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ORIGINAL ARTICLE

Person-centered five burnout profiles of physicians and physicians in training at a secondary hospital in Abu Dhabi: a cross-sectional study

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ABSTRACT

Background: Burnout among health-care workers have become a notable global health and safety challenge. This phenomenon reflects mental and physical burden on healthcare staff. The Maslach Burnout Inventory tool is a structured and validated tool that has been used to objectively assess burnout. The aim of this study was to determine the prevalence of burnout among physicians working in Mafraq Hospital, Abu Dhabi, United Arab Emirates (UAE) and to understand the possible underlying factors.

Methods: A cross-sectional survey study was conducted incorporating the Maslach Burnout Inventory Human Services Survey for Medical Personnel tool. A questionnaire was sent via an anonymous e-mail to all physicians at Mafraq Hospital. Participating physicians were categorized as part of a 5-class profile continuum ranging from "engaged" to "burnout".

Results: Burnout prevalence among Mafraq physicians was 11.24% (19 of the 169). The rate of burnout was higher among resident physicians (17%) than non-resident physicians (8.5%). Majority of physicians were "overextended" (55 of 169; 32.5%). Mafraq physicians were noted to be more emotionally exhausted than the healthcare worker comparison group provided by Mind Gardens. It was also found that males, young participants, unmarried, and smokers had a higher rate of burnout.

Conclusion: The burnout among Mafraq physicians using the person centered five burnout profiles model was analyzed which helped in mapping out employee from burnout to engaged. A prevalence of 1 in 10 Mafraq physicians for burnout was determined. A strategy to proactively prevent burnout among physicians and healthcare workers in UAE is needed at an organizational level.

Keywords: Burnout, fatigue, Maslach Burnout Inventory, patient safety, physicians.

Introduction

Burnout was initially described in the 1970's by Freudenberger [1] as a combination of cognitive, judgmental, and emotional factors. Early studies in the 1980s on burnout were based on personal interviews, case studies, and anecdotal experience, then spearheaded psychometric analyses to find methods to objectively study and define burnout [2]. Three aspects to burnout were identified-exhaustion [emotional exhaustion (EE)], cynicism [depersonalization (DP)], and inefficacy [personal accomplishment (PA)] [3]. EE is loss of enthusiasm for work, DP is feeling negative, detached from the job and reduced empathy, and PA is reduced sense that one's work and accomplishments are meaningful, this is in essence defined as "Burnout" as described by Maslach et al. [2]. All three dimensions are on a seven-Likert scale (from zero to six), where zero means never and six means every day [4]. Scoring four in EE means that the individual feels emotionally exhausted once a week which should be concerning, while scoring

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four in PA is very positive as it means that an induvial feels accomplished once every week [5].

Later on, a transactional model suggested burnout to be contributed by an imbalance between job stressors, individual strain, and defensive coping [2]. This was followed by the development of a person - centered five burnout profiles model based on individual scores on the three dimensions (EE, DP, and PA), this model suggested a continuum between engagement at one end and burnout at the other, in the middle, were the intermediate profiles of ineffective, overextended, and disengaged [5]. This removed arbitrary cut-offs of low, moderate, and high risk of burnout that were widely used in the literature.

An "engaged" profile scores well on all three scales, i.e., low scores on EE, DP, and high on PA. An "ineffective" profile has a normal EE and DP scores with low PA score, this is marked by reduced feelings of competence and successful achievement in one's work and reflects a loss of confidence in one's abilities, perhaps from working in an environment that offers little recognition for a job well done. An "overextended" profile has a high EE score with normal DP and PA scores, and it describes a worker who is dedicated to their job and is generally satisfied by the work they produce but feels emotionally exhausted due to long hours and disrupted recovery times. The "disengaged" worker has a normal EE, high DP score, and normal PA scores, therefore; they have a crisis of values and often lack confidence in management and usually they are energetic and confident personalities but find it difficult to dedicate themselves to their work. Finally, the "burnout" profile has high EE and DP scores and low PA scores.

The 11th revision of International Classification of Diseases describes burnout as an "occupational phenomena" rather than a medical condition [6]. When demands of a situation far exceed the resources of the individual resulting in an inability to cope, occupational stress sets in, this cumulative stress could lead to burnout [2]. It is well documented that the staff exposed to intense patient and goal-directed environments could find their enthusiasm and energy replaced by a lack of interest, cynicism, and reduced commitment leading to professional incompetence. This could impact staff productivity, job satisfaction, patient safety and quality of care, staff turnover, as well as personal well-being [7].

The Maslach Burnout Inventory - Human Services Survey for Medical Professionals also known as MBI-HSS (MP) is designed specifically for medical personnel. It uses a survey that is designed to assess the emotional aspects leading to burnout syndrome on three scales. Separate subscales further measure these aspects. EE measures the level of an individual's state of exhaustion due to demands at work. The DP scale reveals the levels of detachment towards the recipients of health care services Finally, the PA scale is used to assess the subject's feelings related to incompetence or achievements regarding their work [5].

In a systematic review of burnout among healthcare providers in the Middle East, the authors reported an estimated prevalence of burnout among healthcare workers in the Middle East of 40%-60%. They associated this with characteristics of their work environments, exposure to violence and terror, emotional distress and low social support [7]. Elbarazi et al. [7] conducted another Arab-centric systematic review to study the prevalence and factors of burnout of healthcare professionals in the Arab world, including studies done in Bahrain, Yemen, Saudi Arabia, Egypt, Jordan, Lebanon and Palestine. Their results found a wide-ranging moderate to high levels of self-reported burnout. Factors that were found to have significant association with burnout were variable based on the region, though the common factor was working environment being stressful [7].

While another multicenter, cross-sectional study conducted in the United Arab Emirates (UAE), found that 75.5% of medical residents had a level of moderate-to-high EE, 84% showed high DP, and 74% had a low sense of PA. Almost 83% medical residents, who had depression, also had burnout syndrome and among factors that were determined as predictive of burnout were long working hours (>40/week) and frequent on-calls. The results concluded a high level of burnout, with recommendations calling for professional interventions such as counselling services and reducing working hours [4].

Harmful consequences of burnout in healthcare professionals are well described in the literature and impact not just staff, but also their workplace and patients. Staff could be impacted with adverse mental health, impaired cognitive functioning, staff conflict, poor coping, poor attendance records, and substance misuse [8]. For patients, this could cause poor quality of patient care, decreased patient safety, and increased medical errors [9].

This study aimed to measure the prevalence of burnout among the clinical specialties in Mafraq Hospital using the Maslach Burnout Inventory Human Services Survey (MBI-HSS) and understand the possible underlying factors among Mafraq Hospital physicians that might be reflective of other hospitals in UAE. It was proposed that this study will allow healthcare leaders in Abu Dhabi and UAE to evaluate, intervene and manage burnout through solutions that impact the wellbeing of physicians, quality of service and patient care provided.

Subjects and Methods

An observational cross-sectional study design using the validated MBI-HSS (MP) secured from the proprietors "Mind Garden, Inc. Menlo Park, CA" via a commercial license. A structured questionnaire, with 22 questions in a 6-point Likert scale layout along with an additional set of customized questions covering physician demographics and socio-demographic characteristics, was distributed to all physicians working at Mafraq Hospital via an email link.

Mafraq Hospital is a tertiary care government hospital in Abu Dhabi, UAE that consisted of 380 beds and was considered a level 1 trauma center in Abu Dhabi. There were 383 physicians and an average influx of 350,000 patients per year at the time of study.

For a population estimate of 383 physicians, with a reported prevalence of approximately 60%, and an

Table 1. *Burnout profile of the Mafraq Hospital physician group compared to a general population of workers and medical workers.*

Category	Number of participants	Emotion exhaustion mean (SD)	DP mean (SD)	PA mean (SD)	Burnout profile
Mafraq Hospital physician population	169	2.7 (1.4)	1.3 (1.1)	4.6 (1)	Ineffective
General population in the human services profession	11,000+	2.3 (1.2)	1.7 (1.2)	4.3 (0.9)	Ineffective
Medical workers (physician and nurses)	1,104	2.5 (1.1)	1.4 (1)	4.6 (0.9)	Ineffective

accepted absolute deviation of sample rate of 5%, at the 95% confidence interval, a sample size to be 183 people was estimated. This incorporated a reported survey response rate for population-based studies of approximately 50%. Data collection occurred between November 2019 and January 2020.

As part of the license, Mind Garden, Inc. provided average scale scores and standard deviations (SD) for EE, DP, and PA for all variables studied as mean and SD, in addition, raw data was also received, which provided anonymized individual participant results in the form of scores for EE, DP, and PA. Frequency scores from a general population of 11,000 people in human services professions internationally were provided for comparison. In addition, frequency scores from 1,104 international medical workers (doctors and nurses) were also provided.

Results were tabulated for Mafraq Hospital physicians comparing them to the general population of human services professionals and a distinct medical workforce of physicians and nurses. Burnout profiles were derived based on socio-demographic characteristics. Comparisons between socio-demographic variables and the three MBI subsets of EE, DP, and PA were expressed as absolute numbers and percentage.

Results

A total of 169 physicians responded to the MBI-HSS survey within the study period, the response rate being 44.1% - which is lower than what we aimed for 183 (50%). In the survey, the prevalence of burnout was 11.24% (19/169). These physicians were described as having high levels of EE and DP. Applying the new suggested person centered five burnout profile to Mafraq hospital sample, Figure 1 lists the burnout profiles of our physicians cohort [5].

Most of the physicians were categorized as "overextended" (32.5%, 55/169). This describes a profile where physicians were dedicated to their job and have a strong sense of accomplishment, but they were emotionally exhausted. As a summative group, Mafraq Hospital physicians were categorized as "ineffective" on the 5-class model which was comparable to the general population and medical workers groups. On comparing the EE, DP, and PA scores of the Mafraq hospital physicians to data provided by Mind Garden, Inc. for 1,104 medical workers, it was found there were similar numerical levels for the two groups for DP (of 1.3 which means an individual feels detached from work or providing service few times per

Table 2. *Baseline characteristics of participants including social factors and specialty (n = 169).*

Gender	
Male	95 (56.2%)
Female	74 (43.8%)
Age	
20-30 years	45 (26.6%)
31-40 years	41 (24.3%)
More than 40 years	83 (49.1%)
Marital status	
Single	42 (24.9%)
Married	127 (75.1%)
Designation	
Resident	52 (30.8%)
Non-resident	117 (69.2%)
Specialties	
Emergency medicine	39 (23.07%)
Internal medicine and medical specialties	36 (21.30%)
General surgery	7 (4.14%)
Paediatrics	27 (15.97%)
Paediatric surgery	2 (1.18%)
Orthopaedic surgery	4 (2.36%)
Ear, Nose and Throat (ENT)	6 (3.55%)
Ophthalmology	11 (6.50%)
Obstetrics and gynaecology	11 (6.50%)
Neurosurgery	5 (2.95%)
Radiology	5 (2.95%)
Cardiology	6 (3.55%)
Critical care	10 (5.91%)
Smokers	
Yes	17 (10%)
No	152 (90%)
Chronic medical illness	
Yes	32 (18.9%)
No	137 (81.06%)
Mental health illness	
Yes	8 (4.73%)
No	161 (95.26%)
Years of experience after primary medical qualification	
Less than 1 year	7 (4.14%)
1-5 years	35 (20.71%)
More than 5 years	127 (75.14%)

year or less) and PA (of 4.6 which means individual feels accomplished once a week to few times per week), but the Mafraq Hospital workforce was more emotionally exhausted than the 1,104 medical workers (2.7 which means that an individual feels stressed and overwhelmed once a month or few times a month) (Table 1).

A total of 95 physicians (56.2%) in the study were male and 74 were female physicians (43.8%). Around 45 physicians (26.6%) were from the age group of 20-30 years and 41 physicians (24.3%) were in the ages ranging from 31 to 40 years. Of the 169 participants, 127 physicians (75.1%) were married and 152 (90%) were non-smokers. Furthermore, 32 (18.9%) physicians reported chronic medical illnesses like diabetes, hypertension, and asthma. There were 8 (4.7%) physicians who reported having a mental health illness. There were 52 (30.8%) physicians in training period and 117 (69.2%) physicians who had either completed training (consultants and specialists) or were non-training grade physicians (designated at general practitioners). In the category of years of experience after primary medical qualification, most physicians completing the survey (75.1%) had more than 5 years of experience. The physicians were also characterized by their specialty; of which 39 emergency physicians (23.1%) participated in the study and were the largest group of participants (Table 2).

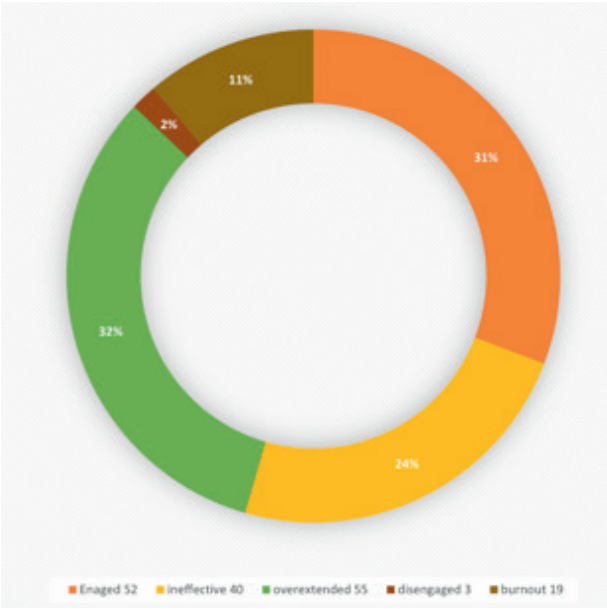

Figure 1. *Mafraq Hospital physicians Burnout profile.*

It was found that males had a higher burnout rate (13.6%) than female physicians (8.1%). Younger physicians (20-30 years) had higher burnout rate (17.7%) than physicians older than 30 years. Physicians who were un-married had higher burnout rate (16.6%) than married physicians (9.4%). Majority of the participating physicians were non-smokers and they had lower burnout rate (9.21%) than smokers (29.4%). Physicians who reported a chronic medical illness had slightly lower burnout rate (9.3%). On the other hand, physicians who reported mental health illness, their burnout rate was high (12.5%) (Table 3).

Out of the 169 physicians who took the survey, 52 were residents. The rate of burnout among residents was high (17.3%) in comparison to non-resident physicians (8.5%). When looking at burnout rate based on years of experience it was noted that the least years of experience (less than 1 year) had the highest rate of burnout (28.57%). Burnout rate based on speciality was highest among orthopedics physicians (25%) followed by emergency medicine physicians (EMP) (23.07%). When EMP was compared to internal medicine (n = 36) and pediatrics (n = 27); their burnout rate was 11.11% and 7.40%, respectively, thus, it was concluded that EMP had a very high burnout rate. Interestingly, obstetrics and gynecology, neurosurgery, cardiology and radiology physicians had 0% burnout rate (Table 4).

Table 3. *Burnout profile by socio-demographic variables.*

	Category	*N*	Burnout profile				
			Burnout (%)	Engaged (%)	Ineffective (%)	Overextended (%)	Disengaged (%)
Gender	Male	95	13 (13.6)	31 (32.6)	27 (28.4)	23 (24.2)	1 (1.05)
	Female	74	6 (8.1)	21 (28.3)	13 (17.5)	32 (43.2)	2 (2.7)
Age (years)	20-30	45	8 (17.7)	8 (17.7)	8 (17.7)	19 (42.2)	2 (4.4)
	31-40	41	4 (9.7)	7 (17.07)	14 (34.1)	16 (39.02)	0 (0)
	>40	83	7 (8.43)	36 (43.37)	18 (21.68)	20 (24.09)	1 (1.2)
Marital status	Married	127	12 (9.4)	46 (36.2)	29 (22.8)	38 (29.9)	2 (1.5)
	Single	42	7 (16.6)	6 (14.2)	11 (26.1)	17 (40.4)	1 (2.3)
Smoking	Yes	17	5 (29.4)	2 (11.7)	0	10 (58.8)	0
	No	152	14 (9.21)	50 (32.8)	40 (26.3)	45 (29.6)	4 (2.6)
Chronic Medical illness	Yes	32	3 (9.3)	11 (34.3)	7 (21.8)	11 (34.3)	0
	No	137	16 (11.2)	41 (29.9)	33 (24.08)	44 (32.11)	3 (2.18)
Mental Health Illness	Yes	8	1 (12.5)	2 (25)	1 (12.5)	4 (50)	0
	No	161	18 (11.1)	50 (31.05)	39 (24.22)	51 (31.67)	3 (1.86)

Table 4. *Burnout profile by designation, years of experience, and specialty.*

Criterion	Category	*N*	Burnout profile				
			Burnout (%)	Engaged (%)	Ineffective (%)	Overextended (%)	Disengaged (%)
Designation	Resident	52	9 (17.3)	12 (23.07)	9 (17.3)	20 (38.4)	2 (3.84)
	Non-resident	117	10 (8.54)	40 (34.18)	31 (26.49)	35 (29.91)	1 (0.85)
Years of experience	Less than 1 year	7	2 (28.57)	1 (14.28)	1 (14/28)	2 28.57)	1 (14.28)
	1-5 years	35	5 (14.28)	7 (20)	8 (22.85)	14 (40)	1 (2.8)
	More than 5 years	127	12 (9.44)	44 (34.64)	31 (24.40)	39 (30.70)	1 (0.78)
Specialty	EM	39	9 (23.07)	10 (25.64)	8 (20.51)	11 (28.20)	1 (2.56)
	Internal Medicine (IM) and medical specialist	36	4 (11.11)	9 (25)	11 (30.55)	12 (33.33)	0 (0)
	General surgery	7	1 (14.28)	2 (28.57)	2 (28.57)	2 (28.57)	0 (0)
	pediatrics	27	2 (7.40)	6 (22.22)	5 (18.51)	13 (48.14)	1 (3.70)
	Pediatric surgery	2	1 (50)	0 (0)	1 (50)	0 (0)	0 (0)
	Orthopedics	4	1 (25)	2 (50)	1 (25)	0 (0)	0 (0)
	ENT	6	0 (0)	2 (33.33)	2 (33.33)	2 (33.33)	0 (0)
	Ophthalmology	11	1 (9.09)	6 (54.54)	3 (27.27)	1 (9.09)	0 (0)
	Obstetrics and gynecology	11	0 (0)	6 (54.54)	1 (9.09)	4 (36.36)	0 (0)
	Neurosurgery	5	0 (0)	2 (40)	2 (40)	1 (20)	0 (0)
	Radiology	5	0 (0)	3 (60)	0 (0)	2 (40)	0 (0)
	Cardiology	6	0 (0)	2 (33.33)	2 (33.33)	1 (16.66)	1 (16.66)
	Critical care	10	1 (10)	2 (20)	2 (20)	5 (50)	0 (0)

Discussion

In this study, the prevalence of "burnout" was 11.24% (19/169), which means that 1 out of 10 physicians was suffering from burnout. Reported burnout prevalence among physicians in the literature is heterogenous partly due to the lack of consensus on burnout definition as well as the heterogenous populations studied [10,11]. A great example is comparing the resident physicians results to a recent study among resident physicians in UAE that defined burnout based on the old definition of mild, moderate, and high-level burnout where a score of ≥27 on the EE subscale and/or ≥10 on the DP subscale was considered as moderate to high-level burnout [4]. Based on that definition it was found that 75% of their residents had moderate to high burnout. If the same definition is used in the current study, then 90% of the current study residents would be having moderate to high burnout. However, if the current 5 burnout profile model is considered then only 17% of the resident physicians in the current study have burnout [4]. Hence, one shall be cautious in comparing burnout prevalence rate among studies and ensure using the same definition for results to be comparable. In a study among family physicians in Europe where they used MBI-HSS and they received responses from 1,300 physicians, 43% physicians scored high for EE and 35.3% scored high for DP, in the current non-resident physicians group 39.3% scored high for EE and 22.2% scored high for DP [12]. On the other hand in the European study 35.1% physicians did not score high for burnout in any dimension while in the current study it was 43.5% who did not score high for burnout in any dimension [12].

Furthermore, the current study physicians were categorized as "ineffective" which was comparable to the general population and medical workers group data provided by mind garden. This is not surprising as "ineffective" means a person is in good relationship with work however, it is in status que and not highly engaged yet not at risk of burnout [5]. On the Burnout subscales comparison, Mafraq Hospital workforce was more emotionally exhausted than the 1,104 medical workers (2.7 out of 7 which means that an individual feels stressed and overwhelmed once a month or few times a month) (p-value = 0.0345). Literature correlated EE among physicians to workload, work conflicts, violence and lack of autonomy [13]. Thus, it is unclear which of these factors is contributing towards higher EE in the Mafraq physicians group in the current study.

Exploring the various socio-demographics factors and its relationship to burnout, it was found that rate of burnout was higher in males (13.6%) as compared to females (8.1%). On the other hand, females were noted to have majority in the overextended category (43.2%), while

majority of males were in the engaged group (32.6%). It should be noted, contrary to published literature female gender was not found to be associated with "burnout" [13,14]. This might be due to the efforts and regulations set by the UAE government to empower and support female workers in general and professionals in particular in healthcare and all other industries [15].

Age and burnout has been described as bimodal where those younger than 25 years and over 55 years were associated with highest levels of burnout [14]. In the current study, young age group (20-30 years old) had the highest rate of burnout (17.7%) and majority (42.2%) of them were "overextended" (they feel emotionally exhausted yet able to maintain moderate level of work involvement and effectiveness). On the other hand, physicians over the age of 40 years had lowest rate of burnout (8.43%) and majority were found to be "engaged" (43.37%). Hence, the current study population results were similar to the published literature and concluded that the younger the physicians, highest the risk of burnout. This is likely due to the early age of retirement in UAE (60 years old) and the fact that most of workforce is young expatriate where employers older than 55 were only about 4% of the workforce in UAE as per 2019 statistics [16].

The literature has consistently shown that being married is a positive factor against burnout [17]. The current result is consistent as burnout rate was found to be lower among married physicians (9.4%) than single physicians (16.6%) and rate of engaged was higher among married while majority of single physicians were categorized as overextended (40.4%).

Smoking is a modifiable lifestyle and behavioral risk factor. In the current study, most participants were non-smokers. Rate of burnout was lower in non-smokers (9.21%), while in smokers burnout rate was 29.4%. Literature about burnout and smoking are scarce and were mixed where some addressed that burnout might be causal for smoking or substance abuse while other literature tried to establish causality of smoking leading to burnout; however, majority of literature showed no relation between smoking and burnout [18].

Physicians who reported a chronic medical illness were about 18.9% of the total sample size. The rate of burnout was lower in those with chronic medical illness (9.3%), while it was high (11.2%) among healthy physicians. Literature had shown the coexistence of chronic medical illness and burnout as it increases the risk of developing depression or worsening of depressive symptoms in a short period of time, as chronic illness itself could lead to depression. The only way to explain why the group with chronic medical illness had lower burnout rate might be the collectivism nature of Arab culture where they would always help others and support team members hence might be physicians with chronic illness were given lower workload than others though an objective assessment is needed to find out the facts [19,20]. Those with mental health illness and those without mental health illness had similar rate of burnout 11.2% and 12.5%, respectively. Literature addressed mental health illness as result of burnout but there is no literature on healthcare workers with pre-existing mental health illness who suffered burnout, likely due to small number or un-willingness of participants to disclose their mental health illness [21].

According to a 2020 report by Medscape about burnout among various medical specialties, urologists had the highest burnout rate (54%), followed by neurologists (53%). Physicians in public health and preventive medicine were the least (28%). According to the current data the highest burnout rate was among orthopedics (25%), followed by EMP (21.7%), then general surgery (14%), followed by critical care (10%) then internal medicine and medical specialties (9%). It is important to note that the total number of orthopedics physicians who took the survey was low (4%) in comparison to EMP (39%); hence, the percentage of burnout might not be a good reflection of departments with higher magnitude of burnout. Overall, it was thought that the discrepancy between the current data and Medscape report perhaps reflects center specific factors more than specialty related factors. Interestingly, in the current sample, many specialties did not exhibit burnout including ophthalmology, Obstetric and Gynecology (OB)/Gyne, neurosurgery and radiology.

Literature on burnout among medical workers and physicians in the Middle East found variable factors associated with burnout such as working hours, duration of service, nationality, and gender were all associated with burnout [4,7]. In a systematic review of burnout among European healthcare professionals; high workload, emotional demands, and organizational factors like perceived job control, organizational justice, social support at work, effort-reward imbalance, perceived burnout complaints among colleagues, and hospital organizational characteristics were all categorized as burnout risk factors [22].

Solutions to burnout must be coordinated at a system level, organizational level and then induvial level to address drivers for burnout [23]. System and organization interventions are more important than interventions directed toward the induvial as they should address the root cause of physicians burnout while individual interventions usually treat the effect more than the cause [23]. Starting at a system level, addressing physicians historical long working hours and working afterhours to complete tasks, is the cornerstone to the problem as working longer than 40 hours per week was found to be associated with burnout and risk is higher when working over 60 hours per week which is inherent in medical practice given on call commitment as well as professional duty to not leave the workplace unless patient care tasks are completed [24].

Mitigating and compensating the effects of antisocial working hours by measures such as job planning, adequate compensation for working public holidays and weekends - be it financial or otherwise, in order to allow ample time for physicians to pursue non-work related activities, might be adopted by an organization, to reduce burnout amongst physicians [25]. At organization level, measuring burnout annually is an important intervention in order to plan interventions proactively [26]. Addressing

workplace and workflow organization to streamline workload, increase job control, increase participation in decision making, and reduce work stress is key to reduce burnout risk [27]. Targeted measures at specific groups to mitigate their workload and provide support for effective functioning of physicians in their specific environments, might benefit at a unit level. Hiring scribes could reduce un necessary tasks on physicians, free them to interact with patients more as well as allow them to see more patients and in the same time it is financially rewarding and enhance physicians productivity [28]. At individual level, mindfulness-based meditation therapy, cognitive-behavioral therapy, personal coaching sessions as well as macro and micro-resilience skill training might benefit the individual to prevent, cope and manage burnout [26]. Work schedules to focus on rest and recovery, and restoration of physiological circadian rhythms in shift workers, might impact in the incidence of burnout [29]. Individual interventions treat the effect rather than the cause of burnout. Coping strategies and resilience training should go hand in hand with organizational planning and support to reduce the incidence of burnout [30].

The limitation of the current study was that it was a single center study based on physicians in one hospital limiting its generalizability to a wider population of physicians and healthcare workers. However, this might represent similar organizations in UAE in general and Abu Dhabi in particular. Furthermore, small sample size of 183 participants, impacted on the validity of the results. The current study had a response rate of only 44% and a cross-sectional study design was used instead of a longitudinal one and hence the current results reflect the time in which they were collected. This is significant as around the time of the data collection, the study hospital was going through significant change. All services and staff were relocated to new premises; and thus, it is possible that this transition impacted the responses received at the time of data collection as leave were restricted and people working hours were extended to maintain operation and re-locate at the same time.

Conclusion

Burnout among physicians is a worldwide problem and its influence affects the individual physician as well as the patient care provided. Burnout among Mafraq physicians was mapped out from burnout to engaged. The prevalence of burnout among Mafraq physicians was significant in the study (1 in 10 physicians). The effect of this burnout rate on physician's turnover, medical errors and professional productivity needs to be studied, which would be a useful future area of research for the UAE healthcare organizations. Healthcare leaders should develop a strategy to proactively prevent burnout among physicians and healthcare workers in UAE.

List of Abbreviations

DP	Depersonalization
EE	Emotional exhaustion
EMP	Emergency medicine physicians
MBI-HSS	Maslach Burnout Inventory Human Services Survey
MBI-HSS (MP)	Maslach Burnout Inventory Human Services Survey for Medical Personnel
PA	Personal accomplishment

Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this article.

Funding

None.

Consent to participate

Written informed consent was obtained from all the participants upon completion of the survey.

Ethical approval

Ethical approval had been obtained from the Mafraq Hospital Research Ethics Committee via reference/letter number 176, dated: 10/11/ 2019.

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