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# To Assess the Attitude and COVID-19 Preparedness Among Postgraduate Medical Trainees in a Tertiary Care Hospital in Central India

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## ABSTRACT

**Introduction:** During this COVID-19 pandemic, post-graduate trainees being pillars of the healthcare system are subjected to a greater risk of acquiring the infection during their duty hours. It was warranted to assess their attitude and COVID-19 preparedness.

**Methods:** A cross-sectional survey was carried out among the working post-graduate trainees in ShyamShah Medical College and associated hospitals at Rewa, Madhya Pradesh, India in the month of September 2020. A self-administered, anonymous questionnaire comprising of 30 close-ended questions was circulated to gather the relevant information. A total of 200 PG students submitted their responses, out of which 111 complete responses were included in the statistical analysis.

**Results:** Male: female participant ratio was 1.13:1. A total of 72% of participants knew their present COVID-19 status, whether positive (n=13) or negative (n=67). 4 of them were suffering from chronic diseases like asthma. 30-41% of them were taking COVID-19 prophylaxis like hydroxychloroquine (HCQ), vitamin-C, zinc, ayurvedic medicine etc. All participants who were COVID-19 positive thought that they were not well prepared against the virus during their duty hours while 44.1% of participants were anxious about the disease. A significant number of participants (91%) believed that even with all the preparedness it (Corona) may happen to anyone.

**Conclusion:** In the present study, less than 6% of postgraduate trainees were found to have a positive attitude and satisfactory preparedness for self-protection during this critical period.

**Key Words:** Attitude, Central India, COVID-19, Medical students, Post-graduate trainees, Preparedness

## INTRODUCTION

In December 2019, multiple cases of pneumonia of unknown aetiology were identified in China Wuhan city. World Health Organization (WHO) named it COVID-19 and declared it as a pandemic on 11<sup>th</sup> March 2020.<sup>1-5</sup> COVID-19 has so far affected the general population including a large number of health professionals around the world.<sup>6</sup> Since the postgraduate trainees are one of the first hands of contact in the health care system, they are prone to greater risk of acquiring the infection during their duty hours. The emergence of COVID-19 made everyone reach out to Health care facilities and get prepared with their own best measures for the impact of the pandemic. Even medical fraternity around the world was changing and updating their protocols day today. As COVID-19 is a highly infec-

tious disease spreading through asymptomatic contact, it has been diagnosed in every age-groups worldwide.<sup>7</sup>With time passing by, the attitude towards the disease has been changed among people. The preparedness for the infection has also varied from person to person. Even with maximum available knowledge and precautions are followed as per protocols, till September 2020, 2238 doctors were infected with the COVID-19 disease and of them, 382 lost their lives in India. Whereas in our college, 67 healthcare workers including 29 postgraduate medical students were diagnosed COVID-19positive with no mortality till the date of the present study. Hence this survey was warranted to assess the attitude and COVID-19 preparedness among postgraduate medical students in our tertiary care hospital in central India.

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## MATERIALS AND METHODS

This prospective, cross-sectional study was carried out in September 2020 among postgraduate trainees in Shyam Shah Medical College and associated hospitals at Rewa, Madhyapradesh in India. A self-administered, anonymous, questionnaire comprising of 30 close-ended questions was circulated to gather the relevant information. A total of 200 PG students submitted a response, out of which 111 complete responses were included in the statistical analysis. The study proposal was addressed to the institutional ethical committee and ethical clearance was obtained. During the process, all the information related to participants were kept confidential. All the data was collected from various departments of our institute.

At the end of the study, the data was analysed statistically by using SPSS ver 22.0. A p-value of <0.05 was considered for statistical significance. Categorical variables are shown as number and percentage. Qualitative data was analysed by using Pearson's Chi-square test.

## RESULTS

Out of 231 postgraduates working in our institute, we have received 200 questionnaires back. Only 111 questionnaires were found complete. 59 (53.1%) were male and 52(46.8) were female. Maximum participants were less than 30 years of age (n=101; 90.9%). Maximum participants were from medicine, ophthalmology and paediatrics (n= 71; 63.9%) and half of the participants (50.5%) were first-year trainees. A total of 72% of participants knew their COVID-19status, whether positive (n=13) or negative (n=67) (**Figure 1**). 4 of them were suffering from chronic diseases like asthma. The majority of postgraduates (n=84; 75.6%) were already exposed to working in the COVID-19environment. Only 4 participants were using full PPE kit during their working hours; whereas others used only masks, gloves and face shields. 80.1% of participants used N95 masks regularly. We found that n=53(47.7%) participants were not able to maintain social distance, n=75(67.5%) were not practising handwashing for 2 minutes, whereas n=40(36.03%) were not using sanitiser with 70% isopropyl alcohol regularly during their duty hours. It was also noted that n=46(41.4%), n=45(40.5%) and n=34(30.6%) participants were taking prophylaxis for COVID-19 routinely using hydroxychloroquine (HCQ), zinc and vitamin C and other like ayurvedic, homoeopathic measures respectively. 76(68.5%) participants believed that quarantine is not necessary after every individual exposure with COVID-19 cases; suggesting immediate resuming of their normal duties (Table I and II).

All participants who were COVID-19 positive thought that they were not well prepared against the virus during their duty hours while 44.1% of participants felt anxious about

the disease. A significant number of participants (91%) especially female postgraduate trainees (n=41; p <0.05) believed that even with all the preparedness it (Corona) may happen (Table III).

## DISCUSSION

Recently, COVID-19 observed as a major healthcare issue worldwide and its highly infectious nature forced proper training to carry out safe practice to reduce the spread of this virus to the working staff by using PPE kit and proper sterilization of gloves etc.<sup>8</sup> The present survey was therefore undertaken among postgraduates trainees in India to assess preparedness about COVID-19. Based on Items used for personal protection we have found that very few participants (<6%) have a positive attitude towards satisfactory preparedness for self-protection during these critical hours which may be because the majority of participants were first-year PGs who have very long duty hours. In contrast Arora et al. the majority (78.6%) of the participants had a positive attitude towards personnel protection against COVID-19.<sup>9</sup> In the present study, we found that there is no statistically significant difference in awareness among the male and female participants whereas in Putrino et al. males were more aware of the disease as compared to female participants.<sup>10</sup>

We found that the pandemic caused anxiety among only 44.1% of participants while Arora et al.84.2% of the respondent were conscious that COVID-19 is highly infective for which they are well prepared.<sup>9</sup>

In the present study, 91% felt that they might get infected despite all safety measures. Similarly, De Stefani et al.made 87% of the dentists believe that their job falls under the very high-risk category of exposure.<sup>11</sup> It is also following a study by Canetti et al. where the majority of the respondents believe that the risk of infection transmission is high in the dental practice.<sup>12</sup>In the present study we found that majority (80.1%) of medical postgraduates used N95 mask for their protection whereas proper handwashing along with N95 mask was used by 22.5% participants and among this 14.4% used 70% alcohol containing sanitiser and a very few participants (10.8%)used prophylactic pharmacotherapy along with the aforementioned. In contrast, nearly 85% of the dentists were well versed with the type of mask and were ready to use the N95 mask, especially when dealing with COVID-19 patients. In the present study, most of the participants agreed to wear an N95 respirator, a total of 35.8% felt that only fittest is sufficient to check the seal and 27.6% already knew that they should be properly trained to use it and make it comfortable.<sup>9</sup>

Maximum number i.e. 78.6% of the dentists in principle agree that wearing personal protective equipment like gloves, mask and goggles are effective to prevent transmis-

sion of COVID-19 as reported by Khader et al<sup>13</sup> were 92.9% of respondents felt the same. In the present study, only 29.7% of participants used gloves, masks and goggles in ICUs and wards during their duty hours.

## CONCLUSION

During this pandemic, post-graduate trainees act as pillars of the health care system tackling various cases including COVID-19 patients. Out of 231 working post-graduate medical students 94 of them had been posted in COVID-19 ICU and wards rotation wise whereas 29 PGs got the infection. And it was found that only less than 6% of participants were found to have a positive attitude towards satisfactory preparedness for self-protection during these critical hours. Whereas all participants who were COVID-19 positive thought that they were not well prepared against the virus during their duty hours and 44.1% of participants were anxious about the infection. A significant number of participants (91%) also believed that even with all the preparedness it (Corona) may happen to anyone. Hence we recommend all the working postgraduates irrespective of their working environment should carry a positive attitude and exercise better preparedness during their routine duty hours. It could be the only way to halt the spread among the healthcare workers.

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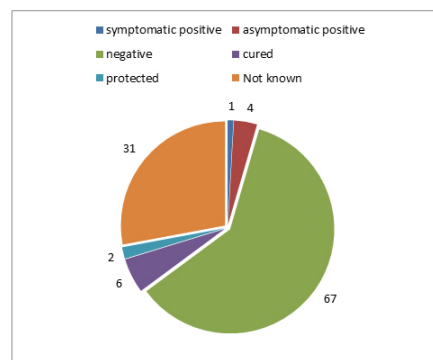


Figure 1: COVID-19 Status.

**Table I: Distributions of Demographic profile, COVID-19 preparedness and Attitude of the participants**

<b>A: Demographic profile</b>		
<b>Parameter</b>	<b>Distribution (n)</b>	<b>Percentage (%)</b>
Age(years)		
<25	21	18.9
26 to 30	80	72
31 to 35	10	9.1
Gender		
Male	59	53.1
Female	52	46.8
Post graduation year		
First year	56	50.5
Second year	39	35.1
Third year	16	14.4
Specializations:		
Medicine	20	18
Obstetrics	9	8.1
Ophthalmology	26	23.4
Orthopedics	3	2.7
Pathology	8	7.2
Pediatrics	25	22.5
Preventive and social medicine	1	0.9
Psychiatry	8	7.2
Surgery	11	9.9
Working environment		
COVID-19 Ward	4	3.6
nonCOVID-19 ward	27	24.3
Both	80	72.1
<b>B: COVID-19 preparedness</b>		
Type of PPE		
Mask	13	11.7
Mask and gloves	61	55
Mask face shield and gloves	33	29.7
Full PPE suit	4	3.6
Type of mask		
N95 with FFP2	17	15.3
N95 with 3M and NIOSH certified without valve	12	10.8
N95 with 3M and NIOSH certified with valve	41	36.9
N95 (no other specification known)	19	17.1
Half face piece reusable respirator	1	0.9
Full face piece reusable respirator	0	0
Surgical mask	15	13.5
Triple layered mask	4	3.6
Others	2	1.8
<b>C: Attitude of participants</b>		
Able to keep social distancing?		
All the time	11	9.9
Most of the time	47	42.3
Not sure	53	47.7
Hand washing for 2 minutes		
Yes	36	32.4
Yes but less than 2 minutes	68	61.3
No	7	6.3

Table I: (Continued)

A: Demographic profile		
Parameter	Distribution (n)	Percentage (%)
Using sanitizer containing 70% alcohol		
Yes	71	64
Using sanitizer but no idea about its composition	35	31.5
Not using sanitizer regularly	4	3.5
Others	1	1
Taking HCQ prophylaxis		
Yes	46	41.4
No	65	58.6
Taking Zinc prophylaxis		
Yes	45	40.5
No	66	59.5
Taking other prophylaxis		
Yes	34	30.6
No	77	69.4
Aerosol	3	2.7
Ayurvedic	16	14.4
Gargling	7	6.3
Homeopathy	1	0.9

Table II: Variables affecting COVID-19 status

	COVID-19 positive	COVID-19 negative	p value
OPD*			
Yes (both)	8	50	0.3335
No (IPD**/other)	5	17	
Environment			
COVID-19 ICU***	8	50	0.3335
Non COVID duty	5	17	
HCQ****			
Yes	4	27	0.5184
No	9	40	
Sex			
Male	7	31	0.6163
Female	6	36	
Enough prepared			
Yes	0	10	0.3025
No	13	57	
Age			
<30 years	13	58	0.3559
>30 years	0	9	
Co-morbidities			
Yes	1	3	0.8338
No	12	64	
Proper PPE*****			
Yes	0	3	1
No	13	64	
Pandemic causing anxiety			
Yes	1	26	0.0642
No	12	41	

\*OPD: Out Patient Department, \*\*IPD: In Patient Department, \*\*\*ICU: Intensive Care Unit, \*\*\*\*HCQ = hydroxychloroquine, \*\*\*\*\*PPE – Personal Protection Equipment

**Table III: Preparedness scoring based on Items used for personal protection**

Scores	Items	n	%
1	N95 mask	89	80
2	N95 mask+ proper hand washing	25	22.52
3	N95 mask+ proper hand washing + 70% isopropyl alcohol as sanitizer	16	14.41
4	N95 mask+ proper hand washing + 70% isopropyl alcohol as sanitizer + HCQ / vitamin C/ Zinc	12	10.81
5	N95 mask+ proper hand washing + 70% isopropyl alcohol as sanitizer + HCQ, vitamin C and Zinc +other prophylactic measures *	7	6.3
6	N95 mask+ proper hand washing + 70% isopropyl alcohol as sanitizer + HCQ, vitamin C and Zinc +other prophylactic measures * + proper PPE** kit	2	1.8

\*Other prophylactic measurements: Yoga, Ayurvedic Medications, Homeopathic Medications, home remedies, gargling, \*\*PPE: Personal Protective Equipment