



## COVID-19: AWARENESS AND ATTITUDE OF HEALTHCARE PROFESSIONALS AT A TERTIARY CARE CENTRE IN CENTRAL INDIA

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### ARTICLE INFO

#### Article History:

Received 06<sup>th</sup> October, 2020

Received in revised form 14<sup>th</sup>  
November, 2020

Accepted 23<sup>rd</sup> December, 2020

Published online 28<sup>th</sup> January, 2021

#### Key words:

Awareness, attitude, healthcare professionals, COVID 19

### ABSTRACT

**Background:** Rapid and extensive spread of the ongoing COVID-19 pandemic has become a major cause of concern for healthcare professionals (HCP), who have a crucial role to play in identification, assessment, reporting and management of cases of COVID-19. A poor understanding of the disease among healthcare workers may result in delay in identification and treatment and in addition rapid spread of infection. Hence the present study was conducted to assess the current level of awareness and attitude of healthcare professionals regarding COVID-19.

**Materials and methods:** Present cross sectional study was conducted in 1283 respondents at a tertiary-care hospital and teaching institute using an online semi-structured questionnaire. Questionnaire comprised of demographic characteristics, questions regarding the knowledge of COVID-19 and attitude followed by lifestyle modifications practised by HCP. Statistical analysis was done using open Epi info.

**Results:** The principal source of information about COVID-19 was social media. The overall awareness for all subgroups was good. However, a higher percentage of correct responses were obtained from postgraduate medical students and interns as compared to the nurses. The attitude of healthcare professionals towards COVID 19 appeared to be fairly positive. Health care professionals had implemented lifestyle modifications like improvement in personal hygiene, consumption of fruits, vitamin supplements, herbal tonics and practising pranayam, yoga, and meditation to boost their immunity.

**Conclusion:** Healthcare professionals have fairly good awareness of COVID-19 and positive attitude. However certain gaps in their knowledge need to be addressed by conducting periodic educational interventions and training programs.

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### INTRODUCTION

#### Background

Corona virus, a humanitarian emergency, which started in Wuhan in China in early December 2019 was declared as Public Health Emergency of International Concern (PHEIC) on 30th of January 2020, and finally a pandemic on 11th March 2020 by World Health Organisation.<sup>[1]</sup> Rapid and extensive spread of ongoing pandemic has become a major cause of concern for healthcare professionals (HCP).<sup>[2]</sup> COVID-19 has impacted everyone's life and livelihood in one way or the other. This pandemic has influenced global health, economy, lifestyle, international harmony, along with spread of misinformation and panic in the world. It has also brought the importance of infection prevention and control practices to the forefront. Individual response to measures taken to control the rapid spread of this disease depend on their knowledge and perceptions.<sup>[3]</sup> Health care professionals have a crucial role to play in identification, assessment, reporting and management of cases of COVID-19. A poor understanding of the disease among healthcare workers may result in delay in identification

and treatment and in addition rapid spread of infection.<sup>[4]</sup> Being highly vulnerable to this infection, it is imperative for the HCPs to update themselves about the knowledge regarding COVID-19 to curb this pandemic.

Hence this study was conducted to assess the present level of awareness and attitude of healthcare professionals regarding COVID-19.

### MATERIALS & METHODS

Present cross sectional study was conducted at a tertiary-care institute in Central India, using an online semi-structured questionnaire. Demographic characteristics of participants such as age, gender, profession were included in first section of questionnaire. Second section included questions regarding the knowledge of COVID-19 and its source of information, third section comprised of questions about attitude of respondents regarding COVID-19 followed by lifestyle modifications implemented by them in the COVID era. Link of questionnaire was shared through whatsapp to potential respondents. Of the 1600 potential respondents, 1283

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completed the survey giving a response rate of 80.19 %.The participants were apprised of nature and purpose of the study and assured of anonymity and full confidentiality. Consent was obtained from the participants. Ethical clearance was obtained from the Institutional ethics committee. Data was analysed using open Epi Info.

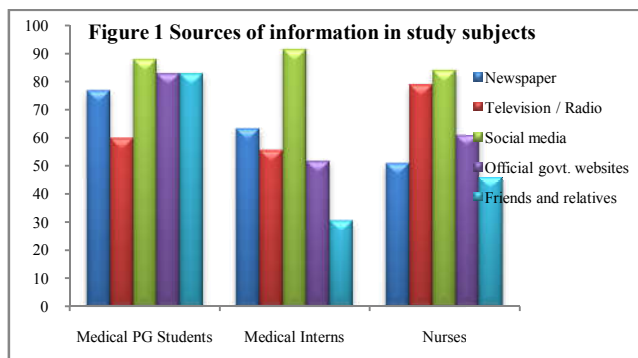
**RESULTS**

The socio-demographic characteristics of the participants are presented in table 1.Of the 1283 healthcare professionals who completed the study questionnaire, maximum 372(28.99%) were from the age group of 26 - 30 years. Majority of the respondents were females 862(67.19%). The study participants included 55.49% nurses, 32.35% medical postgraduate students and 12.16% medical interns.

**Table 1** Demographic profile of the respondents

S.No.	Demographic Characteristic	Sub-Group	No.	%
1	Age group	20 - 25 yrs	292	22.76
		26 - 30 yrs	372	28.99
		31 - 35 yrs	171	13.33
		36 - 40 yrs	225	17.54
		>40 yrs	223	17.38
		Total	1283	100
2	Gender	Male	421	32.81
		Female	862	67.19
		Total	1283	100
3	Profession	Medical postgraduate students	415	32.35
		Medical Interns	156	12.16
		Nurses	712	55.49
		Total	1283	100

The source of information regarding COVID-19 among the participants is shown in figure1.



The principal source of information about COVID-19 was social media (86.20%), television and official government websites were other important sources of information for 69.99 % and 66.95% respondents respectively. Newspaper and discussion with friends and relatives were the less commonly cited ones.

Table 2, shows the correct responses of healthcare professionals regarding knowledge of COVID 19. There was a great deal of variability in the knowledge of healthcare professionals. A higher percentage of correct responses were obtained from postgraduate medical students and interns as compared to the nurses.

Majority of the subjects were aware about the range of incubation period, important routes of transmission and main symptoms. However COVID-19 patients can present with gastrointestinal symptoms and neurological symptoms was known to only 59.78 % and 46.37% respondents respectively. Persons with co morbidities are at higher risk of contracting the disease was known to 88.66 % participants.

Awareness of healthcare professionals regarding general preventive measures was fairly good. More than 90% of the respondents were well informed about the distance to be maintained for physical distancing. Overall 77.16% respondents were knowledgeable about the duration for hand washing with soap and water or sanitiser but only 62.2% were aware of the recommended concentration of alcohol in hand sanitizers. Most of the respondents (94.00%) were aware of various personal protective equipments but only 68.98% knew the right sequence of donning and doffing PPE.

Relatively few respondents were informed about drugs used for treatment and the stages of COVID 19 pandemic. Containment and surveillance of hot spots can help in controlling the epidemic was affirmed by 55.91% respondents.

Table 3 displays attitude of health care professionals. Majority (88.00%) of the health care professionals were willing to provide care for COVID 19 patients. Approximately three fourth of them were worried that they or their family members might get infected. Almost all participants agreed that transmission of COVID-19 could be prevented by following universal precautions like hand hygiene, physical distancing and appropriate use of personal protective equipments. Willingness to take COVID 19 vaccine once it becomes available was noted in 45.75% respondents.

**Table 2** Knowledge of healthcare professionals regarding prevention and control of COVID 19

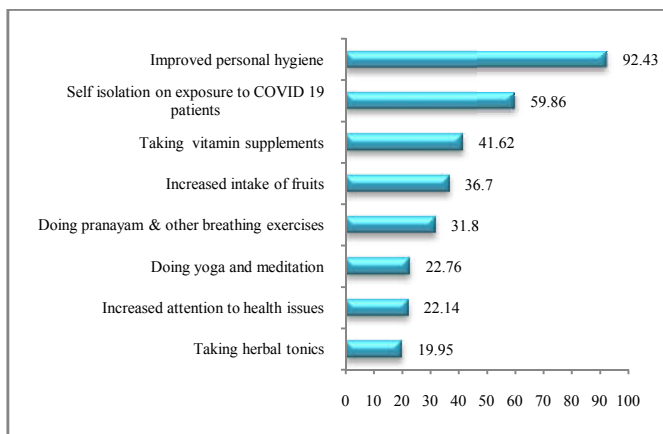
S.No.	Questions	Medical postgraduate students (n = 415)		Medical Interns (n = 156)		Nurses (n = 712)		Total (N = 1283)	
		No	%	No	%	No	%	No	%
1	Range of Incubation period	385	92.77	131	83.97	576	80.9	1092	85.11
2	Transmission by contact with contaminated objects	398	95.9	142	91.02	581	81.6	1121	87.37
3	Transmission by aerosols	379	91.32	117	75	402	56.46	898	69.99
4	Asymptomatic carriers can spread infection	392	94.46	137	87.82	473	66.43	1002	78.09
5	Main symptoms	402	96.87	133	85.26	579	81.32	1114	86.83
6	Can present as GI symptoms	394	94.94	102	65.38	271	38.06	767	59.78
7	Can present as neurological symptoms	329	79.27	74	47.43	192	26.96	595	46.37
8	General preventive measures	414	99.76	148	94.87	653	91.71	1215	94.7
9	Distance to be maintained for physical distancing	409	98.55	146	93.59	616	86.52	1171	91.27
10	Duration for hand washing with soap and water	376	90.6	119	76.28	495	69.52	990	77.16
11	Recommended concentration of alcohol in hand sanitizers	304	73.25	96	61.54	398	55.9	798	62.20
12	Distance to be kept between two beds in isolation ward	312	75.18	104	66.67	484	67.98	900	70.15
13	PPE to be used by Health care workers	405	97.59	139	89.17	662	92.98	1206	94.00
14	The sequence of Donning & Doffing PPE	313	75.42	83	53.2	489	68.68	885	68.98
15	Case fatality rate in India	291	70.12	74	47.44	185	25.98	550	42.86
16	Sample collected for testing	413	99.52	154	98.72	611	85.81	1178	91.82
17	Colour of bag used for disposing COVID 19 waste	368	88.67	88	56.41	619	86.94	1075	83.79
18	Drugs used for treatment	333	80.24	117	75	316	44.38	766	59.70

**Table 3** Attitude of health care professionals

SN	Statement	Positive Response	
		No.	%
1	Are you willing to provide care for COVID 19 patients?	1129	88.00
2	Are you worried that you or your family members may get infected?	974	75.92
3	Transmission of COVID-19 can be prevented by hand hygiene, physical distancing and appropriate use of personal protective equipments.	1279	99.68
4	If a COVID 19 vaccine was available, would you have it?	587	45.75
5	SARS CoV2 could be a biological weapon	389	30.32
6	COVID 19 will persist as an endemic infection in the community	412	32.11
7	Are you hopeful of gaining victory over this pandemic?	590	45.98
8	Do you think the available resources are sufficient ?	439	34.21
9	Health care professionals must keep updating themselves of all information about the virus.	1268	98.83

SARS CoV2 could be a biological weapon was perceived by 30.32% participants. Albeit majority of the respondents felt that the future of the pandemic was unpredictable there were still 32.11% of the study subjects who perceived that COVID 19 pandemic may subside but it will persist as an endemic infection in the community.

Although 45.98% were hopeful of gaining victory over the situation only 34.21% felt that the available resources were enough for this. More than 98% of the respondents felt that health care professionals must keep updating themselves of all information about the virus. Only 57.05% were satisfied with the strategies of the government and health authorities for controlling the pandemic.



**Table 5** Life style modifications by health care professionals

Table 4 shows the life style modifications implemented in this pandemic situation by the health care professionals .Majority (94.43%) of the health care professionals affirmed an improvement in personal hygiene. Approximately a third were consuming fruits, vitamin supplements, herbal tonics and doing pranayam, yoga and meditation to boost their immunity.

**DISCUSSION**

The ongoing Novel Coronavirus Disease pandemic has adversely impacted mankind globally and India is no exception. It has become a major cause of concern for the healthcare professionals who are overburdened with enormous work load of containing and curtailing this highly contagious disease and are also vulnerable to this infection. Effective infection prevention and control practices including use of personal protective equipments is crucial for their safety and depends on their knowledge and attitude regarding the same.<sup>[6]</sup>

So it is imperative for the HCPs to keep themselves updated with the everchanging information of this Novel Coronavirus pandemic. With this background, the present study was undertaken to assess the level of awareness and attitude of healthcare professionals about COVID-19 in Central India.

In the present study, the major source of information about COVID-19 was social media followed by television and official government websites. Similar to our findings the main sources of COVID-19 information were social media and the Ministry of Health website in the study of Huynh Giao *et al.*<sup>[7]</sup> Numerous other authors in their studies on MERS also reported that social media and television were the chief sources of information.<sup>[8-11]</sup>

Unfortunately along with the COVID-19 pandemic there is a global epidemic of misinformation, termed as “Infodemic” by the World Health Organization Director General, Dr Tedros Adhanom Ghebreyesus.<sup>[12]</sup> Obtaining information from authentic sources is pivotal for disseminating unbiased and reliable data about the emerging COVID-19 infection and is essential for HCWs’ preparedness and response. In this regard, HCWs should carefully evaluate COVID-19-related information and should use scientific and authentic content as information sources.<sup>[13, 14]</sup>

There was variability in the knowledge of HCPs, a higher percentage of correct responses were obtained from postgraduate medical students and interns as compared to the nurses. This could be because the professionals regularly updated themselves. Limited access of information to the nurses along with their busy working schedule may be reason for their lack of knowledge. Similar findings were noted by G Paul *et al.*<sup>[3]</sup>

Majority of the subjects were aware about the range of incubation period, important routes of transmission and main symptoms. However COVID-19 patients can also present with gastrointestinal symptoms and neurological symptoms was known to approximately half the respondents. Current findings of good knowledge among HCPs are in line with findings of Giao *et al*<sup>[7]</sup> and Shi *et al.*<sup>[15]</sup> Awareness of healthcare professionals regarding general preventive measures was fairly good. More than 90% of the respondents were well informed about the distance to be maintained for physical distancing. Overall 77.16% respondents were knowledgeable about the duration for hand washing with soap and water or sanitiser but only 62.20% were aware of the recommended concentration of alcohol in hand sanitizers. Most of the respondents (94%) were aware of various personal protective equipments but only 68.98% knew the right sequence of donning and doffing PPE. Apart from being aware of the required PPE, the knowledge of correct sequence of “donning and doffing” of PPE is

imperative. Similar findings were reported by another author.<sup>[16]</sup> However on being questioned about drugs used for treatment, around 40% respondents were unable to identify correct responses. Khan *et al.* in their study about MERS reported 40% of participants had no knowledge of the treatment of MERS<sup>[17]</sup>. As reported by another study relatively few respondents were aware about drugs used for treatment and the stages of COVID 19 pandemic.<sup>[16]</sup>

Majority (88.66%) of HCWs were aware that people with comorbidities are at a higher risk of infection and mortality. These results are in concordance with findings of Huynh Giao *et al.*<sup>[7]</sup>

Regarding the attitude, most of the health care professionals were willing to provide care for COVID 19 patients. Approximately three quarters were worried that either they or their family members might get infected. Almost half of the respondents were willing to take COVID 19 vaccine once it becomes available. The devastating consequences of the COVID-19 pandemic for individuals, families, communities, countries, and the world as a whole offers vivid proof that microbes could be just as destructive and terrifying- if not more so - than the use of nuclear weapons.<sup>[18]</sup> The current coronavirus crisis is an almost ideal breeding ground for conspiracy thinking,<sup>[19]</sup> as there is no easily comprehensible mechanistic explanation of the disease, it is an event of massive scale, it affects people's life globally and leaves them with lots of uncertainty.<sup>[20]</sup> SARS CoV2 could be a biological weapon was perceived by one third participants. Most of the respondents perceived that the future of this pandemic was unforeseeable but a few were of the opinion that it will persist as an endemic infection in the community. Almost all respondents were of the opinion that health care professionals must keep updating themselves of all information about the virus. It was heartening to note that more than half of the study subjects demonstrated complete trust in the administrative sector were satisfied with the strategies of the government and health authorities for controlling the pandemic. Similar findings were reported by G Paul *et al.*

The habits and life styles of people have undergone a radical change in this pandemic situation. COVID 19 has brought about an improvement in personal hygiene was reported by most of the health care professionals. Lifestyle modifications practiced by study participants to boost their immunity were consumption of fruits, vitamin supplements, herbal tonics followed by pranayam, yoga and meditation. These findings are in concordance with findings of G Paul *et al.*<sup>[3]</sup>

This study attempted to assess the current knowledge and attitude of HCPs, which is critical for provision of optimal healthcare and controlling this pandemic. The study findings may be helpful in designing training programmes to keep them informed about the recent guidelines.

## CONCLUSION

Awareness of healthcare professionals about COVID-19 was found to be fairly good and their attitude towards this pandemic was positive. A higher percentage of correct responses regarding COVID-19 were obtained from postgraduate medical students and interns as compared to the nurses. However certain deficiencies identified in their knowledge need to be addressed. Educational interventions and training programs should be conducted periodically to

keep the healthcare professionals abreast with the current knowledge about COVID 19.

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**How to cite this article:**

Sonali S. Patil *et al* (2021) 'COVID-19: Awareness and Attitude of Healthcare Professionals At A Tertiary Care Centre In Central India', *International Journal of Current Medical and Pharmaceutical Research*, 07(01), pp 5472-5476.

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