus	Yes No Don't know
Awareness regarding precautions	
If an individual has dirt or soil on his/her hands which method of hand washing should he/she prefer?	Handwashing with soap Handwashing with alcohol based sanitizers
For a person who has tested positive for a COVID-19 infection which is the better alternative	The person should be kept in isolation The person should be kept in quarantine Don't know