



The level of stress experienced by Hamad Medical Corporation Paramedics before and during the COVID-19 Pandemic

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ABSTRACT

Background: Paramedics are at risk of burnout which represents a concern for the healthcare system and public health¹. In Italy, about 20% of health practitioners were infected, and some died during their work fighting against the COVID-19 pandemic², but little is known regarding paramedics. This study assessed the level of stress associated with the work of Hamad Medical Corporation Ambulance Service (HMCAS) paramedics in Qatar before and during the COVID-19 pandemic.

Methods: An online survey combining validated tools including the Workplace Stress Scale³, with additional questions, was sent to all HMCAS frontline staff (n = 1,100) between January and May 2021 with text message reminders. The items upon which the level of stress of paramedics was determined before and during the pandemic are presented in Table 1. The level of stress was determined based on the responses to 9 questions.

Results: 274 valid responses were received. The level of stress was then split into five categories, from low to dangerous. Based on the paramedics' responses, their reported level of stress was in the moderate range before the pandemic and reached the severe level during the pandemic (Table 2).

Conclusion: The reported level of stress among HMCAS paramedics was significantly higher during the COVID-19 pandemic compared to prior levels of stress. This can probably be explained by the very nature of their profession as frontline clinicians responding to emergency calls and being potentially exposed to the viral infection. Strategies need to be put in place to effectively mitigate the effects of increased stress levels experienced, so that paramedics remain safe and able to provide effective medical care rather than succumb to mental and physical illness related to stress.

Keywords: Pre-hospital, Paramedics, Work-related stress, COVID-19, Pandemic

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Table 1. The level of stress experienced by the HMCAS paramedics before and during the current pandemic (Based on the tool by Marlin Company and the American Institute of Stress 2009)(3).

Items (Each with a score of up to 5 points)	Perceived working conditions						
	Effect of work on physical wellbeing						
	Effect of work on emotional wellbeing						
Stress levels	Perceived amount of work						
	Difficulty in expressing opinions about work conditions to superiors						
	Work pressures interfering with family or personal life						
Control or input over work duties							
Appropriate recognition or rewards for good performance at work							
Ability to fully utilize skills and talents at work							
Stress levels	COVID-19 (n=274)		Mean Differences	95% Confidence Interval of the Difference		t	p-value
	Before	During		Lower	Upper		
	Mean±SD	Mean±SD					
Total score / 45 *	27.83±6.91	30.15±6.85	2.32	1.88	2.76	10.334	<0.05

Likert Scale for each item with: Never=1, Rarely=2, Sometimes=3, Often = 4, Always =5

* See Table 2 for the levels of stress range values.

Table 2. The level of stress experienced by HMCAS paramedics before and during the current pandemic. Based on the instrument by Marlin Company and the American Institute of Stress (2009)(3).

Level of stress (Score range)	COVID19 (n=274)		McNemar-Bowker test	P-value
	Before	During		
	n (%)	n (%)		
Low (17 or less)	20 (7.3)	10 (3.6)	80.052	<0.05*
Fairly low (18-23)	47 (17.2)	32 (11.7)		
Moderate (24-28)	82 (29.9)	62 (22.6)		
Severe (29-34)	74 (27)	90 (32.8)		
Severe is potentially dangerous (35-45)	51 (18.6)	80 (29.2)		

* Significant difference at $p \leq 0.05$; n=number; p-value calculated by McNemar-Bowker test. Maximum score=45

Ethical approval/IRB statement: This study has been approval by the ethics committee of the Doha Institute for Graduate studies: (DI-IRB-2020-S84) and Hamad Medical Corporation Medical Research Center (MRC-01-20-1156)

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