Awareness About COVID-19 Precautions and Case Management Among Paramedics - A Questionnaire Based Survey

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ABSTRACT

Background: The rapid spread of the COVID-19 pandemic has become a major cause of concern for the healthcare profession. Paramedics are at the frontline of healthcare delivery systems, especially during the current coronavirus pandemic. The main contributions of paramedics include not only treating and transporting infected patients but also pay attention to decontamination and disinfection of ambulances and medical equipment. Paramedics especially have found to play a key role in the care of patients with pneumonia.

Aim: The aim of this investigation is to assess the awareness of COVID-19 disease control among paramedics as they are the frontline caregivers especially in emergency situations.

Materials and Methods: A cross-sectional study was conducted among paramedics who live in Tamilnadu about the awareness of COVID-19 precautions and case management. Nearly 100 of them responded. The survey data was collected then and plotted in graphs then it was uploaded in the SPSS software and the results were further analyzed.

Results: The population showed positive results with good awareness on COVID 19 and case management. More than 90% of responders are aware of their need to follow safety measures implemented by the government.

Conclusion: Work-related well-being and security of paramedics are of vital significance to limit the danger of transmission to health care workers.

Key Words: Case management, Paramedics, Health care workers, COVID-19, Emergency

INTRODUCTION

Pandemics are an uncommon and upsetting time for health care workers¹. India prepares for the COVID-19 pandemic by uplifting the various medical services by leaps and bounds so that they can handle the current situation². The infection that causes COVID-19 was at first called as 2019-nCoV and was then named as COVID-19 by the ICTV³. It is another strain of coronavirus found in 2019 which was not found beforehand in people. The extreme respiratory condition coronavirus (SARS-CoV) and the center east respiratory disorder coronavirus (MERS-COV) have been known to affect the respiratory tract most commonly⁴.

The target for the virus being the respiratory system, it can be transmitted by person to person transmission (aerosol, touch,

fomites, etc). The incubation period for the coronavirus was approximately 5.2 days and the death can occur within 6 to 41 days. The most common symptoms of COVID-19 were fever, cough, fatigue, sputum production, headache, hemoptysis, diarrhea, dyspnea, etc⁴. The coronavirus disease has 3 stages, the stage 1 will be an asymptomatic state and the period of infection will be 1-2 days, first, the virus enters into the nasal cavity and starts replicating. Then it will go to conducting airways and affect the surrounding areas. This stage can be detected by the nasal swab. Stage-2 will be upper airways and conducting airways responses, 80% of the infected patients, the disease will be affected upper and conducting airways⁴. COVID-19 is most often associated with severe disease that requires intensive care in approximately 5% of proven infections. Also, it is suggested in the recent literature

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that pneumonia is the most frequent serious manifestation of this COVID-19 infection².

Owing to its wide-spreading nature in a short period of time, World Health Organization (WHO) announced coronavirus infection as a pandemic on March 11, 2020⁵. With the suggested method of transmission through contact and aerosol transmission, health care workers are among the most noteworthy dangers of being infected. All possible actions must be taken to control the spread of the infection among health-care workers, by identifying the risk factors for infection and then by taking appropriate measures to reduce these risks⁶.

Paramedics are at the frontline of healthcare delivery systems, especially during the current coronavirus pandemic. The main contributions of paramedics include not only treating and transporting infected patients but also pay attention to decontamination and disinfection of ambulances and medical equipment. Paramedics especially have found to play a key role in the care of patients with pneumonia. The effective management of the disease by the paramedic involves prompt recognition and early administration of oxygen, intravenous fluids, antibiotics, and transfer to hospital².

Previously our team had conducted numerous research studies on a plethora of oral diseases⁷⁻¹⁵ and also awareness programs¹⁶⁻²¹ on various fields which led us to conduct another awareness study which is of importance in the current situation. The aim of this survey is to assess the awareness of COVID-19 ailment and its infection control practices among paramedics, being the frontline caregivers in the pandemic situation.

MATERIALS AND METHODS

The study was conducted among paramedics handling the emergency situations in various hospitals. People involved in this study were the paramedics in Tamilnadu. We were able to reach more people and the study population was educated so they were able to make better knowledge choices. The total sampling size of the survey was 100 and the sampling method used was a simple random sampling method.

The primary data collection was done through an online portal (<https://forms.gle/BEQJkf1m5g3qTErU9>) known as Google forms. The questionnaire totally consisted of ten questions. Questionnaire validity checking was done using the standard protocol. Output variables, the data collection software scores represent the participant's awareness depicted as pie-charts.

Statistical Analysis

The statistical software used was SPSS. The statistical test used for comparative analysis and the association was Chi-square test ($p < 0.05$ was considered statistically significant).

The steps followed in software analysis were entering the data into an excel sheet and entering them in SPSS and generating the graphs.

RESULT AND DISCUSSION

96% of the health care workers use personal protection equipment like gloves, masks very few that are 4% are unaware of it, and don't use them (Figure 1). 79.03% of the paramedics/health care workers are aware that health workers should contact their local health unit to report a portable or confirmed case. 21% are unaware of it. The majority of 94.35% of the paramedics are following the infection control policies (Figure 2). Very few of 6% don't follow infection control policies and the majority of 94% of them follow infection control policies (Figure 3). We just investigated them by asking that government machinery has been able to reach out, guide, and assure the people 77% of them said yes and 23% said no (Figure 4). 99% agreed to the fact that paramedics are supposed to be educated. Very few that are 1% disagreed with it (Figure 5). They were asked whether they know the fact that if the patient is suspected with corona they should notify the local public health unit and 92% answered yes and 8% answered no (Figure 6). The paramedics were questioned about the recovery time of the corona infected patient. 20% answered 1 to 2 weeks. 41.8% answered 3 to 4 weeks. 19.1% of them answered 5 to 6 weeks and 18.2% of them answered 6 to 7 weeks (Figure 7). 58.06% of the paramedics said that sufficient isolation beds are available in their clinics/hospitals. 41.94% of the paramedics don't have sufficient isolation beds in their hospitals (Figure 8). The association between gender and the people following the guidance of the government was analyzed using chi-square test and was found to be insignificant (Figure 9). The association between gender and the availability of isolation beds was analyzed using chi-square test and was found to be significant (Figure 10). The association between gender and the availability of isolation beds was analyzed using chi-square test and was found to be insignificant (Figure 11). The association between gender and the awareness in following the infection control policies was analyzed using chi-square test and was found to be insignificant (Figure 12).

Awareness of the use of personal protective equipment (PPE) for suspected or confirmed COVID-19 cases was good among our study population. The protocol followed was provided by CDC for interim infection prevention and control for patients with suspected or confirmed coronavirus diseases 2019n (COVID-19)²². A face mask/ N95 respirator²³ should be used when entering into the patient room²⁴. The N95 respirator²⁵ is preferred over face mask²⁶ when performing aerosol-generating procedures²⁷. Proper disposal of the used masks and hand hygiene should be followed. According to previous reports, a clean gown with goggles

or disposable face shields must be used. Clean non-sterile gloves are recommended upon entry to the patient room area. In case of shortage, gowns should be prioritized for aerosol-generating procedures^{28,29}. A nurse or paramedic should also treat the patient's fears, concerns and in addition should also treat their physical pain³¹. They are significantly linked to human interactions and contribute substantially in establishing a high-quality relationship with patients. The clinical case of patients with suspected or confirmed cases is a real challenge for healthcare professionals³². Indeed, special strategies should be put in place with the aim of reducing the risk of transmission of these diseases³³. These strategies include the application of infection control procedures³⁴, including the isolation of patients in a room with specific technical features. It may take 2 weeks for your body to get over the illness. That's the average recovery time for mild cases according to the world health organisation³⁵. Empathy is the main component in effective healthcare provider-patient relationships¹¹. For those with severe or critical cases, recovery time can take up to 6 weeks and vaccine development is underway according to current literature³⁶.

Figure 1: The pie chart depicts the percentage distribution of the usage of personal protection equipment. 96% answered yes (blue). 4% answered no (red).

Figure 2: The pie chart depicts the percentage distribution of the awareness of COVID - 19 among paramedics. 79% answered yes (blue). 21% answered no (red).

Figure 3: The pie chart depicts the percentage distribution of the infection control policies followed by paramedics. 94% answered yes (blue). 6% answered no (red).

Figure 4: The pie chart depicts the percentage distribution of people following the guidance of the government. 77% answered yes (blue). 23% answered no (red).

Figure 5: The pie chart depicts the percentage distribution of the education of paramedics. 99% answered yes (blue). 1% answered no (red).

Figure 6: The pie chart depicts the percentage distribution of the paramedics to inform the local public health unit when the patient is affected. 92% answered yes (blue). 8% answered no (red).

Figure 7: The pie chart depicts the percentage distribution of the recovery time of a coronavirus infected person. 17.74% answered 1 to 2 weeks (blue). 49.1% answered 3 to 4 weeks (red). 17% answered 5 to 6 weeks (blue). 16.1% answered 6 to 7 weeks (orange).

Figure 8: The pie chart depicts the percentage distribution of the availability of isolation beds. 58% answered yes (blue). 42% answered no (red).

Figure 9: The bar graph depicting the association between gender and the people following the guidance of the government. X-axis represents gender and Y-axis represents the number of individuals following the guidance of the government (blue) and the number of individuals who don't follow the guidance of the government (red). Among the 78% of the people, 35% constitutes males and 43% constitutes females. Females are more aware of government policies than males though there is no significant difference in responses between males and females. Chi-square test $P = 0.41$ - statistically not significant.

Figure 10: The bar graph depicting the association between gender and the availability of isolation beds. X-axis represents the gender and Y-axis represents the number of individuals who have sufficient number of isolation beds in their hospitals (blue) and the number of individuals who don't have a sufficient number of isolation beds in their hospitals (red). Among the 58% of the people who have a sufficient isolation beds in their hospitals, 23% constitute males and 35% constitutes females. There is a significant difference in responses between males and females. Chi-square test $P = 0.03$ - statistically significant.

Figure 11: The bar graph depicting the comparison between the gender and the number of individuals who use personal protective equipment. X-axis represents the gender and Y-axis represents the number of individuals who use personal protection equipment (blue) and the number of individuals who don't use personal protection equipment (red). Among 95% who use personal protection equipment, 43% are males and 52% are females. Hence females are more conscious in using PPE than males. There is no significant difference in responses between males and females. Chi-square test $P = 0.17$ - statistically not significant.

Figure 12: The bar graph depicting the comparison between gender and awareness in following the infection control policies among paramedics. X-axis represents the gender and Y-axis represents the number of individuals who are aware (blue) in following the infection control policies and the number of individuals who are not aware of following the infection control policies (red). Among the 94% of the paramedics who follow the infection control policies, 44% constitutes males and 49% constitutes females. There is no significant difference in responses between males and females. Hence females are more aware of following the infection control policies than males. Chi square test $P = 0.65$ -statistically not significant.

CONCLUSION

The population should have a better knowledge and should follow protective measures and preventive measures so that it helps to overcome COVID-19. The COVID-19 pandemic is a quickly changing worldwide well being³⁷. Paramedics from Tamilnadu indicated a sufficient consciousness of COVID-19 in the medical services setting. Few limitations of this study include the limited sample size and non-unavailability of paramedic personnel for survey. Females are more aware of the government policies, PPE requirements, and infection control protocol than the males who participated in the study. This study shows that there is a solid need to execute occasional instructive mediations and prepare programs on disease control policies for COVID-19 over all paramedics and health care workers. Conducting online courses for Paramedics could be a valuable and safe device to improve their knowledge and attitude towards handling the patients with utmost care and concern.

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QUESTIONNAIRE

1. Are paramedics supposed to be educated?
 - A. Yes
 - B. No
2. Government machinery has been able to reach out, guide and assure the people
 - A. Yes
 - B. No

3. Paramedics should also screen for COVID-19 using the latest “COVID-19 Screening Tool for Paramedics”
 - A. Yes
 - B. No
4. Are sufficient isolation beds available?
 - A. Yes
 - B. No
5. Are essential services functioning and essential goods available?
 - A. Yes
 - B. No
6. Health workers should contract their local public health unit to report a probable or confirmed case?
 - A. Yes
 - B. No
7. What is the recovery time?
 - A. 1-2 weeks
 - B. 3-4 weeks
 - C. 5-6 weeks
 - D. 6-7 weeks
8. When a suspect patient is identified by the CACC, the CACC will notify the responding paramedics crew?
 - A. Yes
 - B. No
9. Are you following the infection control policies?
 - A. Yes
 - B. No
10. Do you use personal protection like gloves, mask?
 - A. Yes
 - B. No