Annals of Community Health (AoCH) pISSN 2347-5455 | eISSN 2347-5714

An Indexed (Index Medicus, DOAJ and More), Peer Reviewed, Quarterly, International Journal focusing exclusively on Community Medicine and Public Health

ORIGINAL ARTICLE

A Cross-sectional Study to Assess Knowledge, Attitude, and Practice Regarding COVID-19 and Its Socioeconomic Impact among the General Population of Hubli, Karnataka

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ABSTRACT

Background: Novel coronavirus disease (COVID-19) originating from China has rapidly crossed borders, infecting people throughout the whole world. As COVID-19 pandemic has caused unprecedented human health consequences – Knowledge, attitude, and perception of the general population of India toward transmission and prevention play vital role for effective control measures. The study was conducted to assess the knowledge, attitude, and practice of the general public of India on COVID-19 and its socioeconomic impact. **Materials and Methods:** A cross-sectional survey was conducted between May 6, 2020, and June 6, 2020, among the general public of Hubli, Karnataka. A semi-structured questionnaire on knowledge, attitude, practice, and socioeconomic impact of COVID-19 was generated and randomly distributed among the public using Google forms through social media networks. Using MS Excel and SPSS version 21.0, the responses have been analyzed. **Results:** Among 201 participants, 77.6% of them have adequate knowledge and 71.1% of them have good practice and good attitude. From the study, it could be seen that 80% of them faced difficulties in getting food or essential things, 59% of them had their family income affected due to this pandemic. About 68.1% agreed that online education has a good impact on children. There is a statistical and positive correlation between Knowledge and Practice scores regarding COVID-19. **Conclusion:** The study suggests that there is a need for more stringent measures to increase the knowledge levels and practice for controlling the pandemic more effectively and also create awareness among the people regarding safety measures.

Key words: Attitude, COVID-19, knowledge, pandemic, practice

INTRODUCTION

The novel coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was initially diagnosed from Wuhan, Hubei Province (Mainland China), has already taken on pandemic size, affecting the whole world in very small time.[1] Coronaviruses, so named due to the outer fringe of envelope proteins resembling crown ("corona" in Latin), are a family of enveloped RNA viruses. They occasionally are often transmitted to a bigger human population and may cause severe respiratory illnesses, exemplified by Severe Acute Respiratory Syndrome (SARS) and Middle-East Respiratory Syndrome(MERS) in 2003 and 2012, respectively.[2]

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In the meantime, on January 11, 2020, China announced its first COVID-19 related death of a 61-year-old man exposed to the seafood Market.[2] Over a period of few weeks, the infection spread across the world in rapid pace. Watching the stretch of nations, this outbreak spread to, WHO declared it as a Public Health Emergency of International Concern on January 30, 2020.[2] Amidst the increasing deaths in China, the primary death outside China was (of a Chinese man from Wuhan) reported within the Philippines on 2nd February. On

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How to cite: Bant DD, Sushma HR, Jabeen B. A Cross-sectional Study to Assess Knowledge, Attitude, and Practice Regarding COVID-19 and Its Socioeconomic Impact among the General Population of Hubli, Karnataka. Ann Community Health 2021;9(2):292-297.

11th February, WHO announced a name for the new coronavirus disease: COVID-19. On 11th March, WHO declared COVID-19 – a pandemic as by then, about 114 countries were affected.[2] As of May 20, 2020, number of coronavirus cases is 49 lakhs with 16.9 lakh recoveries and 3 lakh 23 thousand deaths. In India, number of cases is 1 lakh 7 thousand with 42 thousand recoveries and around 3 thousand deaths. In Karnataka, number of cases is 1200, with 37 deaths.[3-6]

The COVID-19 patients can present with symptoms that vary from asymptomatic or paucisymptomatic forms to clinical conditions that are characterized by respiratory failure. Patients may develop multiorgan and systemic manifestations in terms of sepsis, septic shock, and multiple organ dysfunction syndromes.[7] Social distancing, self-isolation, and travel restrictions forced a decrease within the workforce across all economic sectors and caused many jobs to be lost. Schools have closed down, and therefore the need of commodities and manufactured products has decreased. In contrast, the necessity for medical supplies has significantly increased.[8,9]

The knowledge, attitude, and practice of the general public are expected to largely influence the degree of adherence to the personal protective measures and, ultimately, the clinical outcome of COVID-19. Hence, it's important to review these domains within the Indian population.

Need to Study

As COVID-19 is a new disease which is having most devastating effects globally, its emergence and spread has caused confusion, anxiety and fear among the general public, so their knowledge, attitude and practices towards this pandemic needs to be understood. There is no definite treatment available. Even vaccination is under trial. Injudicious use of masks has resulted in the exhaustion of resources in the market. India is in the lockdown phase in the last 2 months. Educational Institutions have been shut down and global economy has completely fallen down. Hence, there is a need to study this condition in our country.

Objectives

The objectives of the study were as follows:

1. To assess the knowledge, attitude, and practices regarding COVID-19 among the general population of India.
2. To assess the socioeconomic impact due to COVID-19.

MATERIALS AND METHODS

Study Design

A cross-sectional study conducted among the General public of Hubli, Karnataka, for a duration of 1 month (May 6, 2020, to June 6, 2020) using the convenience sampling method.

People above 18 years and those who gave consent for the study were included in the study.

Method of Data Collection

The study was conducted among the general public. The participants were briefed about the purpose of the study and informed written consent was taken and data were collected using pre-designed and semi-structured questionnaire. Confidentiality was maintained.

After getting approval from ethics committee, data were collected using Google forms. Google forms are a web-based application used to create forms for data collection purposes. A Google account was created which will be used to prepare the Google form. The form consisted of the questions and the respective options. The link for the questionnaire was sent to the participants whose data entered was subsequently recorded. The data were completely anonymous and confidential. Only the members of the survey team had access to the Google account and the recorded data.

Questionnaire consisted of 4 main sections:
Section A – Questions regarding knowledge about COVID-19
Section B – Questions assessing attitude toward COVID-19
Section C – Questions about practices regarding COVID-19.

The knowledge section consisted of two parts – 11 questions regarding clinical symptoms, prevention, and control of disease. Each question has options. A correct answer was given 1 point and an incorrect answer was given 0 point. Overall knowledge scores ranged from 0 to 7. Individuals scoring 7 or above were categorized as having adequate knowledge, whereas below 7 score were considered to have inadequate knowledge.

Evaluation of attitude of the general public was done by 8 questions comprising questions assessing viewpoint on social distancing, control of COVID-19, and lockdown to prevent the spread of COVID-19. Regarding the assessment of practice, the question was composed of 6 questions – the idea of grocery stocking, preventive measures during the lockdown, and relationship with family and friends. A similar scoring pattern as knowledge was kept. Scores of 6 and above were considered to have good practices and <6 as bad practices.

Section D

Questions about socioeconomic impact of COVID-19 which included questions regarding social distancing, missing college/friends during this pandemic, staying at home, hobbies during pandemic etc. were asked.

Statistical Analysis

The data were collected and entered in Microsoft Excel Worksheet and analyzed using appropriate tools. After

appropriate tools, results were presented in the form of proportions, percentages, and correlation which were applied when necessary.

RESULTS

A total of 201 responses were collected and the results are as follows:

Sociodemographic Characteristics of Study Participants

Among 201 participants, 96.5% belong to age group 18–27 years, 60.1% are males and 39.9% are females. It is observed that 79.1% are from nuclear family and 71.1% of sample size are Hindus, 15.9% are Muslims, 11.4% are Christians, and 2.4% belong to other religions. Furthermore, 95.1% are unmarried, 2.9% are married, and 88% are unemployed, 2.5% each are skilled and unskilled laborers. It is observed that 43.3% are having professional degree, 37.3% are graduated. 59.7% belong to socioeconomic class 1, whereas 6.9% belong to class 5 according to Modified B G Prasad classification [Table 1].

Knowledge Score Related to COVID-19

A total of 11 questions was asked to assess knowledge regarding COVID-19 among the study participants, of which 199 (99%) had heard of the COVID-19 outbreak, 95% of them knew the causative agent of the COVID-19 outbreak, that is, SARS CoV-2 and about 5% of population thought the causative agent to be bacteria, protozoa, and H1N1. About 58% of them obtained the main source of information about the outbreak from Newspaper/Television News, 24% from Social Media, 13% from Government Official Websites, and around 2.5% and 1% obtained it from Friends and Family and Public Health Banners, respectively. About 80% of the study population updated information themselves about the pandemic every day.

Knowledge about the spread of the coronavirus – 0.5% of population answered coronavirus spreads by Coughing and Sneezing, 2.5% of told it spreads by touching objects contaminated with respiratory droplets from an infected person, and around 2% of population answered by touching eyes, nose, and mouth with contaminated hands but the majority, that is, 94.55% of the population answered. All of the above 98% of them believed that hand hygiene is important in preventing the spread of the disease and 95% believed that wearing masks help prevent the spread of the disease and COVID-19 infection can be prevented [Table 2].

Majority of the population (97.01%) know that fever is one of the main symptoms of the COVID-19 infection followed by cough (94.53%) and shortness of breath (87.56%). Around 59.70% of population know that headache is also main symptom of COVID-19 infection followed by fatigue 50.35% and diarrhea 26.37%. Majority of the population (82.59%) know that people with immune deficiency (83.58%) are more vulnerable to the disease followed by older population (82.59%). Around 38.31% of population know that younger population is also susceptible to the disease and 93.5% of them believed that lockdown is an effective measure to control the transmission of infection in community.

Overall 77.6% have adequate knowledge about COVID-19 and its mode of spread, prevention, etc. [Figure 1].

Attitude Regarding COVID-19

About 40.8% agreed that they get afraid if anyone from their locality is affected with COVID-19, while 3.4% strongly disagree. About 45% disagree to receive a package from corona infected area and 50.7% strongly disagree to travel these days during pandemic.

About 41.7% agree that healthcare workers who are using proper PPE equipment should be quarantined, 37.3% remain neutral on the difficulty to stay home in lockdown. About 68.2% strongly agree that social distancing is essential to control the spread of the virus, while and 45.8% of them agree that COVID-19 will be successfully controlled while 1.9% disagree. Furthermore, about 54.2% agree that we will be more capable of handling such public emergency in the future [Table 3].

Practice Regarding COVID-19

Majority (95.5%) of sample wash their hands frequently, 87.6% keep themselves away from crowded places. About 95% wear a mask whenever they leave home and 93% avoid handshakes when they meet someone. Majority avoid touching face with hands. Furthermore, 75.6% say that grocery or medicine stockings should be done. Overall, 143 (71.1%) showed good practice and remaining 58 (28.9%) showed bad practice toward COVID-19 disease [Table 4].

Socioeconomic Impact Due to COVID-19

The socioeconomic impact due to COVID-19 was studied among the study participants which showed that 50.7% do

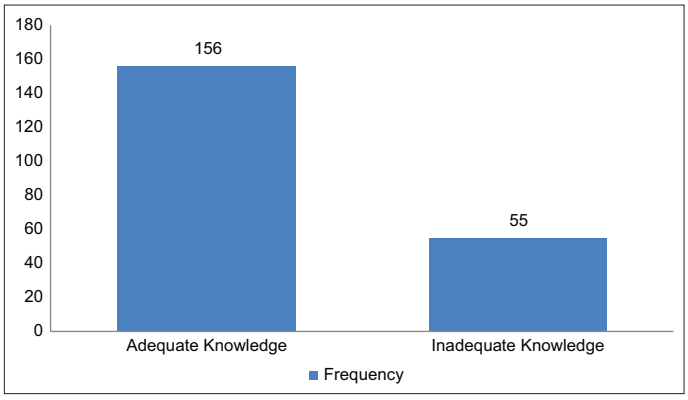

Figure 1: Knowledge scoring of the study participants

Table 1: Sociodemographic data of the study participants

Characteristic	Category	Frequency (*n*=201)	Percentage
Age	18–27	194	96.5
	28–37	5	2.5
	38–47	2	1
Gender	Male	121	60.1
	Female	80	39.9
Marital status	Married	6	2.9
	Unmarried	191	95.1
	Divorced	2	1
	Others	2	1
Type of family	Nuclear	159	79.1
	Joint	25	12.2
	Three generations	18	8.7
Occupation	Unemployed	178	88
	Professional	11	5
	Semi-professional	4	2
	Skilled	5	2.5
Education	Illiterate	2	1
	High school	2	1
	Graduate	75	37.3
	Intermediate	35	17.4
	Professional degree	87	43.3

not practice social distancing at home and 83% of them have all their family members at home, while 3% are alone, away from family during pandemic. Majority 85% of the population are spending more than 18 h and 4% of the population are spending <6 h in their homes during pandemic.

During pandemic, 55.2% of the population missing school/college activities, 29.3% of the population missing outdoor recreational activities, and 15.5% of the population missing spending time with friends. Furthermore, the people spending time working at home during this pandemic were 39.7%, watching television 61%, mobile or computer 81%, reading books 44%, playing indoor games 34%, and others 24%. From the study, it could be seen that 80% of them faced difficulties in getting food or essential things and 59% of them had their family income affected due to coronavirus pandemic. About 68.1% agreed that online education has a good impact on children. About 84% found that pollution is reduced during lockdown 48.7% feel that domestic violence has increased during this lockdown period.

There is a statistical and positive correlation between knowledge and practice scores regarding COVID-19 with a correlation coefficient of 0.243 and $P < 0.0001$ which is highly significant, that is, as the knowledge score increases, there is an increase in the practice regarding COVID-19 [Figure 2].

Table 2: Knowledge of the participants regarding COVID-19 pandemic

Knowledge-based questions	Category	Frequency (*n*=201)	Percentage
Have you heard about the COVID-19 outbreak?	Yes	199	99
	No	2	1
COVID-19 is caused by	SARS cov-2	191	95
	Others (protozoa, bacteria, h1n1)	10	5
Main source of information regarding COVID-19	Newspaper/ television/news	118	58.41
	Social media	49	24.26
	Friends and Family	5	2.47
	Government official websites	28	13.86
	Public health banners	2	1
How often do you update yourself about COVID-19 pandemic?	Everyday	162	80.19
	Every week	32	15.84
	Every 15 days	2	1
	Do not update	5	2.47
Is hand hygiene important in preventing the spread of the disease	Yes	198	98.01
	No	4	1.98
Does wearing a mask help prevent the spread of the virus	Yes	192	95.05
	No	10	4.95
Do you think COVID-19 infection can be prevented?	Yes	190	95
	No	12	5
Lockdown is an effective measure to control the transmission of infection in community	True	189	93.56
	False	12	5.94

DISCUSSION

Lack of awareness often leads to an unconcerned attitude, which may adversely affect the preparedness to meet these challenges. Hence, this study attempted to evaluate the awareness, attitude, practice, and socioeconomic impact in society. The total sample size of the present study was 202, which significantly consists males, single and well-educated population which corresponds to the study of Tomar *et al*.[1] All the participants were above 18 and majority of them were in the range of 96.5%. This is similar to the study of Roy *et al*.[2] In this study, 43.3% of subjects were pursuing a professional degree which somewhat differs from the study of Tomar *et al*.[1] in which 70% of subjects hold a degree in graduate.

Table 3: Attitude toward COVID-19 among the study participants

Question	Responses according to Likert scale				
	Strongly agree *n* (%)	Agree *n* (%)	Neutral *n* (%)	Disagree *n* (%)	Strongly disagree *n* (%)
Afraid if anyone from your locality gets coronavirus infection.	46 (22.9)	82 (40.8)	47 (23.4)	19 (9.5)	7 (3.4)
It is safe to receive a package from any area where coronavirus is reported.	8 (4)	24 (12)	40 (20)	91 (45)	38 (19)
Traveling across or within the country is safe during these times	5 (2.5)	4 (2)	16 (8)	74 (36.8)	102 (50.7)
Quarantine healthcare workers who are using proper protective equipment.	36 (18)	84 (41.7)	52 (25.9)	23 (11.4)	6 (3)
Difficult to stay home during lockdown.	32 (16)	51 (25.3)	75 (37.3)	29 (14.4)	14 (7)
Social distancing is essential to stop the spread of the virus	137 (68.2)	53 (26.4)	4 (2)	2 (0.9)	3 (1.5)
COVID-19 will finally be successfully controlled?	43 (21.5)	92 (45.8)	40 (19.9)	22 (10.9)	4 (1.9)
Do you think that we will be more capable of handling such public health emergency in future?	47 (23.4)	109 (54.2)	29 (14.4)	12 (6)	4 (2)

Table 4: Practices regarding COVID-19 among the study participants

Practice	Responses	Frequency (*n*)	Percentage
Washing hands frequently as a preventive measure	Yes	192	95.5
	No	9	4.5
In recent times have you gone to crowded places?	Yes	25	12.4
	No	176	87.6
Do you wear a mask whenever you leave home?	Yes	191	95
	No	10	5
Do you avoid handshakes when you meet someone?	Yes	187	93
	No	14	7
Avoiding touching your face with hand	Yes	172	85.6
	No	29	14.4
6.Views on grocery or medicine stockings?	Should be done	152	75.6
	Should not be done	49	24.4

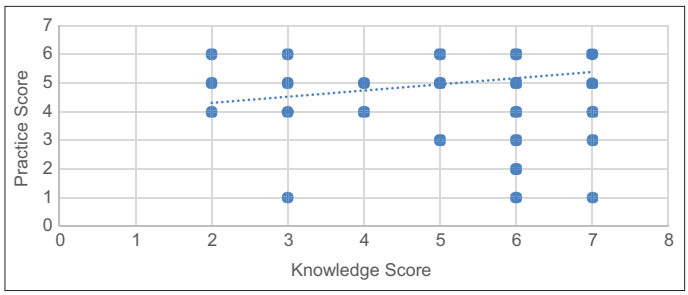

Figure 2: Correlation between knowledge and practice score regarding COVID-19

A considerable number of responders were passably aware of the basic elements of the disease. Participants were aware regarding clinical symptoms, transmission, prevention, and control of disease. About 77.6% of our subjects have adequate knowledge about the disease. This is close to the study of Tomar *et al*.[1] in which it was 80.64%. Most participants (98.01%) acknowledged that washing hands frequently could stop the spread of infection which corresponds to the study of Roy *et al*.[2] in which it was 97%.[10]

Satisfactory correct rate of COVID-19 knowledge in Indians is probably because this study was done when COVID-19 had already become a global health problem and had started to show its effects in India. People would gather information on COVID-19 from television, radio, internet, ring tones on all mobile phone service providers, discussion among peer groups, etc.[11]

Nearly 95% of respondents believed that COVID-19 can be successfully controlled which corresponds to the study of Tomar *et al*.,[1] in which it was 98%. About 93.56% of participants agreed that lockdown is an important step to stop the spread of novel coronavirus which is close to 89.4% of the study of Roy *et al*.[2] About 87% of participants disagreed for traveling across or within country safe during these times, which is, in contrast, to the study of Roy *et al*.,[2] in which 88.7% considered it safe.[12]

In our study, 63% of the people affirmed feeling scared when someone in their social circle became sick which corresponds to the study of Roy *et al*.,[2] in which it was 41%. Participants of our study had optimistic attitudes toward COVID-19. Most of them took precautions to prevent infection by COVID-19 by not going to crowded places and by wearing masks which are also seen in the study by Hussain *et al*.[7]

Majority of participants (87.6%) have taken optimistic measures by avoiding going to crowded places similar to those of the study of Roy *et al*.[2] in which 90% of them avoided gatherings. In our study, 75.6% of participants agreed with idea of grocery and medicine stocking similar to that of the study of Roy *et al*.,[2] in which it was 77%.

Limitations

1. The study was conducted online so only those participated who can access the internet.
2. The study population mainly includes literate people and who know English. Many people could not participate because of not understanding English.

CONCLUSION

To conclude, the majority of the participants have adequate knowledge, attitude, and practices regarding the disease. However, some fraction of them still are not following safety practices such as wearing masks, hand hygiene, and not traveling to crowded areas.

However, there are increased worries and apprehensions among the public regarding acquiring COVID-19 infection.

As the lockdown is being cleared off in India in spite of the rising of cases, it is our duty to maintain our hygiene and practice social distancing as far as possible. All the concerned bodies need to focus on these aspects to win the battle against COVID-19.

Recommendations

1. Efforts should be taken to make people aware of the pandemic.
2. Financial help should be given to the lower class.
3. Clean your hands often. Use soap and water or an alcohol-based hand, maintain a safe distance from anyone who is coughing or sneezing.
4. Do not touch your eyes, nose, or mouth. Cover your nose and mouth with your bent elbow or a tissue when you cough or sneeze.
5. Stay home if you feel unwell. If you have a fever, cough, and difficulty breathing, seek medical attention. Follow the directions of your local health authority

ACKNOWLEDGMENT

We are thankful to the study population who so kindly obliged to be a part of the study and our undergraduate students for being a part of our study.

REFERENCES

1. Tomar BS, Singh P, Suman S, Raj P, Nathiya D, Tripathi S, *et al*. Indian community's knowledge, attitude practice towards COVID-19. MedRxiv 2020;2020:20092122.
2. Roy D, Tripathi S, Kumar S, Sharma N, Verma SK, Kaushal V. Study of knowledge, attitude, anxiety and perceived mental healthcare need in Indian population during COVID-19 pandemic. Asian J Psychiatry. 2020;51:102083.
3. Coronavirus Live Update. Available from: https://www.news.google.com/covid19/map?hl=en-IN&gl=IN&ceid=IN:en. [Last accessed on 2020 May 20].
4. Q&A on Coronaviruses (COVID-19). Available from: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/q-a-coronaviruses. [Last accessed on 2021 Jan 15].
5. Event as they Happen by WHO. Available from: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen. [Last accessed on 2021 Jan 17].
6. COVID19INDIA. Available from: https://www.covid19india.org. [Last accessed on 2021 Jan 28].
7. Asraf H, Garima T, Singh BS, Ram R, Tripti RP. Knowledge, attitudes, and practices towards COVID-19 among Nepalese Residents: A quick online cross-sectional survey. Asian J Med Sci 2020;11:28485.
8. Nicola M, Alsafi Z, Sohrabi C, Kerwan A, Al-Jabir A, Losifidis C, *et al*. The socio-economic implications of the coronavirus and COVID-19 pandemic: A review. Int J Surg 2020;78:185-93.
9. Corona Virus Live Update. Available from: https://www.worldometers.info/coronavirus. [Last accessed on 2021 Jan 24].
10. Maheshwari S, Gupta PK, Sinha R, Rawat P. Knowledge attitude practice towards COVID-19 among medical students: A cross sectional study. J Acute Dis 2020;9:100-4.
11. Sen-Crowe B, Mckenney M, Boneva D, Elkbuli A. A state overview of COVID19 spread, interventions and preparedness. Am J Emerg Med 2020;38:1520-3.
12. Erfani A, Shahriarirad R, Ranjbar K, Mirahmadizadeh A, Moghadami M. Knowledge, attitude and practice toward the novel coronavirus (COVID-19) outbreak: A population-based survey in Iran. Bull World Health Organ 2020;15:e0238492.