

## ASSESSMENT OF BEST PRACTICES, KNOWLEDGE, ATTITUDE AND PERCEPTION OF POSTGRADUATES WORKING IN COVID ICU – A MULTI-CENTRE STUDY FROM SOUTH INDIA

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### Abstract

**Background:** The frontline defenders against the coronavirus disease 2019 (COVID-19) pandemic is healthcare workers (HCWs). Delays in diagnosis, poor infection control, and disease transmission can all be directly attributed to HCWs' weak knowledge and unfavourable attitudes. This study assessed postgraduate students' understanding, attitudes, and perceptions toward COVID-19. **Materials and Methods:** In South India, a descriptive cross-sectional study was conducted among postgraduate students at various teaching hospitals. A self-administered questionnaire gathered information during the first week of September 1 to 8 September 2020, when the pandemic peaked. **Results:** The participants' mean knowledge score was  $8.5 \pm 2.7$ , ranging from 7 to 10, and the mean correct answer rate was 88.4%. Almost 83.1% of the individuals in our study claimed to be terrified of contracting COVID-19, and 89.2% claimed they were more vulnerable to the infection than others. The participants most frequently accepted the following statements as reasons for their perceived fear of contracting COVID-19 infection: fear of infection spreading to their families (96.5%), the disease is highly contagious (91.74%), COVID-19 is a new disease with no vaccine or treatment currently available (58.6%), and the disease is fatal (62.1%). **Conclusion:** India is probably one of the few nations with a very low death rate of 10% due to the prompt provision of PPE, the stringent infection control methods, the frequent CME, and the awareness programmes.

## INTRODUCTION

The fast-spreading pandemic known as COVID-19 is caused by a novel human coronavirus called severe acute respiratory syndrome-coronavirus (SARS-COV-2), an enveloped single-stranded RNA virus formerly known as 2019-nCov.<sup>[1-3]</sup> When patients with viral pneumonia were treated in Wuhan, China, in December 2019, it was first reported to be the most important global health concern.<sup>[1]</sup>

Close contact (within approximately 6 feet), respiratory secretions from coughs and sneezes, or touching objects or surfaces exposed to the virus are all ways SARS-COV-2 is passed from one person to another. Old age and the prevalence of chronic illnesses have been highlighted as potential risk factors for severe disease and mortality.<sup>[4]</sup> During

the virus's 2–14 days of incubation, most patients (80%) exhibit mild symptoms that don't require medical treatment. A serious disease affected 20% of COVID-19 cases, including organ failure, sepsis, dyspnea, and septic shock, which can be fatal in 2% of instances.<sup>[1]</sup> Inadequate knowledge and incorrect attitudes among postgraduates working in ICU can directly impact infection control practices, poor management, and the spread of disease. This study evaluated postgraduate students' understanding, attitudes, and perceptions toward COVID-19.

## MATERIALS AND METHODS

In South India, a descriptive cross-sectional study was conducted among postgraduate students at various teaching hospitals. Data was gathered from September 1 to September 8, 2020, the height of the

pandemic, during the first week of September. The method for choosing participants was a convenience sampling one. Using EpiCalc-2000, the sample size was estimated based on the following assumptions: a sample size of 74, a proportion of good knowledge of 50%, a degree of confidence and precision of 95%, and an apparent prevalence of 0.05. The sample size was then expanded by 10% to address non-response. During the data collection procedure, confidentiality safeguards were in place.

**Inclusion criteria:** Postgraduate medical students working in COVID-19 ICU were included.

**Exclusion criteria:** Those who had not worked in COVID-19 ICU were excluded.

This study has received ethical committee approval (CTRI/2021/01/030651) from the institutional ethics committee. The identity of all the study participants was kept secret by keeping their data confidential. Participation was voluntarily given and unpaid.

A self-administered questionnaire was used; the authors created it after reviewing other studies and looking through commonly asked questions on the WHO and the Ministry of Health and Family Welfare websites. The questionnaire for best practices was chosen after a thorough analysis of numerous review articles, meta-analyses, and the WHO website. The authors, one professor of public health and one of anaesthesia, reviewed and validated the questionnaire for content and applicability.

The questionnaire covered demographic information, including responders' age, sex, years of experience providing critical care, the type of organization they work for, the number of hours they put in daily, and whether or not they were quarantined after the job. The knowledge component had 20 questions that covered the fundamental facts, methods of transmission, types of treatments, and strategies for illness prevention. Each question was answered by either yes, no, or don't know. The attitude part asked respondents to answer ten questions on their attitudes towards COVID-19 as a sickness that can be prevented and controlled (six items) and their attitudes towards the measures made by the hospital or government to combat the COVID-19 pandemic (four items). Strongly agree (5 points), agree (4 points), undecided (3 points), disagree (2 points), and strongly disagree were the responses to each item on the 5-point Likert scale. Risk perception: evaluation of the post-emotions graduate and sense of dread from contracting COVID-19. Either yes or no could be given as an answer.

We selected the online data collection method because the respondents were from hospitals in south India. The creation of a Google form, which participants were asked to complete and submit. On WhatsApp, groups for post-graduates were sent a link to a survey. Google forms were used to complete 156 surveys totalling 157.

Data were entered in Microsoft excel and verified, then in SPSS software. The normality of the data

was checked. The continuous variables were expressed as mean  $\pm$  standard deviation (SD), and the difference between groups was compared using Student's t-test. Categorical data were summarized as frequency and percentage. Statistical analysis was performed using SPSS software, and a two-tailed p-value  $< 0.05$  was considered statistically significant.

## RESULTS

### Best Practices 20 Questions

95.3% of respondents mentioned that the donning and doffing areas were distinct. The patient-to-staff ratio was 2:1 in 40% of hospitals and 3:1 in the other 40%. 43.4% of respondents were unsure how frequently the floors and other surfaces are cleaned daily. Only 47% of respondents indicated they closely adhered to the WHO's five moments of hand hygiene. For mechanically ventilated patients, 17% of facilities did not utilize bacterial filters, whereas 53% used HME. The amended ACLS recommendations for COVID suspicious patients were known to 71% of respondents. Remdesivir should only be begun in instances that are moderate to severe, according to 55% of respondents. Methylprednisolone was selected by 55% of respondents for treating COVID sequelae.

**Knowledge: 10 questions**

The mean knowledge score of participants was  $8.5 \pm 2.7$ , ranging from 7-10, with the mean correct answer rate of questions being 88.4%.

**Attitude 10 questions:**

Although most of our participants thought COVID-19 was a serious illness, they all agreed it could be avoided. After working in a COVID ICU, most clinicians (95.6%) believed that routine infection control methods could prevent COVID-19. In general, males were found to have a more positive attitude than females in several attitude items.

**Perception: 10 questions**

Regarding risk perception, roughly 83.1% of our participants said they were worried about getting a COVID-19 infection, and 89.2% said they were more vulnerable to getting it than others. The following statements were the most frequently accepted by participants as reasons for their perceived fear of contracting COVID-19 infection: fear of infection spreading to their families (96.5%), the disease is highly contagious (91.74%), COVID-19 is a new disease with no vaccine (58.6%) or treatment (77%), and the disease is fatal (62.1%).

## DISCUSSION

The postgraduate participants in the study had a good level of understanding of COVID-19. The mean of right answers was  $8.5 \pm 2.7$ . This is consistent with research done by Abdel et al.<sup>[5]</sup> Zhang et al.<sup>[6]</sup>, and Huyn G et al.<sup>[7]</sup>, who stated that about 80-90% of their respondents had an adequate level of knowledge. We could not locate any

systematic survey to determine whether the procedures were being followed, despite several papers having charts outlining the best practices. The WHO's five minutes of hand hygiene, not touching your eyes, mouth, or nose, and wearing a surgical face mask was among the preventative steps our participants most frequently adopted. Ng K et al.<sup>[8]</sup> drew that surgical masks are as effective as N95 respirators if used with hand wash and other infection safety measures. Contrary to our findings, Kumar et al.<sup>[9]</sup> and Olum et al.<sup>[10]</sup> found that healthcare workers (HCWs) had moderate to poor knowledge of the function of face masks in the prevention of the disease. Our participants had sufficient awareness of the COVID-19 symptoms, mechanisms of transmission, and treatments.

Our findings showed that HCWs generally had a favourable opinion of COVID-19 as a condition that could be avoided. This is consistent with numerous research that discovered a connection between HCWs' attitudes and their understanding of COVID-19. Despite having a high awareness score, most respondents expressed fear and felt more vulnerable to COVID-19 infection. This is consistent with research that discovered a connection between the intensity of fear and risk perception. Similar to our study, Abdel et al., in their Egyptian study, reported that two-thirds of HCWs believed they were more likely to contract an infection.<sup>[5]</sup>

Delivering high-quality healthcare begins with risk reduction because the health sector presents the greatest risk to its employees. Risk exposure and mental health of HCWs may be significantly impacted by how they perceive risk.<sup>[11]</sup> Most of our respondents (83.1% & 89.2%, respectively) felt more likely to have COVID-19 infection despite having excellent knowledge scores (this is significant to highlight). This backs with the research by Zhang et al.<sup>[6]</sup> and Maleki et al.<sup>[12]</sup>, which found that 85% and 92% of HCWs were concerned about getting sick and infecting their families. The most central step in defining the risk that HCWs perceive is carefully optimising the basic tool to modify the attitude and make the workplace stronger and safer.<sup>[11]</sup>

## CONCLUSION

According to national statistics, when this manuscript was written, up to 30% of SARS-

COVID-19 patients required ICU admission for ARDS. Most required various types of oxygen support, ranging from simple MASK TO NIV assistance to ventilator support. India is one of a few nations with a very low death rate of 10%, likely due to the prompt provision of PPE, the stringent infection control procedures, and the frequent CME and awareness programmes.

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