

COVID-19 Related Awareness among Resident Doctors of Civil Hospital, Ahmedabad: A Questionnaire-Based Survey

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ABSTRACT

Background: COVID-19 emerges as a global pandemic, for which appropriate infection prevention and control measures need to be adopted. A lack of awareness and poor understanding of the disease among medical personnel may result in worsening of the situation. To serve the purpose, resident doctors are supposed to have sufficient and up to date knowledge regarding COVID-19.

Aim: To assess awareness of COVID-19 among resident doctors of Civil Hospital, Ahmedabad.

Methods: It was a cross sectional, questionnaire-based online study carried out in resident doctors of civil hospital, Ahmedabad over a period of 2 months. An online google form containing 20 multiple choice questions from modules prepared by senior faculty members of civil hospital, Ahmedabad and GMERS Gandhinagar which intend to cover epidemiology, clinical features, diagnosis, treatment and preventive measures including biomedical waste management of COVID-19 was sent via message, email or whatsapp to access COVID-19 related awareness among resident doctors of civil hospital, Ahmedabad.

Results: Total 228 resident doctors participated in the study with gender distribution of 36.84% female and 63.16% male residents and got mean

knowledge score of 14.66 out of maximum of 20 points. Most of the residents were aware about diagnostic test of COVID-19 (77.8%) while least correct response was for category of COVID-19 disease and disposal of N-95 mask. The most correct response was 97.8% for preferred diagnostic test for COVID-19 which is RT-PCR while the least correct response was 47.8% for category of COVID-19 disease. The overall knowledge regarding epidemiology is 79.2%, clinical features and complications is 69.9%, treatment of COVID-19 is 77.3%, preventive measures is 66.46% and about diagnosis of COVID-19 is 82.4%.

Conclusion: As the global threat of COVID-19 continues to emerge, it is important to have the knowledge and awareness among resident doctors. Educational interventions are useful to provide resident doctors up to date and proper knowledge regarding COVID-19.

Key words: COVID-19, Resident doctors, Knowledge, Awareness

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INTRODUCTION

Corona Virus Disease 2019 (COVID-19) is an RNA virus, with a typical crown-like appearance under an electron microscope due to the presence of glycoprotein spikes on its envelope [1]. On the last of December 2019, a cluster of pneumonia cases appeared in Wuhan, a highly populated city in Central China, where more than 11 million populations reside [2]. The World Health Organization (WHO) stated the Chinese outbreak of novel coronavirus as a public health emergency on January 30 and named COVID-19 on February 11, 2020 [3,4]. As of 2nd June, 2021, there were total 28,307,832 confirmed cases in our country out of which 335,114 were dead due to COVID-19 in India. The severity of symptomatic infections ranges from mild to critical. Approximately 80% of patients have mild symptoms, whereas less than 20% experience severe symptoms such as dyspnea and shock, respiratory failure occurs in less than 5% of patients [5-8]. Elderly patients and or patients with comorbidities, such as cardiovascular diseases, respiratory diseases, hypertension, diabetes mellitus, and chronic kidney diseases, are at a higher risk for severe illness. They have a higher risk of mortality than younger, or otherwise healthier, individuals. The main symptoms of COVID-19 include fever, coughing, shortness of breath, difficulty in breathing, fatigue, chills, sometimes with shaking, body aches, headache, and sore throat, loss of smell or taste, nausea, diarrhea. The virus can lead to pneumonia, respiratory failure, septic shock, and death. Many COVID-19 complications may be caused by a condition known as cytokine release syndrome or a cytokine storm which results into sudden respiratory collapse [9-11].

Frontline Health Care Workers (F-HCWs), including doctors, nurses, and paramedics, are prone to get infected [12,13]. India reported 87,176 contaminations and 573 deaths among F-HCWs by August 29, 2020. However, there still exists a lack of official data reported by the responsible bodies.

A lack of awareness and poor understanding of the disease among medical personnel may result in worsening of the situation. As a backbone of medical system, resident doctors are facing dual challenges: Keeping themselves safe from the virus and taking a good care of

COVID-19 patients under their care. Personal Protective Equipment (PPE), proper handwashing, and hand hygiene are critical in decreasing the transmission and risk of infection of COVID-19 in hospitals. Therefore, adequate training, knowledge, and resources are necessary to prevent hospital-acquired infections due to cross-contamination to other patients who receive care in these departments [14,15].

To serve the purpose, resident doctors are supposed to have sufficient and up to date knowledge regarding COVID-19. The study was conducted to assess knowledge and awareness of COVID-19 among resident doctors of Civil Hospital, Ahmedabad.

METHODS

Study design

It was a cross sectional, questionnaire-based online study carried out over a period of 2 months: November and December, 2020.

Setting and participants

Study was conducted at B.J. Medical College and Civil Hospital, Ahmedabad among resident doctors of pre-clinical, para-clinical and clinical departments. All resident Doctors involving 1st, 2nd and 3rd year from all the department of Civil Hospital, Ahmedabad were included. Participation in the survey was on voluntary basis only.

Data collection and management

An online google form containing 20 multiple choice questions based

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on modules prepared by senior doctors/nurses and HODs from civil hospital, Ahmedabad and GMERS hospital, Gandhinagar based on official guidelines from ICMR/MOHFW/WHO/CDC which is available on COVID-19.plexusmd.com was sent via message, email or whatsapp. It was intended to cover epidemiology, clinical features, diagnosis, treatment and preventive measures including biomedical waste management of COVID-19.

To participate in the survey each participant had to fill initial of name (i.e. RJ for Raj Joshi), year of resident ship, gender and consent to participate in the survey with mandatory 20 multiple choice questions which had only one correct response. After completion of 20 questions, each participant was shown the correct responses. Confidentiality of each participant was maintained strictly. None of the participant's

personal details has been disclosed to any person and/or authority. Only the responses collected were used for analysis of the study.

Ethical approval

Investigator had obtained ethical clearance from the Dissertation Review Board (DRB) of B.J. Medical College and Civil Hospital, Ahmedabad after submission of protocol of the study.

RESULTS

Out of about 800 resident doctors who were contacted for the study, only 228 were participated (Response rate: 28.35%).

Summarizes the characteristics of the study population (Figure 1) and (Table 1).

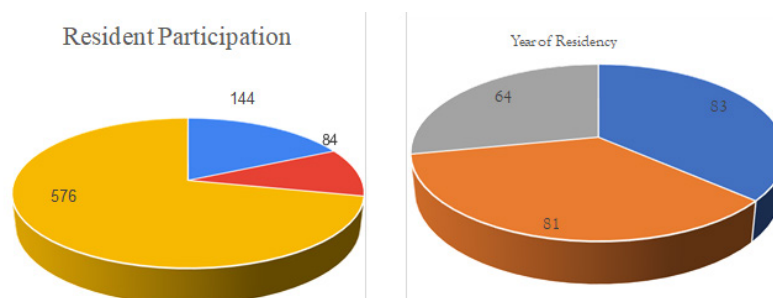


Figure 1: Characteristics of study population.
Note: () Male; () Female; () Not participated;
 () 1st year; () 2nd year; () 3rd year;

Table 1: Percentage of correct response for each question.

No.	Questions	Responses (%)			
		Overall n=228	1st Year	2nd Year	3rd year
Epidemiology					
1	All are the modes of Covid-19 transmission except?	93.4	89.2	92.6	100
2	According to National Centre for Disease Control (NCDC), Quarantine is?	87.4	76.1	93.9	95
3	What is the estimated serial interval of COVID -19 virus?	59.3	45.2	63.4	70.9
4	How long COVID virus live in the air?	76.5	60.7	84.1	85.4
Diagnosis					
5	Which test do we prefer in COVID-19 testing?	97.3	94	98.7	98.3
6	Who are the ideal candidates for the COVID-19 testing?	90.3	84.1	93.9	93.5
7	What can be ideal time of diagnosis of COVID-19 infection?	62.8	54.7	58.5	77.4
8	Which of the following procedure give the best result in Corona testing?	63.3	44	67	83.8
Clinical features					
9	CBC is done in corona positive patients to see	78.8	67.8	79.2	90.3
10	Infection spreads when a contaminated hand touches which part of the body?	92.9	85.7	93.9	98.3
11	Where does virus bind in respiratory tract?	60.2	42.8	69.5	69.3
12	What is the size of droplet in airborne transmission?	78.8	70.2	75.6	93.5
Preventive measures					
13	A bottle of specimen has labelled UN 2814. Material from it can cause hazard to whom of the following?	62.8	47.6	65.8	77.4

14	While wearing a surgical mask its true to ensure that it is safe?	87.2	83.3	87.8	88.7
15	N-95 mask protects against?	67.3	59.5	76.8	62.9
16	N-95 respiratory mask is disposed in which colour biomedical waste bag?	48.2	40.4	37.8	70.9
Treatment					
17	In which posture mechanical ventilation is advised in case of ARDS?	69.1	52.3	78	79
18	If the patient of Covid-19 is present with mild disease with co-morbid conditions, treat as...?	47.8	40.4	47.5	56.4
19	When patient of Covid-19 should be ideally discharged?	86.3	71.4	93	93.5
20	When N-95 mask should be used?	66.8	59.5	59.7	83.8

The mean knowledge score is 14.66 out of maximum of 20 points. Average score gained by the 1st year resident doctors was 13, 2nd year residents was 15 and 3rd year residents was 17. Most of the residents were aware about diagnostic test of COVID-19 (77.8%) while least correct response was for category of COVID-19 disease and disposal of N-95

mask. The most correct response was 97.8% for preferred diagnostic test for COVID-19 which is RT-PCR while the least correct response was 47.8% for category of COVID-19 disease. The overall knowledge regarding epidemiology is 79.2%, clinical features and complications is 69.9%, treatment of COVID-19 is 77.3%, preventive measures is 66.46% and about diagnosis of COVID-19 is 82.4% (Figures 2 and 3).

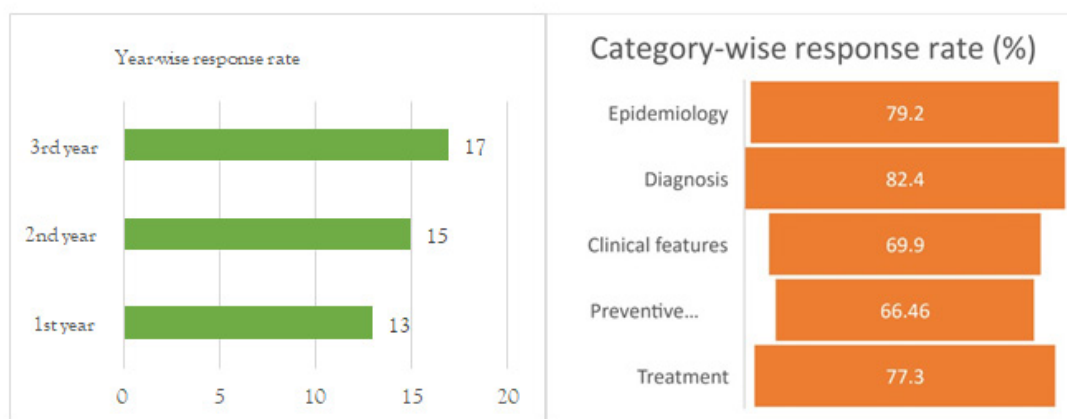


Figure 2: Relation between year of residency and average score gained (out of 20) And overall category-wise response rate (%).

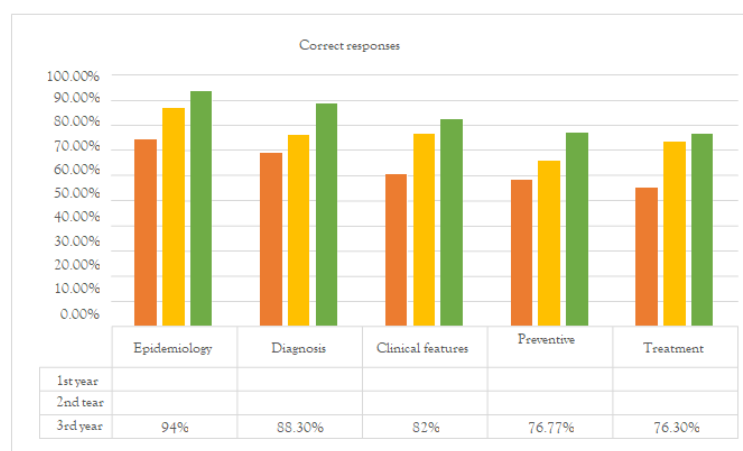


Figure 3: Relation between correct responses for each category and year of residency.
Note: () 1st year; () 2nd year; () 3rd year;

DISCUSSION

At present, we are facing increasing no. of morbidity and mortality due to COVID-19 which results into great burden to health care system. As health care professional, especially resident doctors who are working as Front-Line Health Care Worker (FLHCW) in COVID hospitals, they have always been at risk of infection to themselves as well as spread of COVID-19 to others.

So, it is very important to have up to date knowledge about COVID-19. To serve the purpose, resident doctors were instructed to watch modules prepared by senior faculty members of B. J. Medical College & GMERS, Gandhinagar which is available on COVID-19.plexusmd.com.

During their duty at COVID hospital, resident doctors from clinical and non-clinical departments were assigned as 'ward in charge' who work in collaboration with intern doctors, medical officers and nursing staff so we have not discriminated their scoring among clinical and non-clinical residents.

It is a web based cross-sectional study conducted among resident doctors of civil hospital, Ahmedabad which intended to cover epidemiology, diagnosis, clinical features, preventive measures with biomedical waste management and treatment of COVID-19. About 800 resident doctors were contacted by email, message or WhatsApp for the study, out of those only 228 participated in the study (response rate: 28.35%).

The study shows overall knowledge score was higher in 3rd year resident doctors than the junior doctors.

Epidemiology

Average score for modes of transmission of COVID-19 in our study is 93.4% as compare to 92.1% in KAP study conducted in Sierra Leone, Africa [16]. Less participants were aware about quarantine in our survey (87.4%) as compare to KAP study conducted among health care worker in Nigeria (96.5%) [17]. They also seem confused about survival of COVID-19 virus in air. The 3rd year resident doctors had more clear idea about quarantine and serial interval of COVID-19. As poor knowledge regarding epidemiology of COVID-19 may result into increased risk of disease transmission, as a medical professional, one should be aware of it.

Diagnosis

Ideal test for diagnosis of COVID-19 is RT-PCR which can be best detected with sample collected by Broncho-Alveolar Lavage (BAL). The participants were aware about who are ideal candidates for COVID-19 diagnosis but they seemed confused regarding ideal time for diagnosis of COVID-19. Screening and diagnostic tests are only tools to detect new cases of COVID-19 in society which just not help for contact tracing but also to reduce morbidity and mortality in current pandemic situation.

Clinical features

About 92.9% participants of our study had knowledge that infection spread when contaminated hands touches face which is low as compare to 97.5% in KAP study conducted in South Africa [16]. Disease spread can occur with airborne transmission of droplet size <5 micron and by this route, virus directly binds to type II pneumocytes in respiratory tract. Most of the participants were not aware about it. Clinical condition of the patient also correlates with blood investigations (CBC, CRP, Liver and renal function tests, IL-6, LDH, S. ferritin etc.) and imaging study

(CT-scan & X-ray) which helps to treat patients.

Preventive measures

87.2% participants were aware about correct way of wearing surgical mask which is higher than that of KAP study conducted in Pakistan (56.4%) [17]. Most of the residents knew about how to wear N-95 mask and its benefits against airborne transmission but most of them seem confused about disposal of N-95 mask. As medical professional, resident doctors should know preventive measures against COVID-19 and biomedical waste management.

Treatment

As treatment guidelines changing day by day, there is no any standard treatment protocol for COVID-19. But guidelines for usage of N-95 mask, prone position for better ventilation and discharge of COVID-19 patients remains same. 66.8% participants from our study were aware about usage of N-95 mask in aerosol generating procedures as compare to 82.2% in KAP study conducted in South Africa [16].

CONCLUSION

As the global threat of COVID-19 continues to emerge, it is important to have the knowledge and awareness among resident doctors. The majority of participants in our study showed adequate knowledge of COVID-19 infection, 1st year resident doctors need further improvement. Though our study demonstrated positive outcome, it is necessary to conduct educational interventions like online lectures, seminars and continuous educational program which are useful to provide resident doctors up to date and proper knowledge regarding COVID-19.

LIMITATIONS

We cannot generalize the result of the study for the resident doctors of Civil Hospital, Ahmedabad as the response rate for participation is low (28.35%). With respect to an acceptable knowledge score, it is not clear-cut as to what would be appropriate cut off score particularly with clinical and non-clinical resident doctors involved in our study.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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REFERENCES

1. Perlman S, Netland J. Coronaviruses post-sars: Update on replication and pathogenesis. *Nat Rev Microbiology*. 2009;7:439–450.
2. Shi Y, Wang J, Yang Y, et al. Knowledge and attitudes of medical staff in chinese psychiatric hospitals regarding COVID19. *Brain Behav Immun Health*. 2020;4:100064.
3. Sohrabi C, Alsafi Z, O'Neill N, et al. World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19). *Int J Surg*. 2020;76:71–76.
4. Guo Y-R, Cao Q-D, Hong Z-S, et al. The origin, transmission and clinical therapies on coronavirus disease 2019 (COVID-19) outbreak—An update on the status. *Mil Med Res*. 2020;7:11.
5. chan jfw, yuan s, kok kh, et al. a familial cluster of pneumonia associated with the 2019 Novel coronavirus indicating person-to-person transmission: A study of a family cluster. *Lancet*. 2020;395:514–523.

6. Wang D, Hu B, Hu C, et al. Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus-infected pneumonia in Wuhan, China. *JAMA*. 2020;323:1061–1069.
7. Chen N, Zhou M, Dong X, et al. Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: A Descriptive Study. *Lancet*. 2020;395:507–513.
8. Bajema KL, Oster AM, McGovern OL, et al. Persons evaluated for 2019 novel coronavirus-United States, January 2020. *Morb Mortal Wkly Rep*. 2020;69:166–170.
9. Zhou F, Yu T, Du R, et al. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: A retrospective cohort study. *Lancet*. 2020;395:1054–1062.
10. Wu Z, McGoogan JM. Characteristics of and important lessons from the Coronavirus Disease 2019 (COVID-19) outbreak in China: Summary of a report of 72,314 cases from the chinese center for disease control and prevention. *JAMA*. 2020;323: 1239–1242.
11. Nguyen LH, Drew DA, Graham MS, et al. Risk of COVID-19 among frontline healthcare workers and the general community: A prospective cohort study. *Lancet Public Health*. 2020;5:475–483.
12. Munoz-Price LS, Bowdle A, Johnston BL et al. Infection Prevention in the operating room anesthesia work area. *Infect Control Hosp Epidemiol*. 2019;40:1–17.
13. Khan Z, Karatas Y. COVID-19 in turkey: An urgent need for the implementation of preparedness and response Strategies. *Health Sci Rep*. 2020;3:153.
14. Kanu S, James PB, Bah A, et al. Healthcare workers knowledge, attitude, practice and perceived health facility preparedness regarding COVID- 19 in Sierra Leone. *J Multidisciplinary Healthcare*. 2021;14:67-80.
15. Ejeh FE, Saidu AS, Owoicho S, et al. Knowledge, Attitude, and practice among healthcare workers towards COVID-19 outbreak in Nigeria. *Heliyon*. 2020;6(11):05557.
16. Moodley S, Zungu M, Malotle M, et al. A health worker knowledge, attitudes and practices survey of SARS-Cov-2 infection prevention and control in south africa. *BMC Infectious Diseases*. 2021;21(1):138.
17. Batheja K J, Katto MS, Siddiqui AA, et al. Knowledge, attitude, and practices of healthcare workers regarding the use of face mask to limit the spread of the New Coronavirus Disease (COVID-19). *Cureus*. 2020;20(4).