



KNOWLEDGE OF COVID-19 AMONG DOCTORS OF CENTRAL INDIA-A CROSS SECTIONAL STUDY FOR ASSESSING TRAINING FOR IMPROVEMENT.

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(ABSTRACT) **Introduction:** As India ranks second in the world population and geographically located close to China adds to the worries about COVID -19 in this country. Doctors' knowledge about the novel disease like COVID -19 has an important role to play in its control.

Objective: To study the knowledge about SARS COV-2 disease among doctors.

Materials and methods: A cross-sectional study was carried among doctors from a tertiary health care facility. An online questionnaire with questions on knowledge was used to collect data. Data analysis was done with SPSS. Appropriate statistical tests were applied to compare the pre test and post test.

Results: Correct knowledge regarding etiology, sample collection was present in more than 90% of the doctors. Post test had significantly better correct responses $P < 0.0001$.

Conclusions: The study participants' knowledge about SARS- COV 2 and COVID 19 improved after the training as obvious from Post test results.

KEYWORDS : COVID-19, SARS COV 2, Doctor, Knowledge, Awareness, India

INTRODUCTION:

Coronaviruses represent a major group of viruses which mostly affect human beings through zoonotic transmission. The Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a beta-coronavirus belonging to the family of Coronaviridae.¹ It causes the coronavirus disease 2019 (COVID 19) which is highly infectious, and its main clinical symptoms include fever, dry cough, fatigue, myalgia, and dyspnea.^{2,3} Most cases of COVID-19 are asymptomatic. Of the symptomatic cases, those with milder symptoms constitute the vast majority. These facts make the disease a relatively hidden one (submerged) and hence giving the clinical presentation an iceberg appearance with only few cases in the form of tip visible resulting in rapid spread at a global level.

COVID-19 has been declared as a public health emergency of international concern (PHEIC),⁴ and its epidemic curves are still on the rise.⁵ The number of confirmed cases over time globally as on 23 -05-20 is 51,05,881 with 3,33,446 deaths.⁶ As India ranks second in the world population and geographically located close to China adds to the worries about COVID -19 in this country. Initially India was placed comfortably out of in the list of infected nations by huge margin, however the cascade of events led to its rise to 27th position in April and currently has moved to the top 15 affected countries. The mortality rate is controlled at less than 3% right now, which is better than the approximately 5.5% mortality rate of world, but the model of spread is slowly moving towards an exponential trend which can lead to massive loss of lives and infrastructure.⁷

Knowledge of a disease may influence health care workers' (HCWs') attitudes and practices, and incorrect attitudes and practices directly increase the risk of infection.⁸ Doctors form the major part of the health care working force team by leading the team. Presently, no specific antiviral treatment or vaccine is available for use against COVID-19. Thus implementation of general preventive measures is the mainstay to control COVID-19.⁹ Under such circumstances doctors' knowledge about the novel disease like COVID -19 has an important role to play in its control.

Literature search revealed many studies on knowledge of HCWs¹⁰⁻¹² on COVID-19. But none such data is available specifically about doctors more so from India. With this background the present study was planned with the objective to assess the knowledge of the doctors about various aspects related to COVID-19 and also to assess the influence of training on it.

MATERIALS AND METHODS:

The present cross sectional study was carried out at a tertiary health care facility in Central India. Considering the fact that use of printed questionnaires might add to the risk of generation of fomites, an online survey was used. Approval was obtained from the Institutional Ethics Committee (IEC) regarding the study. Trainings related to COVID -19 were imparted to various HCWs including doctors. During each training due care was taken to maintain the social distance among the participants. The present survey was conducted as a part of one of such trainings. The data collection was done from 8th to 14th April 2020. Universal sampling method was applied. All the trainees i.e. junior resident (JR) doctors and medical faculty from different departments present on the training days that were willing and gave their consent for participation in the study were included as the study participants. An online survey form was prepared and link of the same as shared with the trainees through the whatsapp groups prepared for training purpose. They were apprised of the nature and purpose of the study. Doubts if any regarding filling the online survey forms were cleared. The questionnaire had questions on socio demographic characteristics of the participants and other questions related to etiology, clinical features, prevention and control of COVID-19. They were instructed to fill the pre test before training and post test was obtained after the training was over. Data was analysed with SPSS version 20.0 software. Means and percentage were calculated. Suitable statistical tests were applied to assess the relation of knowledge with certain characteristics and comparison between pre and post test results was made with the aid of Z test. Value of $p < 0.05$ was considered as statistically significant.

RESULTS:

For the COVID-19 related trainings on different days total 480 people had enrolled. The questionnaire link was shared with all of them. Of them 372 gave their consent to participate in the study and submitted the completely filled in pre and post test. Thus the response rate was 77.5%. The participants were the post graduate students i.e. JRs of all the three academic years, assistant and associate professors from various departments. The mean (\pm SD) age of the study participants was 34.23 ± 7.43 years. The other details of the characteristics of study participants are shown in table 1.

Table 1. Sociodemographic characteristics of the study participants

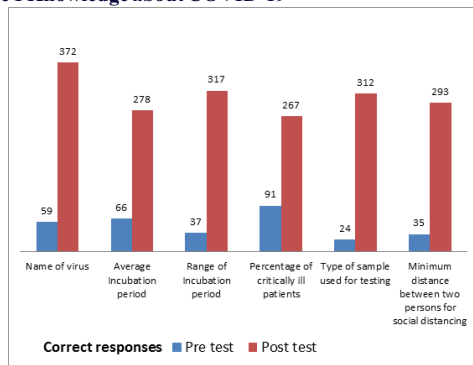
Characteristics	Number	Percentage
Gender		
Male	196	52.69
Female	176	47.31

Age in years			
	<30	138	37.10
	30-40	124	33.33
	40-50	99	26.61
	>50	11	2.96
Designation			
	JR	292	78.49
	Assistant Professor	46	12.37
	Associate Professor	34	9.14
Source of COVID-19 knowledge			
	Social media	174	46.77
	Television	87	23.39
	Journals	59	15.86
	Others	52	13.98

The participants were asked about source of their knowledge regarding COVID-19 before the training. Major source was social media in the form of whatsapp, face book etc. Other sources of the knowledge were either newspapers or discussion during various academic activities in the institute.

Figure 1 shows the knowledge related to COVID-19 before (pre test) and after (post test) the training. The nomenclature of the etiological agent was done as SARS COV-2 which was earlier known by various other names as new Coronavirus, novel COV, COV 2019, Wuhan virus etc. This is obvious from the figure by low correct response in pre test.

Figure 1 Knowledge about COVID-19



The correct knowledge that average incubation period is 5 days and range of incubation period is 2-14 days was also more during post test. The diagnosis requires the appropriate sample is sent for testing. The correct knowledge that nasopharyngeal or oro pharyngeal swab should be sent for testing was observed in more than 90 % of the respondents during post test. The general belief or myth in people is that in temperatures above 25 degree Celsius and with increased humidity COVID-19 is not transmitted. When asked about this 275(73.92%) correctly replied that the new corona virus can be transmitted in hot and humid climate also, 67(18.01%) participants believed hot climate will limit corona virus spread whereas remaining 30 (8.07%) were not sure about role of hot and humid climate on COVID-19.

Prevention is the most logical strategy that is being applied against COVID-19 at present. The knowledge regarding preventive aspects of COVID-19 is shown in table 2.

Table 2. Knowledge about prevention of COVID-19

Prevention of COVID-19	Correct response No. (%)		Value of Z	p value
	Pre test	Post test		
Used PPE should be discarded in which coloured bag (yellow)	89 (23.92)	105 (28.23)	1.3361	0.0901
Sequence of donning of PPE	30(8.06)	128 (34.40)	8.7849	<0.0001*
Minimum duration of contact of hand sanitizer for effective protection against COVID 19	138(37.10)	159(42.74)	1.5721	0.058
Drug used for chemoprophylaxis against COVID 19	239(64.25)	317(85.26)	6.5806	<0.0001*

Recommendation of concentration of alcohol in hand sanitizer	154(41.39)	295(79.30)	10.5675	<0.0001*
Duration of hand washing	72(19.36)	121(32.53)	4.0985	<0.0001*

*indicates significant p values

In response to the question that do you think that everybody should wear a mask 259(69.62%) opined no and remaining 113 (30.38%) expressed that mask should be worn.

DISCUSSION:

The one common matter of concern all over the world nowadays is COVID-19 pandemic: the havoc it has caused and when will it come under control. Each individual has a role to play in control of this pandemic. HCWs specifically doctors while treating the patients have to prevent themselves from getting infected and also their colleagues and family members. With limited resources to control this pandemic and still unclear epidemiology of the disease, in the Indian set up (or for that matter globally too) doctors ought to update themselves with the available information about COVID-19.

In the present study the most common source of knowledge on COVID-19 was reported as social media. The information provided through social media always doubts its authenticity. This should be cross checked from other sources too. Correct knowledge regarding etiological agent's name was present in all the doctors during post test. Similarly the correct knowledge about prevention was also observed in almost three-fourth doctors. For majority of the statements post test scores were significantly higher than pre test.

CONCLUSIONS:

COVID-19 being the burning topic of the present times doctors in this study were observed to have a substantial degree of knowledge about it. However certain gray areas in knowledge still exist that can be very effectively covered by specific guidance and training. The study concludes that training proved effective in improving the knowledge of the doctors as obvious from the post test scores.

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