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Knowledge, attitude, and practice of paramedics in Qatar regarding the use of personal protective equipment against COVID-19

Padarath Gangaram[1,2,*], Yugan Pillay[1,2], Guillaume Alinier[1,3,4,5]

[1]Hamad Medical Corporation Ambulance Service, Doha, Qatar
[2]Faculty of Health Sciences, Durban University of Technology, Durban, South Africa
[3]School of Health and Social Work, University of Hertfordshire, Hatfield, UK
[4]Weill Cornell Medicine-Qatar, Doha, Qatar
[5]Faculty of Health and Life Sciences, Northumbria University, Newcastle upon Tyne, UK
*Email: PGangaram@hamad.qa

ABSTRACT

Background: Internationally, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic, causing corona virus disease (COVID-19), has increased the demand on healthcare services and resources[1]. The proper use of personal protective equipment (PPE) by paramedics has recently become apparent[2]. The risk of COVID-19 transmission has increased during prehospital life-saving procedures generating aerosols such as non-invasive ventilation, tracheal intubation, and external chest compressions, especially when working in a confined ambulance compartment[3]. Paramedics are encouraged to increase body-surface-isolation by donning additional PPE (high-filtration facemasks/face shields/surgical gowns/surgical hoods) during all patient encounters[2]. This study aimed to better understand paramedics' knowledge, attitude, and practice of PPE utilization in the State of Qatar during the COVID-19 pandemic.

Methods: This prospective and quantitative study focused on the collection of descriptive data utilizing a purpose-designed online survey. Around 1300 frontline paramedics employed by Hamad Medical Corporation Ambulance Service (HMCAS) were invited via email to participate in the study.

Results: 282 paramedics completed the survey. 90.4% were male and 78.7% had a bachelor's degree. 97.1% completed the mandatory HMCAS online infection control training program, 82.9% completed an N95 mask fit test in the last 5 years, and 91.5% completed the hand hygiene training program. The study found paramedics to be knowledgeable about COVID-19 and its transmission (98.2%) (Table 1). Paramedics' attitude was mainly positive towards the use of PPE to prevent the spread of the virus which was synchronous with their practice.

Conclusion: An effective model to curb the spread of COVID-19 amongst healthcare workers must consider the knowledge, attitude, and practice of first responders. This sample demonstrated a strong knowledge of COVID-19 and its transmission. Their overall positive attitude and good infection control practices were a demonstrative effort to mitigate risks associated with the spread of the virus in the prehospital setting.

Keywords: Prehospital, Paramedics, Infection control, PPE, COVID-19

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Table 1. Knowledge, Attitude, and Practice (KAP) of paramedics concerning PPE use for confirmed/suspected COVID-19 patients.

Statements	Disagree N (%)	Neutral N (%)	Agree N (%)
K1. I must undertake a N95 mask fit test to select the most appropriate mask size.	2 (0.7)	7(2.5)	273(96.8)
K2. The corona virus may be transmitted by touching contaminated surfaces and touching one's eyes, nose or mouth, or from droplet transmission of an infected patient.	3 (1.1)	2(0.7)	277 (98.2)
A1. Hand hygiene must be practiced after doffing PPE to protect me from the transmission of COVID-19.	6 (2.1)	7(2.5)	269 (95.4)
A2. Wearing a face shield reduces transmission when managing a suspected/confirmed COVID-19 patient in the back of an ambulance.	8 (2.8)	19(6.7)	255 (90.5)
P1. I should change my N95 mask to a surgical mask when transporting a suspected/confirmed COVID-19 patient.	223 (79.0)	16 (5.7)	43 (15.2)
P2. In order to prevent the spread of the COVID-19, I wear PPE before contacting a patient.	0 (0)	1 (0.4)	281 (99.7)

IRB statement: This study has been approved on an expedited basis and exempted (Category 3) from Institutional Review Board approval by the Hamad Medical Corporation Medical Research Centre (MRC-05-145).

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