

ORIGINAL ARTICLE

Investigating Job Satisfaction in Pre-hospital Healthcare Workers During the COVID-19 Pandemic: The Role of Work-related Factors

Khaled Qassim Abbas Ali^{1,2}, Anita Abd Rahman¹, Omer Al Sakaf², Aidalina Mahmud¹

¹ Department of Community Health, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia

² Dubai Corporation for Ambulance Services, Dubai, United Arab Emirates

ABSTRACT

Background: During the COVID-19 pandemic, pre-hospital healthcare workers (PHCs) faced increased workloads, longer shifts, and heightened exposure to infection risks. These demanding conditions led to substantial mental and physical strain, often resulting in job dissatisfaction, and subsequently lower quality of patient care. This study aims to determine the job satisfaction levels of PHCs and their associated factors. The study will help determine predicting factors for job satisfaction among PHCs. **Methods:** A cross-sectional study was conducted among 500 PHCs in Dubai Corporation for Ambulance Services (DCAS) who were selected to participate using simple random sampling technique. Their job satisfaction, job environment, working hours/ shift, workload, and management support were assessed using an online self-administered questionnaire and the data was analysed using SPSS version 26 software. **Results:** The mean job satisfaction score of PHCs was 3.47 ± 0.95 which revealed a more than moderate level of job satisfaction among the respondents. Based on the correlation coefficient, job satisfaction was negatively correlated with work hours per week ($r=-0.350$, $p<0.001$), workdays per week ($r=-0.418$, $p<0.001$), extended work insights score ($r=-0.218$, $p<0.001$ and work hours per week ($r=-0.386$, $p<0.001$). **Conclusion:** Given the findings linking low job satisfaction to longer working days and more work during the COVID-19 pandemic, it is crucial to prioritise employee wellbeing through tailored measures. Remote working and flexible working hours are two examples of flexible working arrangements that provide the flexibility needed to ensure a positive work-life balance. Furthermore, providing comprehensive support services, such as mental health resources and counseling, is essential to addressing future pandemic challenges.

Malaysian Journal of Medicine and Health Sciences (2026) 22(1): 1477.1-1477.9.doi:10.47836/mjmhs.v22.i1.1477

Keywords: Job satisfaction, Work-related, Pre-hospital healthcare workers, COVID-19, Occupational stress

Corresponding Author:

Dr. Aidalina Mahmud, Assoc. Prof.

Email: aidalina@upm.edu.my

Tel: +603-9769 2940

INTRODUCTION

As a result of the coronavirus disease 2019 (COVID-19) pandemic, originating from the SARS-CoV-2 virus, global healthcare systems were adversely affected (1). In ambulance reception centres, pre-hospital care is crucial when it comes to starting protocols to isolate the disease and prevent contagion. In the pre-hospital setting, the pandemic presents numerous challenges for the pre-hospital medical services responding to the COVID-19 pandemic, such as long working hours, gender aspects, lack of personal protective equipment (PPE), and lack of trained pre-hospital healthcare workers (PHCs) and low wages and lack of incentives which well-being and job satisfaction among the PHCs workers may be negatively affected (2,3). Low job

satisfaction among PHCs significantly affects the quality of care provided and patient outcomes in health systems (2). PHCs job satisfaction is a critical component of healthcare management because it is positively correlated with improved patient satisfaction, increased patient adherence to treatment, and superior quality of care (4). The COVID-19 pandemic has made the issue of HCWs' poor job satisfaction worse, endangering the long-term viability of healthcare systems (5). In addition, job dissatisfaction can lead to many other negative consequences at the individual, organizational, and country levels. The working hours during the pandemic became longer for the PHCs in Dubai Corporation for Ambulance Services (DCAS) compared to pre-pandemic time, where the days off of PHCs were reduced by 50% to only two days, and their job scope increased. In addition to increased working hours and job scope, the work burden of PHCs in DCAS also increased with the increased number of patients they had to attend to, which was more than 50%. In 2020, the ambulance calls in DCAS increased by 15% during the first half of the

year compared to the same period in 2019 (i.e., 103,508 compared to 90,025), while the number of cases attended to by the ambulance services increased by 15.3%, to 112,592 cases in 2020 compared to 97,645 cases during the same period in 2019 (6). Despite the numerous previous studies on job satisfaction and quality of work life in the literature, job satisfaction and its association with working environments among PHCs during the pandemic still need to be clearly defined. This study benefits the respondents by allowing PHC workers who managed COVID-19 cases during the pandemic to report on their work and personal experiences. From this data, the predicting factors for job satisfaction among them could be determined. This study is significant for policymakers as it predicting factors for PHC workers' job satisfaction during COVID-19. Therefore, this study aims to determine the level of job satisfaction and its associated factors among PHCs in DCAS, United Arab Emirates, during the COVID-19 Pandemic.

MATERIAL AND METHODS

Study design, sampling, and participants

A cross sectional study was conducted at Dubai Corporation for Ambulance Services (DCAS) in Dubai, United Arab Emirates among pre-hospital healthcare workers (PHCs) (emergency medical technicians (EMTs); physicians, advanced paramedics, and basic EMTs) who worked during the COVID-19 pandemic. DCAS is the only pre-hospital service provider in Dubai involved in handling and treating Covid-19 cases. The inclusion criteria included permanent staff of DCAS who worked at DCAS during the COVID-19 pandemic and provided medical and health services to COVID-19 patients. Ambulance drivers and clerical staff of DCAS were excluded. The sampling frame included a list of pre-hospital care workers in DCAS during the COVID-19 pandemic. The sampling frame included a list of pre-hospital care workers in DCAS during the COVID-19 pandemic. The selection was made based on the job category. Simple random sampling was used to select the respondents. The sample size calculation was done based on comparing two means formula based on a study by Amini et al. (7). The study used age as the independent variable and job satisfaction as the dependent variable. A sample size of 500 was calculated based on a 60% incomplete data set, 95% confidence level, and 80% power.

Data collection

Data collection was begun in December 2022 until June 2023. Following the selection of samples, the questionnaire was dispatched to the research and development department at DCAS, which was subsequently emailed to the chosen participants. The study employed a self-administered questionnaire to gather data from pre-hospital healthcare personnel who met the eligibility requirements and gave their agreement to participate. Four components made up

the questionnaire: the respondents' sociodemographic details (8), the work environment (9), the working hours and shift (9), the workload, management support, training, reward, and job satisfaction (10). The level of job satisfaction was measured using 18 items based on a 5-point Likert scale ranging from strongly disagree to strongly agree. The scale consisted of three domains: "Relationship with Management & Supervisors" with 11 items, "Job Content" with five items, and "Relationships with Coworkers" with two items. Work hour was investigated through two indicators related to the number of hours per week and number of working days, as well as four indicators on a scale of 1 to 3 (1: Never, 2: Sometimes, 3: Regularly) related to shift work, night work, overtime and working during the weekend. The workload was assessed using the NASA Task Load Index (NASA-TLX) questionnaire, which included six items measuring the workload based on a five-point Likert scale (1: very low to 5: very high).

The questionnaires were written in English because all employees in DCAS use English as a second language in the organization; in addition, it was done to ensure the questionnaire was preserved in translation, which could result in more accurate answers. The pilot study was conducted among 30 respondents to measure its reliability. Cronbach's coefficient estimates that all items in the questionnaire were reliable and the entire test was internally consistent, ranging from 0.790 to 0.94.

Data analysis

Data analysis was done using IBM SPSS software version 26.0. Every returned questionnaire was reviewed to confirm the completeness of the data. Following the data-cleaning process, normality tests were applied to all continuous numerical variables. The data analysis was conducted in alignment with the research objectives. Descriptive analysis (frequency, percentage, mean & SD, median & IQR) was done to present and summarise the data. T-test, Mann Whitney U test, Kruskal Wallis and Pearson correlation were used to determine the association between sociodemographic characteristics and job satisfaction and the correlation between job satisfaction and work hours/pattern. Multiple linear regression was used to determine the predictors of job satisfaction. The statistical level of significance was set at $p < 0.05$.

RESULTS

There were 500 questionnaires distributed, 321 of which were deemed suitable for data analysis since they were completed and provided sufficient information, indicating an overall response rate of 64.2%. Table 1 summarises the socio-demographic characteristics of the participants. The majority of the respondents were men ($n=233$, 72.6%), aged 30-39 years old ($n=192$, 59.8%), married ($n=279$, 86.9%), had bachelor's degrees ($n=265$ participants, 82.6%) and worked as EMT-Basic

(n=293, 91.3%). The educational distribution revealed that 29 participants (9%) held a diploma, and within the work position variable, the majority of participants, 293 (91.3%), were classified as EMT-Basic.

Table I: Frequency distribution of sociodemographic characteristics (N= 321)

Variables	Frequency (f)	Percent (%)
Age (year)		
20-29	27	8.4
30-39	192	59.8
40-49	71	22.1
≥ 50	31	9.7
Gender		
Male	233	72.6
Female	88	27.4
Marital Status		
Married	279	86.9
Not Married	42	13.1
Education		
Diploma	29	9.0
Bachelor's degree	265	82.6
Higher than BSc	27	8.4
Work position		
EMT-Basic	293	91.3
Paramedic	28	8.7

EMT= Emergency Medical Technicians

Table II provides a detailed description of the level of job satisfaction (3 domains) among PHCs in DCAS. Results showed that the mean $\pm$ SD value for "Relationships with Coworkers domain" was 3.85 ± 0.96 , had the highest level, followed by "Job Content domain" (3.43 ± 0.98), and the lowest mean value belonged to "Relationship with Management & Supervisors domain" (3.41 ± 0.98). The overall mean $\pm$ SD for all the indicators was 3.47 ± 0.95 . This indicates that the level of job satisfaction was higher than the median of scale (3), which revealed a more than moderate level of job satisfaction among the respondents.

Table II: Mean and standard deviation for related items to job satisfaction

Domain	Item	Mean	SD
Relationship with Management & Supervisors	The management of DCAS was supportive of me.	3.55	1.22
	I received the right amount of support and guidance from my direct supervisor.	3.5	1.24
	I was provided with all trainings necessary for me to perform my job.	3.54	1.18
	I have learned many new job skills in this position.	3.68	1.05
	I felt encouraged by my supervisor to offer suggestions and improvements.	3.41	1.2
	The management did changes based on my suggestions and feedback.	3.15	1.17
	I was appropriately recognized when I perform well at my regular work duties.	3.24	1.21
	The DCAS rules created it easy for me to do a good job.	3.41	1.16
	I had adequate opportunities to develop my professional skills.	3.4	1.23
	My work assignments were always clearly explained to me.	3.51	1.14
Job Content	My work was evaluated based on a fair system of performance standards.	3.14	1.22
	Total	3.41	0.98
	I was satisfied with my chances for promotion.	2.8	1.32
	I had an accurate written job description.	3.43	1.2
	The amount of work I was expected to finish each week was reasonable.	3.27	1.12
	My department provided all the equipment, supplies, and resources necessary for me to perform my duties.	3.9	1.09
	The buildings, grounds and layout of this facility were adequate for me to perform my work duties.	3.74	1.13
	Total	3.43	0.98
	My coworkers and I worked well together.	4.17	1.03
	I felt I can easily communicate with members from all levels of DCAS.	3.53	1.18
Relation with Coworkers	Total	3.85	0.96

Abbreviations: SD – Standard Deviation.

Table III depicts the two domains regarding work environments, including working hours and workload. According to the results, the average working hours/week was ($M=54.47$, $SD=10.3$). This result showed that the average number of working days/weeks during COVID-19 was ($M=4.64$, $SD=0.902$). The highest mean score for items related to work extension belonged to "Did your employment include the night work?" ($M=2.79$, $SD=0.446$), and the lowest belonged to overtime

working with ($M=2.02$, $SD=0.656$). Moreover, the results indicated that the mean score of all items were above 3 (midpoint of the scale). The highest mean score belongs to "How successful were you in accomplishing what you were asked to do" with ($M=3.495$, $SD=1.047$), and the lowest mean score belonged to "How insecure, discouraged, irritated, stressed, and annoyed were you?" with ($M=3.11$, $SD=1.219$).

Table III: Descriptive statistics for working hours and also workload

Variable	item	Min	Max	Mean	SD
Work hours/	On average, how many hours per week did you work during the COVID-19 pandemic in 2020-2021? (hours/week)	24	84	54.47	10.3
	On average, how many days per week did you work during the COVID-19 pandemic in 2020-2021? (days/week)	2	6	4.64	0.902
	Did your employment include shift work?	1	3	2.72	0.513
	Did your employment include the night work?	1	3	2.79	0.446
	Did your employment include overtime work?	1	3	2.02	0.656
Workload	Did your employment include weekend work Saturday and Sunday overtime?	1	3	2.11	0.73
	How mentally demanding was at the workplace?	1	5	3.69	1.105
	How physical demanding was at the workplace?	1	5	3.92	1.056
	How hurried or rushed was the pace at the workplace?	1	5	3.71	1.137
	How successful were you in accomplishing what you were asked to do?	1	5	3.95	1.074
	How hard did you have to work to accomplish your level of performance?	1	5	3.89	1.106
	How insecure, discouraged, irritated, stressed, and annoyed were you?	1	5	3.11	1.219

Abbreviations: Min – Minimum; Max – Maximum; SD – Standard Deviation.

Table IV presents the association between socio-demographic characteristics and job satisfaction. The results showed that there was no significant association between age ($r=0.023$, $p=0.688$), gender ($t=0.422$, $p=0.659$), marital status ($Z=-0.314$, $p=0.753$), educational level ($r=-0.017$, $p=0.764$), and work position ($Z=-0.186$, $p=0.853$) and job satisfaction.

$=0.659$), marital status ($Z=-0.314$, $p=0.753$), educational level ($r=-0.017$, $p=0.764$), and work position ($Z=-0.186$, $p=0.853$) and job satisfaction.

Table IV: The association between sociodemographic characteristics and job satisfaction

Variable	Level	Job Satisfaction Score		Statistics	Significance
		Mean/ Median	SD/ IQR		
Age (years)	20-29	3.595	1.162	0.023 ^a	0.688
	30-39	3.408	0.943		
	40-49	3.519	0.874		
	≥50	3.597	0.925		
Gender	Male	3.452	0.912	0.422 ^b	0.659
	Female	3.504	1.032		
Marital status	Married	3.389	1.28	-0.314 ^c	0.753
	Not Married	3.389	1.76		
Education	Diploma	3.538	1.070	-0.017 ^a	0.764
	Bachelor's degree	3.465	0.928		
	Higher than BSc	3.407	1.003		
Work position	EMT-Basic	3.389	1.280	-0.186 ^c	0.853
	Paramedic	3.305	2.100		

Abbreviations: EMT= Emergency Medical Technicians; SD – Standard Deviation; IQR – Interquartile range.

^a = Spearman's correlation

^b = t-test value

^c = Independent-Samples Mann-Whitney U Test

The relationship between work hours pattern and job satisfaction was examined using the Pearson correlation coefficient. Table V provides the correlations between job satisfaction and workload, extended work insights (which were assessed based on shift work, night work, overtime work, and weekend work), as well as the correlations between job satisfaction and work hours and workdays (duty days) during the COVID-19 pandemic in 2021-2022. There was a significant negative correlation between job satisfaction and work hours per week ($r = -0.350$, $p < 0.001$), indicating that longer work hours during the COVID-19 pandemic were associated with lower job satisfaction. Similarly, a significant negative correlation was observed between job satisfaction and workdays per week ($r = -0.418$, $p < 0.001$), suggesting that a higher number of workdays per week was associated with lower job satisfaction. Since

the extended work insights variable represents the mean score of these four items, the correlation coefficient indicates a significant negative relationship between the extended work insights score and job satisfaction ($r = -0.218$, $p < 0.001$). The negative sign suggests that higher scores on the extended work variable (indicating more prevalent shift work, night work, overtime work, and weekend work) are associated with lower levels of job satisfaction, which indicates that the association between overall work hours and pattern, and job satisfaction score is statistically significant. Moreover, there was a significant negative correlation between job satisfaction and work hours per week ($r = -0.386$, $p < 0.001$); this means that job satisfaction tends to decrease as the workload increases.

Table V: Pearson Correlation between Job Satisfaction and Work hours/Pattern

Variable	Job satisfaction	
	Pearson Correlation	
	Coefficient	p value
Work hours	-0.350**	<0.001
Workdays	-0.418**	<0.001
Extended work	-0.218**	<0.001
Workload	-0.386**	<0.001

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Each variable was identified independently using univariate linear regression as a preliminary model. Four variables (extended work insights, work hours per week, workdays per week and workload) were significant and included in the multiple linear regression analysis. The workload had a negative standardized coefficient ($\beta = -0.057$, $t = -5.732$, $p < 0.001$), indicating that a higher workload was associated with decreased job satisfaction. Moreover, workdays per week had a

negative standardized coefficient ($\beta = -0.366$, $t = -5.021$, $p < 0.001$), indicating that experiencing workdays per week was associated with decreased job satisfaction. However, extended work insights ($\beta = -0.031$, $t = -0.96$, $p = 0.338$) and work hours per week ($\beta = -0.001$, $t = -0.204$, $p = 0.839$) did not show statistically significant standardized coefficients, suggesting no significant associations with job satisfaction (Table VI).

Table VI: Multiple linear regression analysis on factors predictors of job satisfaction

Variable	Unstandardized Coefficients		Standardized Coefficients	T value	P value	Collinearity Statistics	
	B	Std. Error				Tolerance	VIF
(Constant)	6.784	0.356		19.034	<.001		
Extended work insights	-0.03	0.031	-0.05	-0.96	0.338	0.842	1.188
Work hours per week	-0.001	0.006	-0.014	-0.204	0.839	0.457	2.189
Workdays per week	-0.366	0.073	-0.349	-5.021	<.001	0.472	2.121
Workload	-0.057	0.01	-0.303	-5.732	<.001	0.815	1.227

F=30.584, $p < 0.001$, $R^2 = 0.279$

DISCUSSION

The COVID-19 pandemic shows the resilience of health systems and countries' disaster planning and response. An efficient healthcare workforce is a vital element of a resilient health system in light of COVID-19's rapid growth (11). Despite high internal motivations and being action-oriented and highly committed to their work, pre-hospital care workers were found to have reduced job satisfaction, work engagement, and career changes during the COVID-19 pandemic due to new aspects of a changing work environment (12). This study examined the level of job satisfaction and its associated factors among PHCs in DCAS, United Arab Emirates.

This study indicates that during the COVID-19 pandemic, the majority of PHCs had moderate levels of work satisfaction. Prior to the pandemic, contrasting results were found regarding healthcare providers' work satisfaction. For instance, research done in Saudi Arabia (15) and the United Arab Emirates (13, 14) before the COVID-19 pandemic revealed that PHCs and other healthcare personnel had high to moderate work satisfaction. Nonetheless, prior to the COVID-19 pandemic, some research indicated low job satisfaction among healthcare professionals (16–18). Nonetheless, a study in Germany reported that many healthcare providers reported low job satisfaction during the COVID 19 pandemic (19). The general level of job satisfaction, both intrinsic and extrinsic, was found to be average among Turkish nurses (20). Nonetheless, compared to nurses who did not provide patient care during the COVID-19 pandemic, nurses who did reported lower levels of satisfaction (20). Another study found that nurses who take care of patients during the COVID-19 pandemic had lower job satisfaction than other nurses (21). These findings illustrate how clear expectations and organizational support serve as protective factors against job dissatisfaction, particularly during times of crisis when healthcare systems are strained. Integrating insights from coworker relationships and job content, it becomes evident that supportive interactions and well-structured job environments work synergistically to enhance healthcare workers' overall job satisfaction (17).

Many factors can explain the variations in the level of job satisfaction between the studies, including organisational support, public beliefs, religion, culture, and healthcare provider attitudes. Sociodemographic characteristics of healthcare workers are identified as a driver of job satisfaction (22,23). In the current study, no significant relationship was found between PHCs' job satisfaction and socio-demographic characteristics. These results were confirmed by other studies that found no relationship between sociodemographic characteristics and job satisfaction (24, 25). However, this study contrasts with the results of a study conducted in Jordan by Alrawashdeh et al. (26), which found a

strong relationship between age and job satisfaction, with the level of job satisfaction increasing with age ($p = 0.017$), suggesting that older healthcare workers tend to report higher levels of job satisfaction. This indicates that while some regions may show differing trends, age can be a significant factor in specific contexts.

The results of the study in relation to gender showed no statistically significant difference in average job satisfaction between men and women. However, this contrasts with the results of Luo's study (27), which found that female healthcare providers had lower job satisfaction than male healthcare providers. This discrepancy highlights a critical perspective on gender disparities in the workplace. Women reported inequalities in income, promotion, benefits, support, education, sick leave and sexual harassment in a variety of work environments (28). This suggests that while overall job satisfaction may not differ statistically between genders in some studies, the qualitative experiences and challenges faced by women can lead to lower satisfaction levels. When these inequalities exist, they can also have a negative impact on job satisfaction.

Moreover, the study found no statistically significant relationship between marital status and job satisfaction. These results are consistent with another study conducted in Jordan, which found no significant relationship between job satisfaction and marital status ($p = 0.562$) (26). However, married workers have significantly higher job satisfaction, according to Barili et al. (29), who also found no significant correlation between education and job satisfaction ($p = 0.764$).

In addition, the results of this study are consistent with those of Tekingöndüz et al. (24), who found no significant relationship between education and job satisfaction. This perspective emphasizes that while higher education can provide access to better job opportunities, it does not guarantee greater satisfaction in those roles. However, they differ from those of Şenturan et al. (30), who found a negative relationship ($\beta = -0.24$, $p < 0.001$) between education level and job satisfaction and who also found no statistically significant correlation between participants' job position and job satisfaction. This finding indicates that as education levels increase, job satisfaction may decrease, which reflects the complexities of job demands faced by highly educated individuals. These contrasting findings underscore the need for a nuanced understanding of how education impacts job satisfaction. The interplay between educational attainment, job resources, and demands is critical; individuals with higher education often face greater expectations and pressures that can negatively impact their job satisfaction.

Finally, the results of this study are consistent with those of Alrawashdeh et al. (26). Physicians working in COVID-19-related specialties reported lower levels of job satisfaction than professionals with leadership

roles; in these cases, job satisfaction is positively related to the perception of higher income and holding a leadership/coordination role (29). These insights underscore the importance of addressing both financial and psychological factors to improve job satisfaction among healthcare professionals, especially in high-stress environments, especially in high-stress situations like the COVID-19 pandemic.

Many healthcare professionals are struggling with a heavy workload, long working days and little downtime due to the COVID-19 pandemic. In many countries, the number of hospitalisations is rising sharply, leading to a significant need for overtime (31). In some countries, healthcare staff are subject to leave restrictions to ensure that there are always enough staff available to fight the COVID-19 pandemic. When looking at the correlation coefficients, a negative relationship was found between hours worked per week, days worked per week, extended work insight score and hours worked per week with job satisfaction. Similarly, previous research has shown that overtime has a negative impact on job satisfaction and the general well-being of healthcare workers (32, 33). In a study of nurses conducted before the pandemic, Ball et al (34) found that longer shifts were associated with higher levels of dissatisfaction and poorer ratings of quality of care and omitted care. According to recent research, treating suspects and infected individuals during the COVID-19 pandemic was very stressful for healthcare workers, which negatively impacted their job satisfaction (35, 36). Meanwhile, in another study, overwhelming workload was found to be an important factor in healthcare workers' feelings of worry, fatigue and dissatisfaction with their work (37). The surge in patient numbers, extended working hours, and heightened stress levels have collectively diminished job satisfaction among healthcare professionals. Many found their work-life balance severely disrupted, as personal time was sacrificed to meet the relentless demands of their roles, exacerbating stress and frustration. Additionally, the increased workload often meant prioritizing urgent patient care over quality interactions and thorough medical practices, leaving workers feeling less fulfilled and effective in their professional duties. Feelings of being undervalued were prevalent, as HCWs sometimes felt their extraordinary efforts were not adequately recognized, compensated, or supported by management. Strained relationships with supervisors, lack of effective communication, and limited resources further intensified these issues. Moreover, the heightened risk of infection, fear of spreading the virus to loved ones, and inadequate protective measures in some settings created a constant sense of vulnerability, contributing to emotional distress and dissatisfaction.

This study has a few limitations. Firstly, this study is subject to certain limitations. A self-report questionnaire was used to collect data, so participants were more inclined to give answers that were accepted in society.

Consequently, it is impossible to verify the validity of the answers. Secondly, the results of this study cannot be generalised to other settings in the UAE as it was limited to a specific setting. It is recommended that a similar study be conducted after the COVID-19 pandemic to provide further explanation on cooperation and completion of the questionnaires and to compare the results in other conditions.

CONCLUSIONS

The current study's findings demonstrated that work-related variables, such as extended workdays and a heavy workload during the COVID-19 pandemic, might have a detrimental impact on healthcare quality and lead to a decline in job satisfaction. Therefore, in such crucial circumstances, these characteristics must be recognized and controlled in order to boost job satisfaction. It is important to talk about employee support networks at the organizational, national, and administrative levels. The most crucial thing is to use coping mechanisms to lessen effort and extend work hours during infectious disease pandemics with the help of managers, caregivers, and coworkers. Healthcare professionals who deal with occupational health and infectious diseases must develop programs for carers to support healthcare workers appropriately, which will increase job satisfaction, and put in place coping management strategies to lessen the strain that infectious disease outbreaks place on their jobs. Holistic crisis management strategies are essential to address systemic challenges exposed during the pandemic. These should include fostering public-private partnerships to enhance resource allocation, mobilizing volunteers to support overstretched teams, and refining risk management protocols to improve emergency preparedness. Simulation-based training programs can help prepare healthcare workers for high-stress scenarios, building their technical skills and psychological resilience to perform effectively during crises. Finally, continuous feedback mechanisms should be established to engage with staff regularly. Surveys and focus groups can provide valuable insights into workers' concerns and experiences, enabling organizations to refine their policies and tailor interventions accordingly. This ongoing engagement fosters a sense of inclusion and ensures that organizational strategies remain aligned with workforce needs.

ACKNOWLEDGEMENT

The study's participants are all sincerely acknowledged by the authors. We appreciate permission to publish the results from the Director General of Dubai Corporation for Ambulance Services, United Arab Emirates.

REFERENCES

1. Wiersinga WJ, Rhodes A, Cheng AC, Peacock

- SJ, Prescott HC. Pathophysiology, transmission, diagnosis, and treatment of coronavirus disease 2019 (COVID-19): a review. *JAMA*. 2020;324(8):782–93. <https://doi.org/10.1001/jama.2020.12839>
2. Razu SR, Yasmin T, Arif TB, Islam MS, Islam SMS, Gesesew HA, Ward P. Challenges faced by healthcare professionals during the COVID-19 Pandemic: A qualitative inquiry from Bangladesh. *Front Public Health*. 2021;9:647315. <https://doi.org/10.3389/fpubh.2021.647315>
3. Sengupta M, Roy A, Ganguly A, Baishya K, Chakrabarti S, Mukhopadhyay I. Challenges encountered by healthcare providers in COVID-19 Times: An exploratory study. *J Health Manag*. 2021;23(2):339–356. <https://doi.org/10.1177/09720634211011695>
4. Scheepers RA, Boerebach BC, Arah OA, Heineman MJ, Lombarts KM. A systematic review of the impact of physicians' occupational well-being on the quality of patient care. *Int J Behav Med*. 2015;22:683–98. <https://doi.org/10.1007/s12529-015-9473-3>
5. Spetz J, Hailer L, Gay C, Tierney M, Schmidt L, Phoenix B, Chapman S. Changes in US clinician waivers to prescribe buprenorphine management for opioid use disorder during the COVID-19 pandemic and after relaxation of training requirements. *JAMA Network Open*. 2022;5(5):e225996. <https://doi.org/10.1001/jamanetworkopen.2022.5996>
6. Dubai Corporation for Ambulance Services (DCAS). The Dubai Corporation for Ambulance Services processed 232163 cases in 2021, 2022. Available from <https://www.ambulance.gov.ae/en-us/Pages/newsDetail.aspx?newsid=1342>
7. Amini H, Isanejad A, Chamani N, Movahedi-Fard F, Salimi F, Moezi M, Habibi S. Physical activity during COVID-19 pandemic in the Iranian population: A brief report. *Heliyon*. 2020;6(11):e05411. <https://doi.org/10.1016/j.heliyon.2020.e05411>
8. Zhu N, Zhang D, Wang W, Li X, Yang B, Song J, Zhao X, Huang B, Shi W, Lu R, Niu P. A novel coronavirus from patients with pneumonia in China, 2019. *N Engl J Med*. 2020;382(8):727–33. <https://doi.org/10.1056/NEJMoa2001017>
9. Sax J, Torp SS. Speak up! Enhancing risk performance with enterprise risk management, leadership style and employee voice. *Management Decision*. 2015;53(7):1452–68. <https://doi.org/10.1108/MD-10-2014-0625>
10. Alpern R, Canavan ME, Thompson JT, McNatt Z, Tatek D, Lindfield T, Bradley EH. Development of a brief instrument for assessing healthcare employee satisfaction in a low-income setting. *PloS One*. 2013;8(11):e79053. <https://doi.org/10.1371/journal.pone.0079053>
11. Li Z, Ge J, Yang M, et al. Vicarious traumatization in the general public, members, and non-members of medical teams aiding in COVID-19 control. *Brain Behav Immun* 2020;88:916–919. <https://doi.org/10.1016/j.bbi.2020.03.007>
12. Rivard MK, Cash RE, Woodyard KC, Crowe RP, Panchal AR. Intentions and motivations for exiting the emergency medical services profession differ between emergency medical technicians and paramedics. *J Allied Health*. 2020;49(1):53–9.
13. El-Salibi, B. A. Job satisfaction among registered nurses working in UAE Ministry of Health hospitals: demographic correlates (Doctoral dissertation, The British University in Dubai (BUiD)); 2012.
14. Al Badi FM, Cherian J, Farouk S, Al Nahyan M. Work engagement and job performance among nurses in the public healthcare sector in the United Arab Emirates. *J Asia Bus Stud*. 2023;17(5):1019–41. <https://doi.org/10.1108/JABS-06-2022-0216>
15. Aldrees T, Al-Eissa S, Badri M, Aljuhayman A, Zamakhshary M. Physician job satisfaction in Saudi Arabia: insights from a tertiary hospital survey. *Ann Saudi Med*. 2015;35(3):210–3. <https://doi.org/10.5144/0256-4947.2015.210>
16. Alshmemri M, Shahwan-Akl L, Maude P. Job satisfaction of Saudi nurses working in Makkah region public hospitals, Saudi Arabia. *Life Sci*. 2016;13(12):22–33. <https://doi.org/10.7537/marslsj131216.05>
17. Alqahtani A, Nahar S, Almosa K, Almusa AA, Al-Shahrani BF, Asiri AA, Alqarni SA. Leadership styles and job satisfaction among healthcare providers in primary health care centers. *Middle East J Fam Med*. 2021;19(3): 102–113. <https://doi.org/10.5742/MEWFM.2021.94013>
18. Cunningham R, Westover J, Harvey J. Drivers of job satisfaction among healthcare professionals: a quantitative review. *Int J Healthc Manag*. 2023;16(4):534–42. <https://doi.org/10.1080/20479700.2022.2126671>
19. Dreher A. Job-related stressors and working conditions of employees in the German healthcare sector during the SARS-CoV-2 pandemic (Doctoral dissertation, Universitäts- und Landesbibliothek der Heinrich-Heine-Universität Düsseldorf); 2023.
20. Bayer N, Golbasi Z, Uzuntarla Y, Akarsu K. Job satisfaction, burnout and turnover intention of nurses working in hospital during the pandemic COVID-19 in Turkey. *J Clin Med Kaz*. 2021;18(6):69–75. <https://doi.org/10.23950/jcmk111347>
21. Savitsky B, Radomislensky I, Hendel T. Nurses' occupational satisfaction during Covid-19 pandemic. *Appl Nurs Res*. 2021;59:151416. <https://doi.org/10.1016/j.apnr.2021.151416>
22. Domagała A, Bała MM, Storman D, Peña-Sánchez JN, Świercz MJ, Kaczmarczyk M, Storman M. Factors associated with satisfaction of hospital physicians: a systematic review on European data. *Int J Environ Res Public Health*. 2018;15(11):2546. <https://doi.org/10.3390/ijerph15112546>

23. Lu H, Zhao Y, While A. Job satisfaction among hospital nurses: A literature review. *Int J Nurs Stud*. 2019;94:21–31. <https://doi.org/10.1016/j.ijnurstu.2019.01.011>
24. Teking nd z S, Mehmet TO, Sezkin M. Analysing the relationship between job satisfaction, performance, job stress and the intention to leave: Hospital case, in Turkish. *Verimlilik Dergisi*. 2015;11(4):39–64.
25. Tuna H, T rkmen OO, Albayrak S. A study on the relationship between sociodemographic characteristics and job stress and satisfaction among healthcare workers in Turkey during the COVID-19 pandemic. *Arh Hig Rada Toksikol*. 2023;74(1):42–7. <https://doi.org/10.2478/aiht-2023-74-3672>
26. Alrawashdeh HM, Al-Tammemi AA, Alzawahreh MK, Al-Tamimi A, Elkholy M, Al Sarireh F, Abusamak M, Elehamer NM, Malkawi A, Al-Dolat W, Abu-Isma l L. Occupational burnout and job satisfaction among physicians in times of COVID-19 crisis: a convergent parallel mixed-method study. *BMC Public Health*. 2021;21:1–8. <https://doi.org/10.1186/s12889-021-10897-4>
27. Lu Y, Hu X-M, Huang X-L, Zhuang X-D, Guo P, Feng L-F, et al. Job satisfaction and associated factors among healthcare staff: a cross-sectional study in Guangdong Province, China. *BMJ Open*. 2016;6:e011388. <https://doi.org/10.1136/bmjopen-2016-011388>
28. Harnois CE, Bastos JL. Discrimination, harassment, and gendered health inequalities: do perceptions of workplace mistreatment contribute to the gender gap in self-reported health?. *J Health Soc Behav*. 2018;59(2):283–99. <https://doi.org/10.1177/0022146518767407>
29. Barili E, Bertoli P, Grembi V, Rattini V. Job satisfaction among healthcare workers in the aftermath of the COVID-19 pandemic. *Plos One*. 2022;17(10):e0275334. <https://doi.org/10.1371/journal.pone.0275334>
30.  enturan L, G rel A,  zt rk M, Eker S,  ababl  Y. The relationship of burnout and job satisfaction of nurses who work in private dialysis units, in Turkish. *J Nephrol Nurs*. 2011;8(1):42–49.
31. Public Services International. French health workers face rapid escalation of cases; 2020. Available from <https://publicservices.international/resources/news/french-health-workers-face-rapid-escalation-of-cases-?id=10649&lang=en>
32. Djupedal IL, Pallesen S, Harris A, Waage S, Bjorvatn B, Vedaa  . Changes in the work schedule of nurses related to the COVID-19 pandemic and its relationship with sleep and turnover intention. *Int J Environ Res Public Health*. 2022;19(14):8682. <https://doi.org/10.3390/ijerph19148682>
33. Lee BE, Ling M, Boyd L, Olsson C, Sheen J. The prevalence of probable mental health disorders among hospital healthcare workers during COVID-19: A systematic review and meta-analysis. *J Affect Disord*. 2023; 330(1):329–345. <https://doi.org/10.1016/j.jad.2023.03.012>
34. Ball J, Day T, Murrells T, Dall’Ora C, Rafferty AM, Griffiths P, Maben J. Cross-sectional examination of the association between shift length and hospital nurses job satisfaction and nurse reported quality measures. *BMC Nurs*. 2017;16(1):1–7. <https://doi.org/10.1186/s12912-017-0221-7>
35. Cao J, Wei J, Zhu H, Duan Y, Geng W, Hong X, Jiang J, Zhao X, Zhu B. A study of basic needs and psychological wellbeing of medical workers in the fever clinic of a tertiary general hospital in Beijing during the COVID-19 outbreak. *Psychother Psychosom*. 2020;30(1):252–254. <https://doi.org/10.1159/000507453>
36. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, et al. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Netw Open*. 2020;3(3):e203976. <https://doi.org/10.1001/jamanetworkopen.2020.3976>
37. Pappa S, Ntella V, Giannakas T, Giannakoulis VG, Papoutsis E, Katsaounou P. Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis. *Brain Behav Immun*. 2020;88: 901–907. <https://doi.org/10.1016/j.bbi.2020.05.026>