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Awareness on the Role of Health Care Workers in Covid-19 - Need of the Hour

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ABSTRACT

Introduction: The rapid and extensive spread of the COVID-19 pandemic is a major cause of concern for the healthcare professionals all around the globe. Little is known about the effectiveness of personal protective equipment for healthcare workers who take care of patients infected with the COVID-19.

Materials and Methods: Self-administered questionnaire on the awareness of COVID-19 among healthcare professionals were prepared. The questions were distributed in Google forms and a hundred participants participated. The data were statistically analyzed through SPSS software.

Results and Conclusion: The association between groups was assessed by Chi-square test where $p < 0.05$ was considered statistically significant. We have observed that the association between gender and responses to awareness on methods awareness of diagnostic tests for COVID-19 was statistically significant ($p = 0.002$). There is a need for regular educational awareness programs and training programs on infection control practices for COVID-19 across all healthcare professionals. Thus, minimize the risk of transmission to healthcare workers and provide optimal care for patients.

Key Words: COVID-19, Hand sanitizer, Healthcare workers, Hygiene, Face mask, Online survey

INTRODUCTION

Healthcare workers are particularly vulnerable to this infection¹. The virus that causes Covid19 was initially called as 2019-nCoV and was then termed as syndrome Coronavirus-2 by the international committee on taxonomy of viruses (ICTV)². It is a strain discovered in 2019 which was not found previously in humans³. Previously, the severe acute respiratory syndrome coronavirus (SARS-CoV) and the Middle East respiratory syndrome coronavirus (MERS-CoV) have been known to affect humans⁴.

Outbreaks of respiratory disease caused by these viruses originated in animals before moving into other hosts like humans⁵. MERS-CoV was found to be transmitted from Arabian camels to humans, whereas SARS-CoV was transmitted from civet cats to humans⁶. SARS -CoV-2 seems to have originated from bats, and the first reports of cases where from Wuhan⁷. Hubei Province in China, suggesting animal to person spread from a live animal market⁸. The

virus spread to the entire world and it became a pandemic⁹. Several countries have now reported community spread. The world health organization WHO declared the coronavirus disease as a pandemic on March 11, 2020¹⁰.

With this mode of transmission, healthcare workers are one among the highest risk of being infected¹¹. That highly contagious SARS-CoV-2 is an additional hazard for the healthcare system apart from the burden of extended work hours, physical and physiological stress, burn out, and fatigue¹². The aim of this study is to assess the awareness of the role of health care workers in COVID-19 disease and its related infection control practices among healthcare professionals in the Indian healthcare scenario.

MATERIALS AND METHODS

The study setting is a prospective observational study. The advantages of this study are economical, easy to create, wide

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research, gathers larger data, and quick interpretation. This study was approved by the scientific review board, Saveetha Dental College, Chennai. The method of sampling is simple random sampling. The sample size is a hundred college students. In data collection, the questionnaire is a self-structured questionnaire with 15 questions. The data collection software used is an online Google form link. Methods of representation of each output variable are pie chart and bar diagram. The data is collected and statistically analyzed using SPSS software. Descriptive statistics and association graphs were used to interpret the data.

The following is the Google link for the survey:

https://docs.google.com/forms/d/e/1FAIpQLSfIbcAne3qGcYCNp4p25mN4yFVQ6FA2t2Z8QeNPNXQIrGe2zQ/viewform?usp=sf_link

RESULTS AND DISCUSSION

66.34% are female and 33.66 % are male (figure 1). About 17.82% are using hand sanitizer to protect from the COVID-19 virus, 25.74% are maintaining social distance, 10.89% are taking a proper nutritious diet (Figure 2). 44.55% agreed that coronavirus can enter the human body through nostrils (Figure 3). 69.31% of participants agreed that healthcare workers are at risk of COVID-19 (Figure 4). 58.42% of participants are aware of the diagnostic tests for COVID 19 (Figure 5). 73.27% of participants agreed that COVID-19 pandemic caused stress with its rapid spread (Figure 6). 65.35% of the participants reported that pandemic will be stress among healthcare workers (Figure 7). COVID-19 might be transmitted from person-to-person showing symptoms like fever, shortness of breath, cough, fatigue which was supported by 48.51% of the participants (Figure 8). 70.30% of the participants are aware of the symptoms of COVID- 19 (Figure 9). 75.25% of participants responded that they maintain social distancing after they come back from the hospital (Figure 10).

We have seen the association between gender (X-axis) and responses to awareness on awareness of entry point of coronavirus (Figure 11), responses to awareness on the risk of COVID-19 to health care workers (Figure 12), responses to awareness on the diagnostic test for COVID-19 (Figure 13), responses to awareness on symptoms of COVID-19 (Figure 14).

Since its initial outbreak in China in December 2009, the COVID-19 disease has had a cascading effect worldwide. According to the ICMR update on March 23, 2020, more than 400 individuals have been confirmed positive in India¹³. Isolation of a COVID infected patient is the first step in curbing the spread of COVID-19. In our study, less than half of the responders are aware of COVID-19¹⁴. Risk assess-

ment and management of healthcare workers with exposure in a healthcare setting to patients with coronavirus disease is evaluated¹⁵.

Proper hand hygiene practices play a crucial role in preventing the spread of infection. However, the question in our survey was focused on the recommended hand hygiene technique for visibly soiled hands which is handwashing with soap and water for at least 20 seconds with the whole process lasting for up to 40-60 seconds. Awareness of the use of personal protective equipment for suspected/ COVID-19 Cases was high among all groups of healthcare professionals. A facemask /N95 respirator should be used when entering the patient room. The N95 respirator is preferred over facemask when performing or presents for aerosol-generating procedures.

Disposal of used face masks and hand hygiene should be followed throughout. A sterilized dress with disposable face shield and clean non-sterile gloves are recommended upon entry to the patient room area. The patient's isolation and aerosol performing procedures should be carried out in the airborne infection isolation room. Air from these rooms should be filtered and proper ventilation should be available.

Physicians and nurses had significantly better knowledge when compared with other healthcare workers. The current situation requires urgent development of strategies to prevent infection among high-risk populations including pre-exposure and post-exposure prophylaxis.

Numerous studies *in silico* analysis^{16,17}, natural compounds^{18,24}, nanomaterials^{25,26}, and oncology research²⁷⁻³⁰ improved my passion for research towards epidemiological surveys. The idea for this survey from the current interest in our community

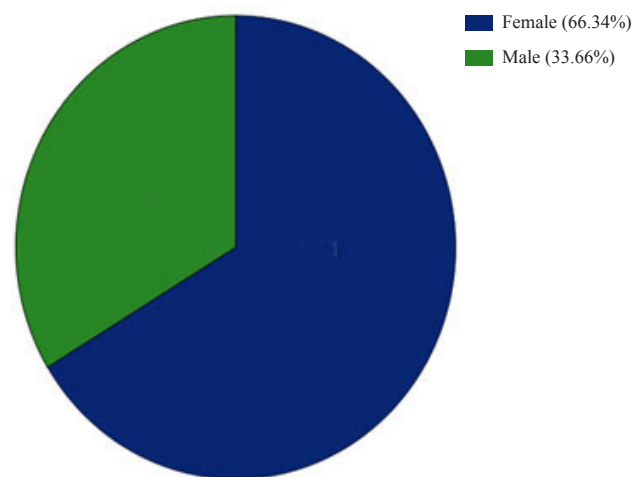


Figure 1: Pie chart showing the percentage distribution of gender among the participants. 33.66% - Male (green) and 66.34%- Female (blue).

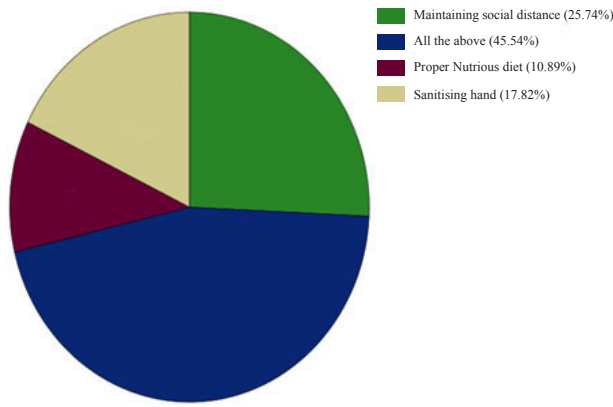


Figure 2: Pie chart showing the percentage distribution of responses about awareness on protective measures for the COVID-19 virus. 25.74% - Maintaining social distance (green), 10.89% - proper nutritious diet (purple), 17.82% - Sanitizing hand (pale yellow), and 45.54% - all the above (blue).

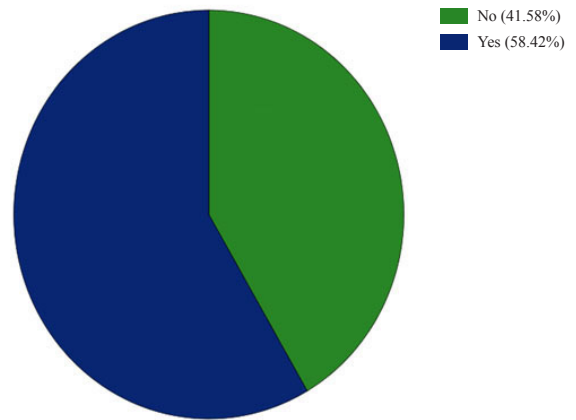


Figure 5: Pie chart showing the percentage distribution of responses about awareness on diagnostic tests for COVID-19. 58.42% - Yes (blue) and 41.58% - No (green).

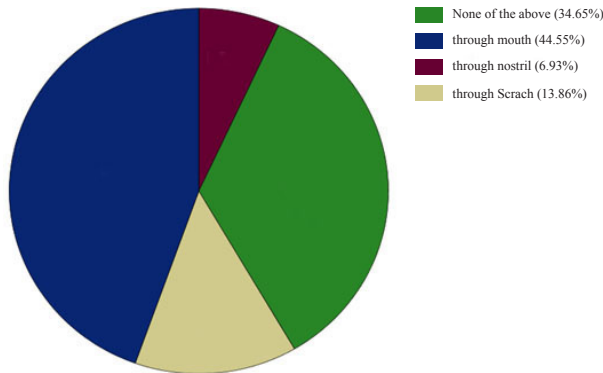


Figure 3: Pie chart showing the percentage distribution of responses about awareness on risk factors for COVID-19. 34.65% - through mouth (green), 13.86% - through nostril (pale yellow), 44.55% - through scratch (blue), and 6.93% - none of the above (purple).

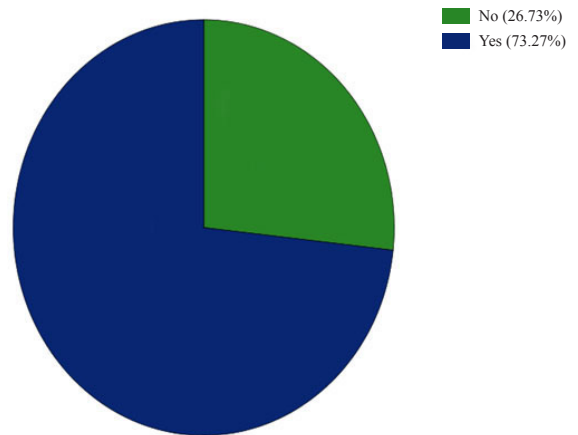


Figure 6: Pie chart showing the percentage distribution of responses about awareness on COVID-19 pandemic and its rapid spread. 73.27% - Yes (blue) and 26.73% - No (green).

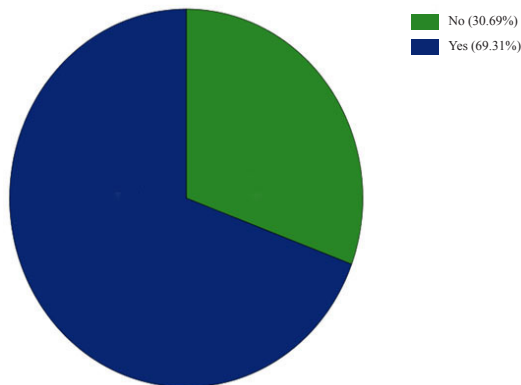


Figure 4: Pie chart showing the percentage distribution of responses about awareness on health care workers at risk from COVID-19. 69.31% - Yes (blue) and 30.69% - No (green).

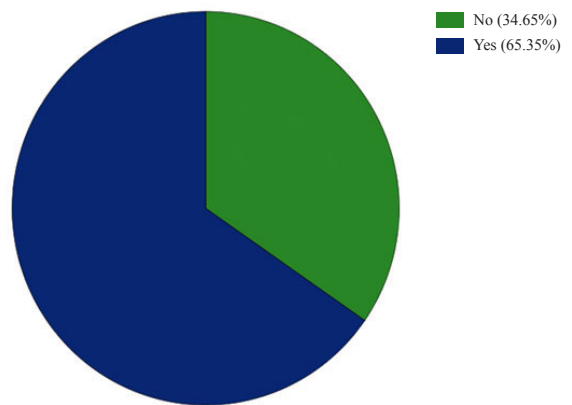


Figure 7: Pie chart showing the percentage distribution of responses about awareness on pandemic to be stress among health care workers. 65.35% - Yes (blue) and 34.65% - No (green).

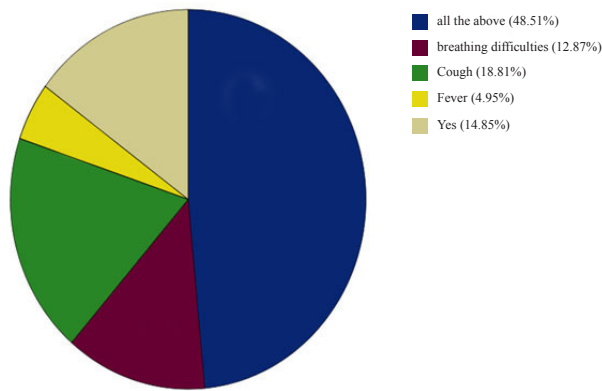


Figure 8: Pie chart showing the percentage distribution of response about awareness on the transmission of COVID-19 from person to person. 4.95% - fever (yellow), 18.81% - cough (green), 14.85% - shortness of breath (pale yellow), 12.87% - breathing difficulties (purple), and 48.51% - all the above (blue).

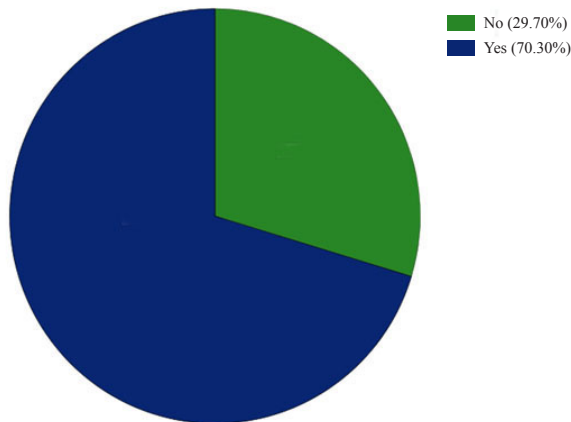


Figure 9: Pie chart showing the percentage distribution of response about awareness on symptoms of COVID-19 - 70.30% - Yes (blue) and 29.70% - No (green).

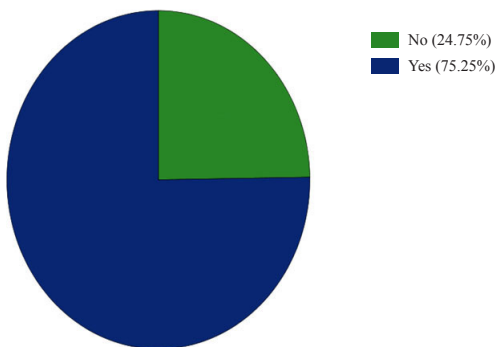


Figure 10: Pie chart showing the percentage distribution of responses about awareness on social distancing from family members after a hospital visit. 75.25% - Yes (blue) and 24.75% - No (green).

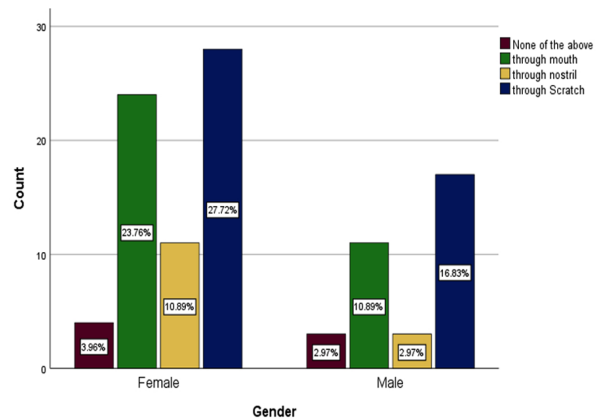


Figure 11: Bar graph represents the association between gender (X-axis) and responses of awareness on routes of entry of the virus into the system (Y-axis). 16.83% of males and 27.72% of females reported through open wounds. Blue color denotes through an open wound, green color denotes through the mouth, Yellow color denotes through the nostril, Brown color denotes none of the above. Both males and females were aware of routes of entry of the virus into the system, but in analysis, there was no statistical significance. Majority of the participants in the female population agreed that (27.72%) they had good knowledge and awareness on routes of entry of the virus into the system. Chi-square value = 1.623; p-value = 0.654 ($p > 0.05$, statistically not significant).

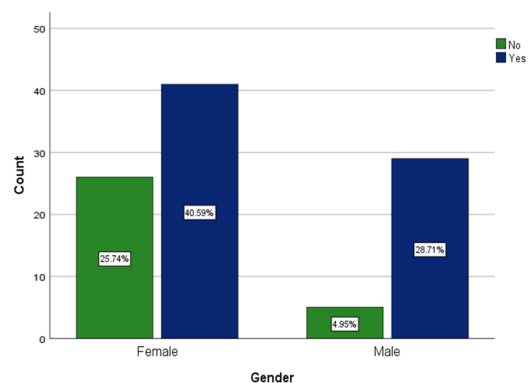


Figure 12: Bar graph represents the association between gender (X-axis) and responses to the awareness on the risk of COVID-19 to health care workers (Y-axis). 28.71% of males reported Yes and 40.59% of females reported Yes. Blue color denotes Yes and green color denotes No. Both males and females were aware of the risk factors of COVID-19 to healthcare workers, but in analysis there was no statistical significance. The majority of the participants in the female population agreed that (40.59%) they had good awareness on risk of COVID-19 to health care workers. Chi-square value = 6.158; p-value = 0.13 ($p > 0.05$ statistically not significant).

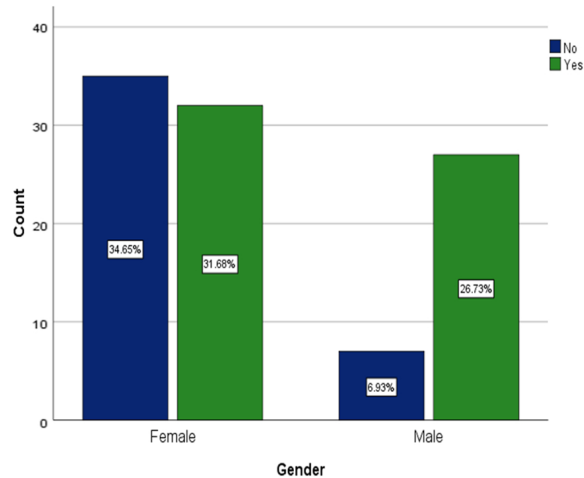


Figure 13: Bar graph represents the association between gender (X-axis) and responses to awareness on diagnostic tests for COVID-19 (Y-axis). 26.73% of males reported Yes and 31.68% of females reported Yes. Blue color denotes yes and green color denotes no. Both males and females were aware of diagnostic tests for COVID 19 and this was evident from the results which were statistically significant. Majority of the participants in the female population agreed that (34.65%) they had good Knowledge and awareness on diagnostic tests for COVID-19. Chi-square value = 9.301; P-value = 0.002 (P < 0.05, statistically significant).

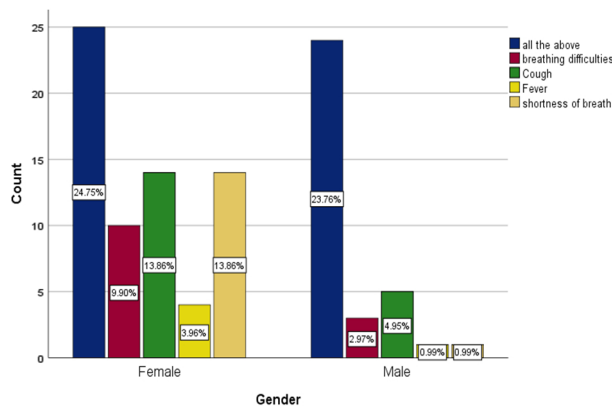


Figure 14: Bar graph represents the association between gender (X-axis) and responses to awareness on symptoms of COVID-19 (Y-axis). 23.76% of males and 24.75% of females reported coughing, breathing difficulties, fever, and shortness of breath. Brown color denotes breathing difficulties, green color denotes Cough, yellow color denotes fever, ivory denotes shortness of breath and blue color denotes all the above. Both males and females were aware of symptoms of COVID 19, but in analysis, there was no statistical significance. The majority of the participants in the female population agreed that (24.75%) they had good knowledge and awareness of symptoms of COVID-19. Chi-square value = 11.573; p-value = 0.21 (p > 0.05, statistically not significant).

CONCLUSION

It is important for an individual to have awareness and knowledge about COVID-19, the reasons behind measures like social distancing and the mode of transmission of the virus. It is important to ensure the safety of frontline workers. Moreover, it is important to reduce the risk of infection among healthcare workers. It can be done by implementing policies and educating the people to convey the importance and the consequences of the virus transmission, we can conclude that adequate awareness can be created on the role of healthcare workers in COVID-19. This study shows the strong need to implement periodic educational programs and training programmes for COVID-19.

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Conflict of Interest

All the authors declare no conflict of interest in the study.

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