Awareness of coronavirus disease (COVID-19) pandemic among interns of a tertiary care hospital

Prachi Priya, Mayur S Sherkhane

Department of Community Medicine, SDM College of Medical Sciences and Hospital, Dharwad, Karnataka, India

Correspondence to: Mayur S Sherkhane, E-mail: drmayurss@gmail.com

ABSTRACT

Background: Coronavirus disease officially called as COVID-19, which was noticed during December 2019 (Wuhan) China, later became a major public health problem leading to pandemic affecting worldwide and causing morbidity and mortality, despite various control measures. This research was undertaken to assess the level of awareness of coronavirus disease (COVID-19) among interns of a tertiary care hospital. **Objective:** The objective of the study was to assess awareness of coronavirus (COVID-19) among interns of a tertiary care hospital. **Materials and Methods:** A cross-sectional observational study was conducted among 97 interns of a tertiary care hospital in Dharwad district, Karnataka, India. An online pre-designed and pre-tested questionnaire was developed using Google forms, with a consent form attached to it for voluntary participation, through which data were collected and the distributions of responses were presented as frequencies and percentages. **Results:** Awareness regarding coronavirus among 97 interns were assessed. Of which 41 (42.3%) were male and 56 (57.7%) were female. Newspaper and television were the primary reliable source of information about coronavirus. Cough (95.87%) and fever (90.72%) were the most common symptoms. The majority of the interns (90%) agreed that coronavirus could lead to pneumonia, respiratory failure, and renal failure. About 90% considered that it can be prevented by handwashing, wearing masks, and by maintaining distance. However, with respect to curability of the disease, the awareness was on a dismal note. **Conclusion:** Awareness of acquiring and transmitting coronavirus was found to be adequate, except for the curability aspects. Thus, it is the need of the hour to have timely updates about the disease and newer guidelines to restraint the ongoing pandemic of COVID-19.

KEY WORDS: Awareness; Coronavirus; COVID-19; Interns; Pandemic; Public Health

INTRODUCTION

Novel coronaviruses (nCoV) are enveloped non-segmented positive-sense RNA viruses which belong to the family Coronaviridae, order Nidovirales distributed among humans and other mammals. Most human coronavirus infections are mild, the epidemics of the two betacoronaviruses, severe acute respiratory syndrome coronavirus (SARS-CoV), and Middle East respiratory SARS-CoV (MERS-CoV) have resulted in more than 10,000 cases in during past two decades.[1] In the year 2003, an outbreak of severe acute respiratory SARS-CoV occurred. In 2012, the World Health Organization (WHO) announced the discovery of a nCoV named MERS-CoV. Both SARS-CoV and MERS-CoV caused fatal human disease with mortality rates of 11% and 43%, respectively.[2-4]

The WHO recommends that avoiding unprotected contact farm and wild animals for the possible role of animals in CoV infection. The live-animal markets, like in China, would provide chances to animal CoV to get transmitted to humans and these markets may act as critical places for the origin of new zoonotic pathogens. The pathogens can be counteracted by immediate and timely international collaboration,

cooperative attempts between human and animal health sectors.[5]

CoV causes illness ranging from the common cold to more severe infections such as MERS-CoV and SARS-CoV. A nCoV is a new strain which has not been reported previously in humans. Common symptoms of infection include respiratory symptoms, fever, and cough, shortness of breath, and breathing difficulties. In more severe cases, infection results in pneumonia, severe acute respiratory syndrome (SARS), kidney failure, and death. Standard protocols to prevent infection includes regular handwashing, covering mouth and nose when coughing and sneezing, thoroughly cooking meat and eggs as well as avoiding close contact with persons showing symptoms of respiratory illness such as coughing and sneezing.[6]

As the diseases have led to the pandemic, it is important to know the exact definition of case, suspected case, and probable case.

Suspected Case[7]

1. A person who had an acute respiratory illness met at least one of the following symptoms – sudden onset of sore throat, cough and dyspnea and with no other etiology that fully explains the clinical presentation and a history of travel to or residence in a country/area/territory reporting local transmission of COVID-19 disease during the 14 days before symptom onset.
    OR
2. A person with any acute respiratory illness and having been in contact with a confirmed or probable COVID-19 case in the past 14 days before the onset of symptoms.
    OR
3. A person with a severe acute respiratory infection (fever and at least one sign/symptom of respiratory disease, e.g., cough and shortness of breath) and requiring hospitalization and with no other etiology that fully explains the clinical presentation.

Probable Case[7]

A suspected person for whom the results of investigations for coronavirus disease (COVID-19) by the laboratory are not conclusive or for whom investigation was positive on a pan-coronavirus assay.

Confirmed Case[7]

A person for whom the reports of laboratory testing for COVID-19 confirm infection, irrespective of clinical presentation of the person.

Definition of Contact[8]

A contact is a person who experienced any one of the following exposures during the 2 days before and the

14 days after the onset of symptoms of a probable or confirmed case:

1. Face-to-face contact with a probable or confirmed case within 1 meter and for more than 15 min
2. Direct physical contact with a probable or confirmed case
3. Direct care for a patient with probable or confirmed COVID-19 disease without using proper personal protective equipment (PPE); OR
4. Other situations as indicated by local risk assessments

Healthcare workers (HCWs) are at major risk as they are front line workers in this pandemic. Apart from general measures taken by a HCW, a special precaution to be taken by wearing well-fitted FFP3 respirator, tight-fitting eye protection, gloves, and long-sleeved impermeable protective gowns when performing aerosol-generating procedures such as tracheal intubation, bronchoalveolar lavage, other diagnostic airway procedures, and manual ventilation for further transmission by airborne spread. Health-care personnel should self-monitor themselves for any respiratory symptoms or fever for at least 14 days following exposure to a case and report sick, if symptomatic to prevent nosocomial infection.[9]

Ministry of Health and Family Welfare, Government of India (MOHFW-GoI) says everyone need not to wear mask, only wear mask if you have symptoms, if you are caring COVID-19 case/suspect, or if you are HCW attending patients with respiratory symptoms.[10]

The Government of India has established a network of testing laboratories for the new SARS-CoV-2 virus very swiftly, starting with the availability of validated diagnosis at The Indian Council of Medical Research National Institute of Virology(ICMRNIV), Pune, and testing capacity was further up-scaled to another 13 Department of Health Research, viral research and diagnostic laboratories, and ICMR.[11]

The government of India has designated test centers throughout the country for the process of diagnosis and treatment. Guidelines are issued by the ICMR for testing by private labs. The government has also issued price caps for testing and collaborated with national laboratories. The test is free and involves the sampling of bodily fluids for which results will be obtained in 5 h. As per MOHFW-GoI, at least 111 labs will conduct test for diagnosis of nCoV across the country.[12]

Global COVID-19 Situation

As on April 16, 2020, WHO coronavirus disease (COVID-19) outbreak situation report: 1995983 confirmed cases, 131037 confirmed deaths affecting 213 countries, areas, or territories with cases were reported.[13] The most affected countries with confirmed cases and deaths were United States of

America-604070 (25871) followed by Spain-177633 (18579) and Italy-165155 (21647).[14]

COVID-19 Situation in the WHO South-East Asia Region (SEAR)

As on April 17, 2020, SEAR confirmed cases were 23,532 with total deaths of 1050. The highest cases and deaths were reported from India-13,387 (437) followed by Indonesia-5,516 (496) and Thailand-2,672 (46).[15]

COVID-19 Situation India

In India, as on April 17, 2020, 11201 active cases, 1748 were cured/discharged with 437 deaths and one migrated were reported.[16] The highest number of confirmed cases was reported from Maharashtra 3202 followed by Delhi 1640 and Tamil Nadu 1267.[17]

COVID-19 Situation Karnataka

As of April 16, 2020, Karnataka tested 13,724 of which confirmed cases were 315, active cases (220), recovered (82), and deceased (13). Highest confirmed cases were reported from Bengaluru (87), Mysuru (61), Belagavi (36) followed by Kalaburagi (20) and Vijaypura (17). Dharwad, the place where the present study was conducted had reported six confirmed cases with no mortalities as on April 17, 2020, which accounted to 1.9% of the total cases in Karnataka.[18]

The global pandemic of coronavirus is surging rapidly. At present, there is death in awareness of coronavirus pandemic which is masked by more of myths rather than authentic facts. As medical professionals are frontline workers in managing the outbreak, it is pivotal to be aware of the recent updates and facts about the COVID-19 pandemic. In view of the above background, this study was conducted to assess the awareness of coronavirus disease (COVID-19) among interns of a tertiary care hospital in Dharwad district of Karnataka, India.

MATERIALS AND METHODS

Study Design

This was a cross-sectional, observational study carried out in the month of March 2020, among interns of a tertiary care hospital, Dharwad, Karnataka, India.

Informed consent through Google forms was obtained from the study participants, who were willing to participate on a voluntary basis.

Sampling Method

A total of 97 interns were pursuing their compulsory rotatory internship in the tertiary care sector. All the interns participated in the study.

Study Instrument

An online self-reported questionnaire was designed by the investigators which were a pre-designed and pre-tested pro forma divided into three parts: First part comprised questions pertaining to a general awareness of COVID-19, second part relating to disease diagnosis, symptoms, and prevention methods. The third part of the questionnaire was to assess the awareness regarding Karnataka State Guidelines for ten bedded isolation ward on the preparedness of COVID-19.[19]

Inclusion and Exclusion Criteria

Interns willing to participate on a voluntary basis were included in the study and those who did not want to take the study and incomplete respondents were excluded from the study.

Data Collection

An online pre-designed and pre-tested pro forma was created by using Google forms, with a consent form attached to it for voluntary participation. The link of the pro forma was sent through e-mails, WhatsApp, and other social media links to the study participants. The study participants were encouraged to complete the survey. On receiving and clicking the questionnaire link, the participants got auto directed to the information about the study and informed voluntary consent. After they accepted to take the survey, they filled up the details, which had a set of various questions split into three sections, which appeared sequentially for the study participants to answer.

Statistical Analysis

Data entry and analysis were done using Microsoft excel 2010. The distribution of responses was presented as frequencies and percentages.

RESULTS

A total of 97 interns took part in the study and all of them between the age group of 22–24 years.

Table 1 depicts the general awareness of COVID-19. The most common source of information for COVID-19 was television 57 (58.76%) and newspapers. Eighty-eight (90.72%) considered infant and old age as most susceptible. The most common environmental factors for the risk of COVID-19 were poor hygiene and overcrowding. A majority of 92 (94.85%) considered staying at home was the safest option.

Awareness of COVID-19 diagnosis, symptoms, and prevention is described in Table 2. When asked about the symptoms, most commonly opined were cough 93 (95.87%) and 88 (90.72%) fever. Eighty-one (83.51%) knew that the

Table 1: General awareness regarding COVID-19 among the study participants (*n*=97)

Questions	Number	Percentage
Source of information*		
Newspaper	54	55.67
Television	57	58.76
Academic	37	38.14
Family/friends	38	39.17
Mode of transmission		
Water	00	00
Respiratory droplets	88	90.72
Air	09	9.28
Other body fluids (blood, semen)	00	00
Risk group*		
Young adults	04	4.12
Women	35	36.08
Infants and old age	88	90.72
Adolescents	93	95.87
Pregnant	44	45.36
Environmental factors*		
Overcrowding	86	88.66
Poor sanitation	81	83.50
Poor hygiene	88	90.72
Others (pets, wild animals)	19	19.59
Opinion*		
Should stay at home	92	94.85
Should be allowed to go out in crowded places	12	12.37
Should not marry	01	1.03
If lactating should not breastfeed	25	25.77
Dietary restrictions	06	6.59

*Multiple answers

Table 2: Awareness of COVID-19 diagnosis, symptoms, and prevention (*n*=97)

Questions	Number	Percentage
Common symptoms*		
Fever	88	90.72
Cough	93	95.87
Body ache	44	45.36
Diarrhea	35	36.08
Burning micturition	4	4.12
Lab diagnosis		
Hemagglutination test	7	7.22
Reverse transcriptase-polymerase chain reaction	81	83.51
ELISA	5	5.15
Peripheral smear	4	4.12
Treatment preferred		
Allopathy	74	76.29
Homeopathy	2	2.06
Ayurveda	21	21.65
Mode of prevention*		
Maintain distance of 1 m	88	90.72
Mask usage	87	89.69
Drug prophylaxis/medicines	6	6.18
Handwashing frequently/cough etiquette practice	88	90.72
Vaccines	4	4.12

*Multiple answers

disease can be diagnosed by RT-PCR. If somebody among the family members and friends acquires the disease, the preference was allopathy doctor 74 (76.29%) followed by Ayurveda 21 (21.65%). Handwashing and following cough etiquette were the most common modes of prevention 88 (90.72%) followed by wearing mask and social distancing.

When questioned about their knowledge regarding curability, 64 (70.32%) study, participants told that it can be cured. When asked about the attitude toward COVID-19 patients, 92 (94.85%) of the study participants were of the opinion that a person infected with the virus should stay indoors and 6 (6.59%) opined that they should be put on with dietary restrictions.

Table 3 illustrates the awareness regarding guidelines for 10 bedded isolation ward on the preparedness of COVID-19.[19] All the 97 interns were aware of the guidelines imposed by the government. A majority 70 (80.41%) of interns told that there should be at least 1-m distance between the beds, 64 (65.99%) opined that separate wall or roof fall screen between each

bed and good ventilation should be maintained. There was a mixed response for separate medical equipment for each patient such as thermometer, pulse oximeter, stethoscope, and necessary medicines. More than 90% interns agreed for separate personal kits for each patient and placement of case sheet outside the ward. Ninety-six (98.16%) study participants considered PPE should be discarded properly after it is used.

DISCUSSION

At present, COVID-19 is a global pandemic amounting to greater mortalities. With the current scenario of transmission of the disease, there is always anxiety and mental stress adding to the fear and concern for all, including general public, health officials, and health-care systems.[20] Hence, it becomes pivotal to manage and convey authentic information regarding COVID-19. In the present study, an assessment regarding awareness of COVID-19 was done among interns. From the present study, it was evident that interns had a good awareness of COVID-19 in the context of disease transmission, environmental conditions, symptoms, diagnostic procedures, and prevention. The interns were also updated in regard to the guidelines for 10 bedded isolation ward on the preparedness of COVID-19 imposed by Karnataka.

Table 3: Awareness regarding guidelines for 10 bedded isolation ward on the preparedness of COVID-19*(*n*=97)

Guidelines for 10 bedded isolation ward on the preparedness of COVID-19*		
Guidelines	**Number**	**Percentage**
Distance between each bed should be minimum 1 m		
Yes	78	80.41
No	3	3.09
Do not know	16	16.50
Separate wall or roof fall screen between each bed		
Yes	64	65.99
No	5	5.15
Do not know	28	28.86
Good ventilators at least 12 cycle/min or 16 cycles of air/second/good cross ventilation		
Yes	60	61.86
No	12	12.37
Do not know	25	25.77
Separate medical equipments for each patient such as thermometer, pulse oximeter, stethoscope, and necessary medicines (if not available, to be sterilized after each case)		
Yes	61	62.89
No	29	29.89
Do not know	7	7.22
Separate personal kits for each patient such as sterilizers, tissue papers, and soaps		
Yes	93	95.88
No	0	00
Do not know	4	4.12
Case sheet should be kept outside the ward		
Yes	91	93.81
No	5	5.15
Do not know	1	1.04
Always enter the ward with PPE. After use, it has to be discarded according to biomedical waste management rules and packed properly		
Yes	96	98.96
No	00	00
Do not know	1	1.04
All protocols of isolation ward have to be followed		
Yes	87	89.70
No	6	6.18
Do not know	4	4.12

*Guidelines for 10 bedded isolation ward on the preparedness of COVID-19[19]

In the present study, the majority of the study participants belonged to 22–24 years of age group, 97 interns participated, of which 57.7% were female and 42.3% were male.

In a study conducted by Modi *et al*.,[21] on various health professionals in a tertiary-care hospital and teaching institute in Navi Mumbai, Maharashtra, India, it was found that maximum was from the age group of 18–30 years and 75.9% were female.

In a web-based study conducted globally by Bhagavathula *et al*.,[20] among HCWs it was found that study participants used social media to get information (61%) whereas, in our study, the most common source of COVID-19 information was mass media, this shows that our study participants had good access to the internet and were updated about the scenarios occurring globally.

In a study conducted in the adult population by Roy *et al*.,[22] in Lucknow, Uttar Pradesh, India, it was found that only 18.2% regarded fever as a symptom of COVID-19, which is known to be a major symptom. In the present study, it was found that more than 90% opined fever and cough as the most common presentation of COVID-19, illustrating good awareness of the disease symptoms.

In our study, infants and old age were considered as most vulnerable because of the variations in immunity and associated morbidities in the elderly.

In a scoping review conducted by Adhikari *et al*.,[23] which discussed and analyzed 65 review articles stated that case isolation, identification, and follow-up of contacts, environmental disinfection, and use of PPE were the public health measures to contain the spread of the disease.

In our study, poor sanitation and poor hygiene practices were posing a risk of infection, which shows that our study participants were aware of the risks posed by poor personal hygiene, overcrowding, and unhealthy surroundings in developing the infection.

In a study conducted among the adult population by Roy *et al*.,[22] in Lucknow, Uttar Pradesh, India, it was found that most participants (97%) acknowledged that washing hands frequently could stop the spread of infection which was in simulation our study where in 90.72% opined that hand hygiene was a simple and basic tool to be practiced by everyone so as to combat disease transmission.

In the present study, 83.51% were aware of the correct diagnostic tests (reverse transcription polymerase chain reaction), which shows that there was good theoretical literature knowledge among our study participants. Interns were regularly visiting the websites of WHO, MoHFW-GoI, and ICMR to know the protocols regarding diagnostic procedures being followed and the changes, if any being made on a day to day basis.

In a study conducted in the adult population by Roy *et al*.,[22] in Lucknow, Uttar Pradesh, India, it was found that 29.5 % answered that the virus spreads through multiple modes such as touching, kissing, sneezing, and food. In the present study, maximum participants knew about the transmission of COVID-19 through respiratory droplets, from which we can conclude that our study participants were aware of the facts and not biased with any myths.

In the present study, when awareness regarding Karnataka State Guidelines for 10 bedded isolation ward on the preparedness of COVID-19,[19] it was found that maximum study participants had adequate authentic awareness of the protocols imposed by their state. This shows that our study participants were updating their knowledge on an everyday basis and knew the protocols and standard operating procedures framed by the state.

Strengths and Limitations

To the best of our understanding, this is the first study that evaluates the awareness of COVID-19 among interns only. Our study was undertaken to assess awareness of COVID-19 among interns and thus enable them to efficiently face the pandemic and not panic, overcome the hurdles and contribute in combating the disease using their authentic knowledge and orderly skills. The present study related a systematic and précised strategy to recover relevant data as per the research objectives. Google forms, simple, efficient, reliable, and cost-effective tool were used so as to follow the norms of social distancing, avoiding direct contact with interns.

Nevertheless, few limitations were acclaimed in our study. Basically, the findings are elicited from a self-reported questionnaire and not on observations; hence, some bias in the results cannot be excluded from the study. Furthermore, the study was conducted with comparatively small sample size, was limited to the participants who had knowledge of the English language, owned smartphones, and e-mail IDs, which eventually represents the educated population of the country, and consequently these study findings restrain from generalizing it to the entire community. However, despite the limitations, our study findings provide authentic information about the awareness of COVID-19 during the peak period of the pandemic.

CONCLUSION

The present study shows a holistic picture of awareness in response to the outbreak of COVID-19. During this timely period, various studies have been published exploring the epidemiology, causes, clinical manifestation and diagnosis, prevention, and control of the novel coronavirus. However, studies in awareness domain mainly among frontline workers help to minimize the impact of the outbreak. The basic awareness regarding COVID-19 among the study participants was appreciable, though few misconceptions noted on a lesser note. There is a need for improvement in understanding of epidemiology, transmission, treatment, and methods of control and prevention by strengthening all channels of communication. Conducting periodic webinars for educational intervention must be given a consideration which could be a useful and safe tool to create more awareness. As the global threat of COVID-19 continues to emerge, greater attempts through educational campaigns are needed to intensify the awareness program and thus help in combating the disease.

REFERENCES

1. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, *et al*. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet 2020;395:497-506.
2. Pattnaik S. Infection control support training, in a hospital of KSA for containment of Middle East respiratory virus syndrome coronavirus (MERS-CoV). Int J Med Sci Public Health 2016;5:361-3.
3. Alkot M, Albouq MA, Shakuri MA, Subahi MS. Knowledge, attitude, and practice toward MERS-CoV among primary health-care workers in Makkah Al-Mukarramah: An intervention study. Int J Med Sci Public Health 2016;595:952-9.
4. Chan-Yeung M, Xu RH. SARS: Epidemiology. Respirology 2003;8:S9-14.
5. Malik YS, Sircar S, Bhat S, Sharun K, Dhama K, Dadar M. Emerging novel coronavirus (2019-nCoV)-current scenario, evolutionary perspective based on genome analysis and recent developments. Vet Q 2020;40:68-76.
6. World Health Organization. Coronavirus. Available from: https://www.who.int/health-topics/coronavirus#tab=tab_1. [Last accessed on 2020 Apr 25].
7. Sharma SK, Mudgal SK, Panda PK, Gupta P, Agarwal P. Novel coronavirus (2019-nCoV) infection: Guidance outlines on infection prevention and control for health care workers. Indian J Commun Health 2020;32:5-13.
8. World Health Organization. Coronavirus Disease 2019 (COVID-19) Situation Report 87. Available from: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200416-sitrep-87-covid-19.pdf?sfvrsn=9523115a_2. [Last accessed on 2020 Apr 25].
9. Banu N. Novel coronavirus: Concern over healthcare professionals. Med J DY Patil Vidyapeeth 2020;13:185-6.
10. Ministry of Health and Family Welfare Government of India. Novel Coronavirus (COVID-19). Available from: https://www.mohfw.gov.in/pdf/Mask-Eng.pdf. [Last accessed on 2020 Apr 25].
11. Gupta N, Potdar V, Praharaj I, Giri S, Sapkal G, Yadav P, *et al*. Laboratory preparedness for SARS-CoV-2 testing in India: Harnessing a network of virus research and diagnostic laboratories. Indian J Med Res 2020;151:216-25.
12. National Investment Promotion and Facilitation Agency. Enlisted Laboratories for Coronavirus Testing. Available from: https://www.investindia.gov.in/team-india-blogs/enlisted-laboratories-coronavirus-testing-across-india. [Last accessed on 2020 Apr 25].
13. World Health Organization. Coronavirus Disease Pandemic. Available from: https://www.who.int/emergencies/diseases/novel-coronavirus-2019. [Last accessed on 2020 Apr 16].
14. World Health Organization. COVID-19 Situation in the WHO South-East Asia Region. Global Cases and Deaths.

Available from: https://www.experience.arcgis.com/experience/56d2642cb379485ebf78371e744b8c6a. [Last accessed on 2020 Apr 16].

15. World Health Organization. COVID-19 Situation in the WHO South-East Asia Region. Available from: https://www.experience.arcgis.com/experience/56d2642cb379485ebf78371e744b8c6a. [Last accessed on 2020 Apr 17].

16. Ministry of Health and Family Welfare Government of India. COVID 19 India. Available from: https://www.mohfw.gov.in. [Last accessed on 2020 Apr 17].

17. COVID 19 Tracker India. Available from: https://www.covid19india.org. [Last accessed on 2020 Apr 17].

18. COVID 19 Tracker India. Karnataka State. Available from: https://www.covid19india.org. [Last accessed on 2020 Apr 17].

19. Government of Karnataka. Guidelines for l0 Bedded Lsolation Ward. Available from: https://www.karunadu.karnataka.gov.in/hfw/kannada/nCovDocs/Guidelines-Isolation-Ward.pdf. [Last accessed on 2020 Apr 17].

20. Bhagavathula A, Aldhaleei WA, Rahmani JR, Mahabadi MA, Bandari DK. Novel coronavirus (COVID-19) knowledge and perceptions: A survey of healthcare workers. JMIR Public Health Surveill 2020;10:2196.

21. Modi PD, Nair G, Uppe A, Modi J, Tuppekar B, Gharpure AS, *et al*. COVID-19 awareness among healthcare students and professionals in Mumbai metropolitan region: A questionnaire-based survey. Cureus 2020;12:e7514.

22. Roy D, Tripathy S, Kar SK, 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 Psychiatr 2020;51:102083.

23. Adhikari PS, Meng S, Wu YJ, Mao YP, Ye RX, Wang QZ, *et al*. Epidemiology, causes, clinical manifestation and diagnosis, prevention and control of coronavirus disease (COVID-19) during the early outbreak period: A scoping review. Infect Dis Poverty 2020;9:29.