

Assessment of Burnout among Healthcare Workers during the Pandemic Crises of COVID 19 in Primary Health Care Centers, Dubai, United Arab Emirates

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Abstract

Covid-19 infection was identified in Wuhan in December of 2019, the World Health Organization has declared the outbreak of a global pandemic by March 11, 2020, the health care system focused on mobilizing resources, fighting infections, reducing mortality and others. But less attention was paid to the psychological burden of the pandemic on the health care workers (HCWs). HCWS were exposed to high levels of stress during the pandemic because of the uncertainties in the management of COVID-19 cases, the fear in treating highly contagious viral disease and others all of these contributed to exposing the HCWs to high level of fear and anxiety, leading to stress and burnout (Alikhani *et al.*, 2020), (Fessell & Cherniss, 2020). The aim of the study was to measure the rate of burnout among the frontline staff such as physicians and nurses in Primary health care sector in Dubai health Authority in the City of Dubai, during the period between March and June of 2020. The study was cross-sectional descriptive and analytical; using the Copenhagen Burnout Inventory (CBI) questionnaire tool to assess the Burnout, a sample of 200 participants were included in the study. The personal burnout was 57%, work-related burn-out was 53%, while only 34% had pandemic-related burnout. In the comparisons made in terms of burnout sub-dimensions and demographic factors, it appeared that the effects of occupational variables, such as workload, service time, as well as demographic variables such as, profession and income were significant.

Keywords: COVID-19, Burnout, Health Care workers, pandemic, depression anxiety, stress.

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INTRODUCTION

Coronavirus infection (Covid-19) was first identified in Wuhan in December 2019, the World Health Organization (WHO) has declared the novel coronavirus (COVID-19) outbreak a global pandemic on March 11, 2020 (Albott C, *et al.*, 2020). the pandemic had rapidly spread over 200 countries causing deaths and producing much stress on health care system and health Care workers as well (Alikhani *et al.*, 2020) the health care system focused on mobilizing resources, fighting infections, reducing mortality, providing personal protective equipment (PPE) and other medical equipment; on the other hand less attention was paid to the psychological burden of the pandemic on health care workers (HCW) (Alikhani *et al.*, 2020), (Fessell & Cherniss, 2020).

Burnout is a mental condition defined as a result of continuous and long-term stress exposure, particularly related to psycho- social factors at work (Shah, K *et al.*, 2020). The literature is rich with evidence of high prevalence of depression, anxiety, burnout symptoms and other psychiatric disorders among physicians and residents even prior to the COVID-19 pandemic.

Health Care Worker were exposed to high levels of stress while facing the pandemic due to many reasons such as the uncertainties in the management of COVID-19 cases (Alikhani *et al.*, 2020), the fear in treating highly contagious viral disease. The constant fear of contraction infections, and the risk they will pose on their loved ones and their families, concerns about the availability of PPE and resources; all of these had resulted in exposing the health workers to high level of

fear and anxiety, developing stress-related symptoms and professional burnout later on. (Alikhani *et al.*, 2020), (Fessell & Cherniss, 2020).

It was found in one of the studies that the COVID-19 has a mental health consequence in 54% of the HCW, where up to 24% of the same study sample rated their overall mental health as bad and 56% of them needed psychological help and support. The psychological impact was different between different categories in HCW for example it was found more evident in Female gender, nursing staff, early career physician & younger staff, the psychological impact differs between staff as some showed increased rates of hyper arousal, avoidance, sleep problems (Fessell & Cherniss, 2020), increase in the rates of depression and anxiety and exacerbation of different existing mental health issues (Sasangohar *et al.*, 2020).

The huge stress the HCW went through had resulted in professional burn out in some categories of staff, leading to emotional exhaustion, affected their ability to work and accomplish, negatively interfered with their relationships outside and inside their profession and the risk of long- term depersonalization (Fessell & Cherniss, 2020).

The matter of stress and burnout that is pandemic related is not new research and it was done about past outbreaks like severe acute respiratory syndrome (SARS), Middle East Respiratory syndrome (MERS), influenza and H1N1, it was very clear from the results of studies that staff experience varying degree of burnout and anxiety, which was also correlating with Copenhagen Burnout Inventory (CBI) questionnaire tool which was used also in this study (Alikhani *et al.*, 2020).

In one of the studies, it was shown that primary care providers may develop more emotional responses such as fear and anxiety and this was related to many causes such as longer working hours, disturbance to their work-life balance, limited resources (specially PPEs), being worried about transmission of infection to their families, exerting extra burden on front line staff between their work and social life responsibilities (Sasangohar *et al.*, 2020). Staff Burnout during COVID season was related to four main contributors: process inefficiencies, occupational hazard and risks, burden on HCWs and financial instability in addition to infection control issues, overload of changing policies and guidelines, inadequate PPEs and perceived fatality (Sasangohar *et al.*, 2020), (Alikhani *et al.*, 2020).

The aim of the study was to measure the rate of burnout in the frontline staff in Primary health care sector in Dubai health Authority in the City of Dubai, during the COVID-19 pandemic in the period between March and June of 2020 the study population includes the frontline staff such as physicians and nurses of five

health centers. The Copenhagen Burnout Inventory (CBI) questionnaire tool was used to screen them. This was used to detect if burnout was there in front line staff and how it affects their life. This will be of great help in preventing burnout occurrence if any pandemic occurs.

The main objectives of this study were to identify prevalence of burnout among health care workers, find factors leading to burnout in health care workers and the prevalence of personal, work and patient related burnout factors among physicians and nurses.

MATERIALS AND METHODS

The study design was cross-sectional descriptive and analytical; using the Copenhagen Burnout Inventory (CBI) questionnaire tool to assess Burnout among health care workers during the epidemic crises of COVID 19 (Kristensen *et al.*, 2005), (Milfont *et al.*, 2007). The questionnaire tool consists of general biographic data and three burnout categories, each with its specific questions. Six questions related to personal factors. Seven questions related to work-related factors and another Six questions related to patient factors. Each question has a response scale of 0 to 100. Response categories: Always (100), Often (75), Sometimes (50), Seldom (25), Never/almost never (0). An average burnout score of ≥ 50 is positive for diagnosing Burnout.

The study included nurses and doctors that were in contact with confirmed or suspected patients with COVID-19 virus and worked during the pandemic period from 12th March till the end of June in one of the following health centers in Dubai Health Authority: Al-Barsha Health Center, Nad AlHammer Health Center, Al Badaa Health Center, Al Khwaneej Health Center, and Al Mizher Health Center; as those five health centers were the first to deal with COVID 19 patients during the early days of the pandemic period. Healthcare workers with temporary duties, part-timers, and those without direct contact with suspected/confirmed COVID 19 patients were excluded from the study. The minimum sample size was estimated to be 169 with an accuracy of 5% for the proportion of doctors and nurses working in the clinics mentioned above and following the inclusion criteria.

The participants were provided with an electronic survey tool through a link to fill in using the Microsoft form program. Each participant had to agree on the consent page to proceed with the survey and submit the answers. All answers are polled into one excel sheet, and each response had a unique serial number to keep their answers anonymous and confidential. By October 2020, in total, 200 participants completed the survey and entered the data analysis phase.

Burnout scores for each category were calculated and analyzed descriptively, trying to find an association between each type of Burnout regarding

biographic data, occupation, place of work, years of experience, monthly income, and total duty hour per shift. Ethical approval was granted from the Dubai Scientific Research Ethics Committee (DSREC), Dubai Health Authority, on third of September 2020. The statistical analysis SPSS 24. Used for the study. (IBM Corp. Released 2016. IBM SPSS Statistics for Windows, Version 24.0. Armonk, NY: IBM Corp.).

RESULTS AND DISCUSSION

In total, 200 participants completed the survey. Table 1 shows Descriptive data regarding biographic data, place of work, monthly income, and total duty hours per shift in the entire sample collected.

Table 1: Descriptive data regarding biographic data, place of work, monthly income, and total duty hour per shift in the entire sample collected

		Number	Percentage
Gender	Female	142	85%
	Male	26	15%
Nationality	Emirates	24	14%
	Non-Emirates	144	86%
Marital status	Single	19	11%
	Married	146	87%
	Other (Divorced/widow/ separated)	3	3%
Occupation	Physicians	68	40%
	Nurses	104	60%
Place of Work	Al Barsha health Center	65	33%
	Nad Al Hammar health Center	42	22%
	Al Badaa health Center	27	14%
	Al Mizher health Center	38	20%
	Al Khawanej health Center	23	12%
Monthly income salary	<10,000 AED	68	34%
	10,000 – 20,000 AED	50	25%
	20,000 – 30,000 AED	6	3%
	>30,000 AED	74	37%
Total duty hours per shift	< 7 hours	14	7%
	7 to 8 hours	146	74%
	>8 hours	37	19%

Among the three types of Burnout, the personal Burnout means score calculated above the 50th cutoff for the diagnosis of Burnout. It indicates a positive burnout

related to personal factors being the highest among healthcare workers in primary health care. Table 2 shows the total mean score for each category of burnouts.

Table 2: Shows the total mean score for each category of Burnouts

	Number	Mean score
Personal Burnout score	173	52
Work-related burnout score	170	48
Client related burnout score	179	39

On the other hand, 57% of healthcare workers scored positive for personal Burnout, while 53% scored positive for work-related Burnout. Patient-related Burnout scored the lowest between all three categories,

with only 34% having Burnout related to patient factors among health care workers. Table 3 showing each type of Burnout and their percentage among the study sample.

Table 3: Showing each type of Burnout and their percentage among the study samples

	Number	Percentage positive for Burnout
Personal Burnout	99	57%
Work-related Burnout	90	53%
Client related Burnout	60	34%

No significant relationship was found between gender, nationality, marital status, total duty hours, age, and year of experience with developing Burnout. While

considerable associations were found between the type of occupation, place of work, monthly income with the prevalence of Burnout. Table 4 shows factors

significantly affecting Burnout among health care workers in primary health care during COVID 19 pandemic.

Among healthcare workers, personal and work-related Burnout was significantly higher in physicians than nursing staff; P-value 0.005 and 0.004, respectively. Income was also a significant influence on Burnout among health care workers. Those with the highest income (>30,000 AED) also scored highest in having Burnout compares with those will less income; P-value 0.003.

With regards to the place of work, Nad alHammer health center significantly scored the highest numbers in having personal, work, and client-related Burnout among all the five health centers included in the study; P-value of 0.004.

The study showed that all of the Gender, nationality, marital status of health care workers were not significantly related to personal/work/client burnout rate. On the other hand when different health care categories were compared at the study with regards to the occupation it was found that Physicians burnout rate was significantly higher than nurses, while there was no significant relationship between occupation and client related burnout from our study.

There was a Strong relationship with the place of work and developing personal /work /client related burnout among staff working in health centers with higher patient loads than other health centers due to longer operating hours such as Al Barsha and Nad Alhammar health centers.

The level of satisfaction with income was thought to be effective on burnout. However, the level of physicians' satisfaction with their income was not effective to reduce burnout according to the results obtained in this study, which supports the study of Ogundipe, Olagunju, Lasebikan, and Coker (Ogundipe *et al.*, 2014).

As it was found in the study there was a strong significant relationship between income and total burnout rate among those with higher income (> 30,000 dhs /month) in comparison to lowest total burnout seen with those with lower income (< 10,000 dhs/month).

Finally There was no significant relationship seen between Total duty hour per shift and personal/work/client and the total burnout rate among responders, also there was no significant relationship seen between age and years of practice with total burnout rate.

Table 4: Shows factors significantly affecting Burnout among health care workers in primary health care during COVID 19 pandemic

		Percentage of Burnout	P-value
Occupational Burnout	Personal Burnout	70 % Physicians	0.01
		50% Nurses	
	Work-related Burnout	66 % Physicians	0.008
		44% Nurses	
	Total Burnout (personal, work, and client-related)	55 % Physicians	0.005
		30% Nurses	
Place of work	Personal Burnout	59% Al Barsha HC	0.026
		74% Nad Al Hammar HC	
		37% Al Badaa HC	
		47% Al Mizher HC	
		65% Khawaneej HC	
	Work-related Burnout	57% Al Barsha HC	0.002
		74% Nad Al Hammar HC	
		42% Al Badaa HC	
		26% Al Mizher HC	
		64% Khawaneej HC	
	Client related Burnout	46% Al Barsha HC	0.001
		46% Nad Al Hammar HC	
		8% Al Badaa HC	
		18% Al Mizher HC	
		40% Khawaneej HC	
	Total Burnout (personal, work, and client-related)	47% Al Barsha HC	0.004
		63% Nad Al Hammar HC	
		19% Al Badaa HC	
26% Al Mizher HC			
53% Khawaneej HC			

Monthly income salary	Personal Burnout	51% income <10000 AED	0.042
		53% income 10000 – 20000 AED	
		20% income 20000 – 30000 AED	
		58% income >30000 AED	
	Work-related Burnout	45% income <10000 AED	0.045
		48% income 10000 – 20000 AED	
		25% income 20000 – 30000 AED	
		67% income >30000 AED	
	Total Burnout (personal, work, and client-related)	21% income <10000 AED	0.003
		48% income 10000 – 20000 AED	
		33% income 20000 – 30000 AED	
		56% income >30000 AED	

CONCLUSION

The aim of this study was to determine the burnout levels of health care workers in primary health care centers in Dubai and the factors affecting the burnout level. We tried to determine the (personal/work/client and total) burnout levels of 200 healthcare professionals and reveal the status of burnout levels in terms of demographic and other variables. When similar studies in the literature are examined, it is seen that the results are consistent with the current study. According to Karsavuran, burnout is an undeniable threat to healthcare professionals (Aydan *et al.*, 2015). It is noted that the emotional stress factor is among the causes of burnout for healthcare workers. Yildiz, Cicek, and Sanli conducted a study that showed healthcare professionals are in the top ranks among professions with burnout levels (Yildiz *et al.*, 2018).

A questionnaire-based survey using Copenhagen Burnout Inventory was carried out among Health Care Workers looking after and managing COVID-19 patients in the primary health care centers, among all the 200 responders from 5 health centers in Dubai, out of those 5 centers 2 health centers were 24/7 operating facilities which provided higher response rate from their staff.

The personal burnout was 57%, work-related burn-out was 53%, while only 34% had pandemic-related burnout. In the comparisons made in terms of burnout sub-dimensions and demographic factors, it appeared that the effects of occupational variables, such as workload, service time, as well as demographic variables such as, profession and income, were significant.

The value of study alert the stakeholders on certain variables that can be addressed in the time of the pandemic focusing on reducing burn-out among the HCWs, variables such as work-load, shift hours and place of work can be managed by rotating the staff and allow for longer breaks if possible, also providing mental health counselling services can be important to reduce the level of stress, anxiety and burnout and teach the staff the necessary coping skills.

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Statement of Ethics

Ethical approval was granted from the Dubai Scientific Research Ethics Committee (DSREC), Dubai Health Authority, on third of September 2020. Participants had given their informed consent during the questioner according to the research committee in Dubai Health Authority study protocol.

Conflict of Interest Statement: The authors declare no conflicts of interest.

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