

## **The Prevalence and Factors associated with Burnout among Sudanese Health Care Professionals at Primary Health Care Centers in Wad Madani Al-Kubra (Sudan), and Sharjah (UAE), 20 October – 20 November 2020**

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### **Abstract:**

Burnout has long been recognized as a major problem among healthcare professionals and has become much more prevalent in the last decades. Beside healthcare professionals, it also negatively impacts the quality of health care services and patients.

To identify the prevalence and factors associated with burnout among health care professionals at primary health care center in Wad Madani Al-Kubra (Sudan) and Sharjah (UAE). This is a comparative, analytical, cross-sectional health facility-based study conducted in primary health care (PHC) at Wad Madani Al-Kubra (Sudan) and Sharjah (UAE). The study assessed burnout among (75 participants in Wad Madani) out of 77 health care professionals with response rate of (97.4%), as well as it assessed (75 participants in Sharjah) out of 86 health care professionals with response rate of (87.2%). For assessment of burnout, the study calculated its prevalence and grade using method of evaluation modified from Maslach Burnout Inventory.

All participants whose score was  $>10$  out of 30 considered as positive for burnout. Low, moderate and high burnout was reported for cases score ( $\leq 10$ , 11-20, 21-30).

Chi-Square test was used for calculation of significance at P value  $< 0.05$  and 95% CI. The data was analyzed by using Statistical Package for Social Sciences (SPSS, ver. 25). Females in Wad Madani & Sharjah groups were (82.7% and 77.3% respectively). Prevalence of burnout in Madani and Sharjah groups was reported with a considerable percentage (45.3% and 57.3%), (P value = 0.096). Low burnout was reported in 52 (69.3%) for each of Wad Madani and Sharjah group.

High burnout was reported in only 3 participants in Wad Madani group. Burnout is significantly higher among females when compared to males (57.5% vs. 26.7% respectively, P = 0.002). Burnout is significantly increase within increasing in number of patients met per day. The prevalence rate of medical personnel burnout in Alsharja primary health centers, UAE was found slightly higher than Wad Madani group, but no a statistically significant difference between the two groups. Recognition of burnout by health authorities and putting measures to rectify it.

**Keywords:** Burnout, healthcare, workload, depression, depersonalization, exhaustion

## 1. Introduction

Burnout syndrome (BO) has long been recognized as a major problem within the professionals sphere of modern life and has become much more prevalent in the last decade (Vander Elst T et al, 2016). This fact has generated enormous interest and concern, not only within the scientific community but also within government, business, and educational institutions due to the severity of the consequences that this syndrome has both on the individual and the work environment (de Paiva LC, et al 2017, Vander Elst T et al, 2016). BO is a major psychosocial problem that affects professionals from different areas. It is caused by chronic stress in the work environment <sup>2</sup> and results in three distinct symptoms: emotional exhaustion (EE), depersonalization (DP) and reduced professional achievement (PA) (Rojas and Grisales, 2011).

### 1.1. Problem Statement

Although BO affects individuals of all ages and occupations, it is highly prevalent among healthcare professionals due to the intense and continuous nature of contact with individuals receiving care.

In addition, aspects such as age, gender, years of practice, interpersonal conflicts, training and low participation in decision-making have also been strongly associated with the syndrome (Angelo and Chambel, 2015). This is especially true of healthcare professionals working in hospitals, as their exposure to these occupational stressors is exacerbated by the nature of these institutions.

The result is a negative impact on wellbeing in terms of both physical and mental health, which ultimately translates to substantial declines in several quality of life domains. Additionally, institutions suffer significant losses due to high levels of absenteeism from sickness as well as presenteeism (de Paiva LC, et al 2017), which compromises the quality of service (Zanatta and Lucca, 2015).

In light of the afore mentioned, the importance of this topic is evident, especially in the Arab world, which lacks studies and research in this field, which has negatively affected health workers and ultimately affects the quality of services provided to patients

### 1.2. Justification

- The study may assist researchers and administrators to improve the mental health of health professionals and enhance their ability to deliver better service.
- Up-to-date, there has been little published studies regarding prevalence of burnout and how it's affecting Sudanese health care providers in Sudan and UAE.
- The current study is expected to explore and compare the level and aspects of burnout. The current burden is unknown, so it is important to have evidence-based data that can positively impact both professional and health institution itself, by decreasing staff absenteeism, increase quality of care, decreasing medical errors and increasing patient's safety.

### 1.3. Objective:

#### 1- General objective:

- To assess the prevalence of and factors associated with burnout among Sudanese Health care providers at primary health care centers in Great Wad Madani Locality (Sudan) and Sharjah (United Arab Emirates).

#### 2-Specific objectives:

1. To determine the prevalence of burnout among Sudanese Health care providers at primary health care centers in Great Wad Madani Locality (Sudan) and Sharjah (United Arab Emirates).
2. To identify the risk factors associated with burnout among Sudanese Health care providers at primary health care centers in Great Wad Madani Locality (Sudan) and Sharjah (United Arab Emirates).

### 1.4. Literature Review

Burnout among doctors was first described in 1974. It is a work-related syndrome and it was initially ill-understood but over time has become increasingly accepted. Consequently, physician incidences of medical burnout are increasing at an alarming rate. In fact, career fatigue is more common among doctors than any other worker worldwide. In America, (Lotte, N 2017) found that out of 7,000 participating physicians more than 41% reported at least one symptom of burnout.

(Shanafelt TD 2017) has stated that burnout is characterized by a state of emotional, mental and physical exhaustion caused by excessive and prolonged stress. Although it can occur in any field, burnout occurs most amongst people in the caring professions of medicine, nursing, social work, counseling and teaching.

Incidences are even greater among specialties at the front line of care such as family medicine, emergency medicine and general internal medicine. The danger lies in the fact that physicians who suffer from burnout are more disposed to errors, provide less quality of care and receive lower patient satisfaction. It can lead to higher rates of depression, alcoholism and even suicide.

## **Burnout Measurement**

While burnout measures have been developed by other researchers, including the Burnout Measure (BM) (Pines & Aronson, 1981) and the Copenhagen Burnout Inventory (CBI) (Kristensen, Borritz, Villadsen, & Christensen, 2005), the MBI is the most widely used instrument by researchers. The development of the MBI was based on early research by Maslach and Jackson, who conducted interviews and surveys among various professionals. Those interviews served as a basis for three-subscale MBI.

Maslach and Jackson investigated the performance of the three MBI subscales and demonstrated that they had good psychometric properties; Cronbach's alpha for all three subscales were above 0.7. Also, they established the convergent validity of the MBI by correlating individual MBI scores with: 1) measures of various outcomes, such as job dissatisfaction, that were hypothesized to be related to burnout subscales; 2) job characteristics that were expected to contribute to the development of burnout such as difficult workloads; and 3) behavioral ratings provided by other persons who knew the individuals scored very well (e.g. spouses and co-workers). All correlations provided evidence about the validity of the MBI and its dimensions.

A review of 34 burnout studies by Hwang and colleagues (2003) concluded that even though all three factors of the MBI have not been replicated exactly across studies, there was considerable evidence that the MBI is a useful tool across a wide range of occupations, languages, and countries. The studies reviewed were conducted by many different researchers using differing research protocols and study designs. The unique advantage of this study is that it explores the factorial structure and performance of the MBI using a common investigator and instrument in eight countries, thus adding new knowledge regarding burnout measurement cross-nationally.

(Aldrees T, 2013) had agreed that incidences of physician burnout are greatly underreported. Long-hours, mounting pressure to see more patients, increased government interference and non-patient centered duties all contribute to physician burnout those can be the most common causes of this issue.

The relationship between burnout and medical error is likely bidirectional. In a longitudinal study of internal medicine residents, higher levels of burnout were associated with increased odds of reporting an error in the subsequent 3 months.

Self-perceived medical errors were also associated with worsening burnout, depressive symptoms, and decrease in quality of life, suggesting a cyclical relationship between medical errors and distress (West CP, Huschka M, Novotny P 2006). Other studies have found that as mean emotional exhaustion levels of physicians and nurses working in intensive care units rose, so did standardized patient mortality ratios, while perceived quality of interpersonal teamwork deteriorated. (Welp A, Meier LL, Manser T2015).

In Italy, (S. BRUSAFERRO, 2001) highlighted that there were no statistically significant differences for sex, age, professional qualification among clinical wards.

They identified n.31 workers in burnout (10.1%). Burnout resulted, both in univariate and multivariate analysis, related to serious personal experiences lived in the three months before the study (OR 1.6 - 95%C.I. 1.0-2.5) and to working in wards like Neurology (OR 3.5 - 95%C.I. 1.3-9.2) and Intensive Care Unit (OR 3.2 - 95%C.I. 1.2-8). Low levels of personal achievement resulted associated with being a female ( $p < 0.05$ ) and being an ancillary worker ( $p < 0.05$ ). It concludes that HCWs burnout is an important indicator that determines hospital output quality. Our data, that partially differ from literature, confirm the utility for hospital managers to have a updated map about the presence of burnout syndrome in their hospitals. If implemented periodically it would help to define personnel management strategies and policies, to empower personnel, to improve quality and to measure their effectiveness.

Portoghese I, et al investigated the moderating effect of job control on the relationship between workload and burnout. They recommended that, it is importance for hospital managers to carry out management practices that promote job control and provide employees with job resources, in order to reduce the burnout risk. health care workers are at a high risk of experiencing severe distress, burnout, and both mental and physical illness. In turn, this could affect hospital outcomes, such as the quality of care provided by such institutions. Particularly, in the past 35 years, the prevalence of stress-related illnesses such as burnout has increased significantly, affecting 19–30% of employees in the general working population globally. Burnout among health care workers, mainly medical staff, was becoming an occupational hazard, with its rate reaching between 25% and 75% in some clinical specialties [9].

Furthermore, it was reported that among the sources of occupational illnesses, burnout represents 8% of the cases of occupational illnesses (Portoghese et al, 2014).

### **Burnout during Covid-19:**

Recent study conducted in July 2020 revealed the serious impact of high epidemic on burnout. It was reported that, the mental health impacts of COVID-19 on frontline healthcare workers are undeniable. While physician burnout is not new, the pandemic is rapidly accelerating the many negative repercussions of uncertainty and inadequate support, and the consequences are being felt by patients, physicians, and healthcare systems.

However, this time of change is an opportunity for a cultural shift in how we perceive and manage physician mental health. Perhaps the tragic events involving self-harm in New York City can serve as a wake-up call to the emotional tolls of caring for COVID-19 patients and our responsibility to support ourselves and our colleagues (Bradley AND Chahar, 2020).

## **2. Methodology**

**2.1. Study design:** This is a facility-based cross-sectional study.

**2.2. Study period:** It was conducted during the period 20 October – 20 November 2020.

**2.3. Study area:** Wad Madani Locality (Sudan) and Sharjah (UAE).

Health system in Gezira delivers health care services through 86 health facilities, this includes; hospitals, health centers and rural hospitals. Most Major Health Hospitals and specialized health centers were located in Wad Madani Locality (Suna, 31 July 2020). Yet, health services through such health facilities in Wad Madani can deliver satisfying services when compared to population. Sharjah is third largest and third most populous city in UAE. Unlike Wad Madani, health facilities in Sharjah provides good efforts in delivering standardized health system as per Federal Ministry of Health in UAE and World Health Organization. The different health facilities in Sharjah delivers a well-equipped, well-resourced services by efficient health staff under umbrella of clear national and international standards

**2.4. Study settings:** The study was conducted in all Primary health care PHC Great Wad Madani Locality (Sudan) and Sharjah (UAE).



Number of health care providers who serve in health care centers in Wad Madani Locality are (275), doctors in Wad Madani are (98), while number of health care centers in Wad Madani are (34). Rate of patients' attendance per shift in health care centers in Wad Madani is 20 patients. On the other hand, Sharjah Emirate serves patients through 17 health care centers, with frequency of 50-150 patients per day.

### **2.5. Study population:**

The study included all Sudanese physicians working in the study areas and agreed to participate in the study.

### **2.6. Inclusion criteria:**

Sudanese professional who's working at Great Wad Madani Locality (Sudan) and Sharjah PHCs (UAE) who agreed to participate and at least have one year since recruitment.

### **2.7. Exclusion criteria:**

All health care worker with nationalities other than Sudanese,  
Newly employed.

**2.9. Sample size and sampling technique:** Total coverage method was used for determination of sample size in the two groups of the study, as follows:

*2.8.1 Wad Madani Al-Kubra group:* Total number of Sudanese health care professionals in PHCs is 77, out of which 75 were accessible during the data collection, with 97.4% response rate.

*2.8.2 Sharjah – UAE group:* Total number of Sudanese health care professionals in PHCs in Sharjah is 86, out of whom 75 were accessible during the data collection, with response rate of (87.2%).

### **2.10. Data management:**

**2.11. Data collection:** Data was collected by the researcher and colleagues using a formal questionnaire known as a leading measure of burnout; The *Maslach* Burnout Inventory (MBI) which was constructed by Christina Maslach and Susan Jackson; American psychologist (Maslach & Jackson, 1993).

**2.8 Study variables:** The study assessed the following variables: Demographic data, Burnout symptoms and Measurements of Maslach Burnout Inventory: (Emotional, Cynicism & Inefficacy)



### Measures of burnout:

- Burnout was measured as prevalence and grade, by using a score modified from Maslach Burnout Inventory (Leiter & Maslach, 2009).

**Prevalence:** The prevalence was calculated out of 10 questions illustrating existence of burnout symptoms (None = 0, sometimes = 1, often = 2, always = 3), so the full marks of the score was 30. Scoring > 10 points is considered as burnout, < 10 No burnout.

**Grade:** To provide other evaluation aspect, the study classified the levels of burnout into low, moderate and high for scoring (1-10 points, 11-20 points, and 21-30 points respectively) out of symptoms reported by the participants.

**2.12. Data analysis:** Data was analyzed by computer using (SPSS) software version 25. P value for variables correlation/compare was obtained at  $\leq 0.05$  as significant.

**2.13. Data presentation:** The results were expressed in the form of simple tables and graphs (pie chart and bar chart) for each particular variable in the study objectives using the same (SPSS) software.

### 2.14. Ethical consideration

- Ethical clearance was obtaining from ethical committee at al Gezira University.
- Permission was obtained from health care centers.
- Information was kept confidential and will be used only for the purpose of the study.
- Verbal consent was taken from all participants.

## 3. Results

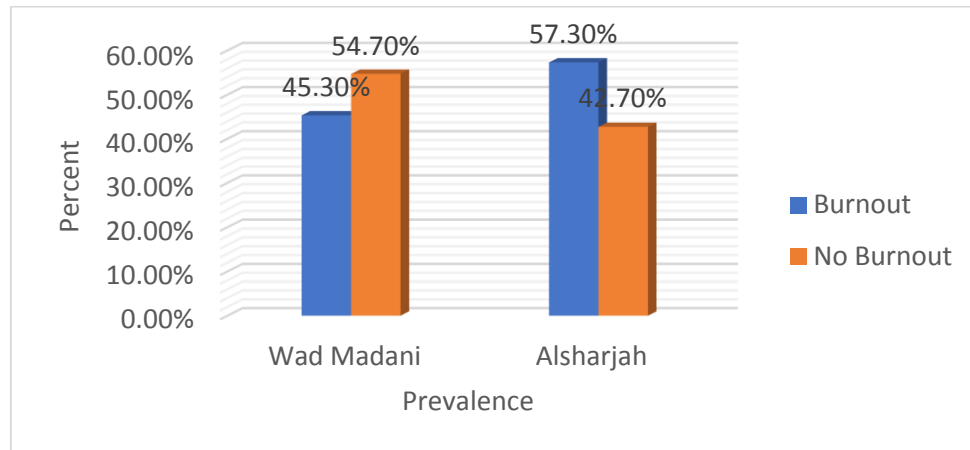
**Table (1): Distribution of healthcare professionals in Madani & Sharjah according to demographic data, (N = 150)**

Demographics	Group	
	Wad Madani Freq.(%) (N=75)	Sharjah Freq.(%), (N = 75)
<b>Experience:</b>		
< 5 years	38 (50.7%)	31(41.3%)
5--10 years	26(34.7%)	26(34.7%)
10-15 years	7 (9.3%)	13(17.3%)

> 15 years	4(5.3%)	5(6.7%)
<b>Marital Status:</b>		
Married	54(72.0%)	52(69.3%)
Single	21(28.0%)	23(30.7%)
<b>Gender:</b>		
Male	13(17.3%)	17(22.7%)
Female	62(82.7%)	58(77.3%)
<b>Working in Shifts:</b>		
Yes	60(80.0%)	70(93.3%)
No	15(20.0%)	5(6.7%)
<b>Number of patients per day</b>		
< 10 pts./day	2(2.7%)	6(8.0%)
10-19 pts./day	22(29.3%)	11(14.7%)
20- 30 pts./day	51(68.0%)	34(45.3%)
> 30 pts./day	0(0.0%)	24(32.0%)

Table (1): Among participants, 38(50.7%) of Madani group have less than 5 years of experience versus (41.3%) in Sharjah group. In Madani and Sharjah, females were 62(82.7%) and 23(30.7%) respectively. Married participants represented 54(72%) in Madani group versus 52(69.3%) in Sharjah group. Working in shifts was reported in 60(80%) in Madani group and 70(93.3%) in Sharjah group. Among health professionals in Madani and Sharjah 51(68.0%) and 34(45.3%) meet 20-30 patients per day respectively.

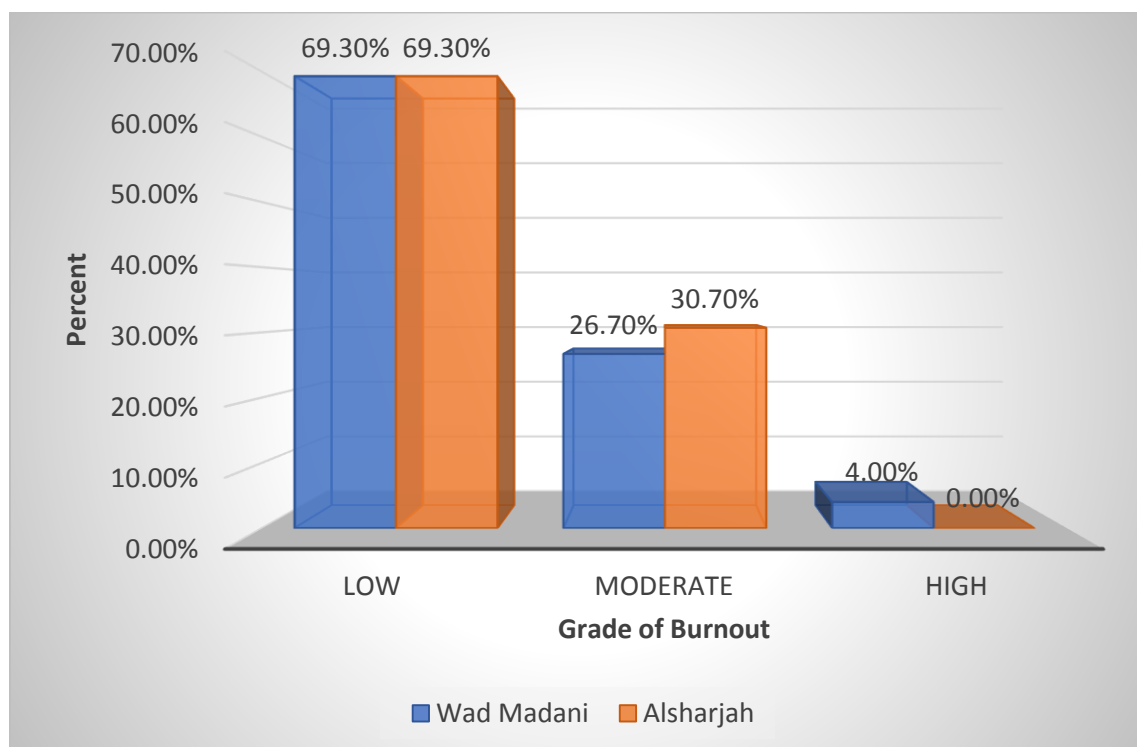
**Figure (1): Prevalence of burnout among healthcare professionals at Wad Madani and Sharjah, (N = 150)**



P value = 0.096

Figure (1): Burnout was reported in 34(45.3%) and 43(57.3%) of Wad Madani and Sharjah group respectively.

**Figure (2): Grades of Burnout among healthcare professionals at Wad Madani and Sharjah, (N = 150)**



P value = 0.201

Figure (2): Regarding grade of burnout, low burnout was reported in 52(69.3%) for each of Wad Madani and Sharjah group. High burnout was reported in only 3 participants in Wad Madani group, but no high burn out was detected in Sharjah group.

### Symptoms:

TABLE (2)

FATIGUE		NEVER	SOMETIMES	OFTEN	ALWAYS	TOTAL
	Wad Madani	5 (6.7%)	41(54.7%)	16(21.3%)	13(17.3%)	75 (100%)
	Sharjah	1 (1.3%)	34 (45.3%)	24 (32%)	16 (21.3%)	75(100%)
<b>Irritability</b>						
	Wad Madani	17(22.7%)	39(52%)	17(22.7%)	2(2.7%)	75(100%)
	Sharjah	2(2.7%)	31(41.3%)	33(44%)	9(12%)	75(100%)
<b>Insomnia</b>						
	Wad Madani	23(30.7%)	29(38.7)	23(30.7)	0(0.0%)	75(100%)
	Sharjah	9(12%)	50(66.7%)	16(21.3%)	0(0.0%)	75(100%)
<b>Lack of priority</b>						
	Wad Madani	23(30.7%)	31(41.3%)	18(24%)	3(4%)	75(100%)
	Sharjah	18(24%)	43(57.3%)	12(16%)	2(2.7%)	75(100%)
<b>Feeling of failure</b>						
	Wad Madani	26(34.7%)	27(36%)	16(21.3%)	6(8%)	75(100%)
	Sharjah	25(33.3%)	40(53.3%)	10(13.3%)	0(0.0%)	75(100%)
<b>Social Isolation</b>						
	Wad Madani	43(57.3%)	11(14.7%)	15(20%)	6(8%)	75(100%)
	Sharjah	3(4%)	55(73.3%)	15(20%)	2(2.7%)	75(100%)
<b>Poor.concentration</b>						
	Wad Madani	36(48%)	26(34.7)	13(17.3)	0(0.0%)	75(100%)
	Sharjah	8(10.7%)	55(73.3%)	12(16%)	0(0.0%)	75(100%)
<b>Dissatisfaction with work</b>						
	Wad Madani	20(26.7%)	34(45.3%)	7(9.3%)	14(18.7%)	75(100%)

	<b>Sharjah</b>	<b>10(13.3%)</b>	<b>52(69.3%)</b>	<b>12(16%)</b>	<b>1(1.3%)</b>	<b>75(100%)</b>
<b>Change of profession</b>						
	<b>Wad Madani</b>	<b>38(50.7%)</b>	<b>20(26.7%)</b>	<b>15(20%)</b>	<b>2(2.7%)</b>	<b>75(100%)</b>
	<b>Sharjah</b>	<b>47(62.7%)</b>	<b>19(25.3%)</b>	<b>8(10.7%)</b>	<b>1(1.3%)</b>	<b>75(100%)</b>

- In Wad Madani group, 39(52%) complaining of irritability is sometimes, while in Sharjah group 33(44%) complain of irritability is often.

- In wad Madani group, 23(30.7%) never complained of insomnia, 29(38.7%) complain of insomnia sometimes, while 50(66.7%) of Sharjah group complain of insomnia sometimes, P value as revealed significant (0.002).

-): In wad Madani group, 41(54.7) sometimes feel fatigue, versus 34(45.3%) of Sharjah group, P value as revealed insignificant (0.156).

- In wad Madani group, 31(41.3) sometimes feel lack of priority, versus 43(57.3%) of Sharjah group, P value as revealed insignificant (0.266).

- In wad Madani group, 27(36%) sometimes feel failure, versus 40(53.3%) of Sharjah group, P value as revealed significant (0.019).

- In wad Madani group, 43(57.3%) never felt social isolation, while 55(73.3%) of Sharjah group sometimes feel social isolation, P value as revealed significant (0.000).

- Poor concentration was never reported in 36(48%), and sometimes in 26(34.7%) of Wad Madani group, while 55(73.3%) of Sharjah group feel poor concentration sometimes, the P value was revealed significant (0.000).

- Dissatisfaction was felt sometimes by 34(45.3%) of Wad Madani group and 52(69.3%) of Sharjah group, the P value was revealed significant (0.000).

- Among Wad Madani and Sharjah group, 38(50.7%) and 47(63.5%) respectively, never thought of changing their profession, the P value was revealed insignificant (0.164).

**Table (3) Assessing criteria of burnout among healthcare professionals at Wad Madani and Sharjah by using “Maslach Burnout Inventory”, (N = 150).**

Criteria of Maslach Burnout Inventory		Wad Madani	Sharjah	P Value
<b>Emotional exhaustion</b>	Feeling emotionally drained from work	48.0%	68.0%	0.010
	Exhaustion After Work	34.7%	76.0%	0.000
	Feeling fatigue	56.0%	77.3%	0.005
	Being strained by working for people	29.3%	66.7%	0.000
	Regretting being health care provider	29.3%	18.7%	0.090
	Not feeling to positively influencing	22.7%	34.7%	0.148
	<b>Mean</b>	<b>36.7%</b>	<b>56.9%</b>	
<b>Depersonalization</b>	Treating patients as if they were impersonal	61.3%	9.3%	0.000
	Becoming more careless towards people	25.3%	12.0%	0.029
	Not really care to what will happen to some patients	22.7%	12.0%	0.130
	thinking of giving up role of model	25.3%	33.3%	0.370
	<b>Mean</b>	<b>33.65</b>	<b>16.7%</b>	
<b>Personal Achievement</b>	Do not deal effectively with Pts' Problem	2.7%	9.3%	0.083
	Do not reflecting on the satisfaction got as health provider	20.0%	32.0%	0.136
	<b>Mean</b>	<b>11.35</b>	<b>20.7%</b>	

Table (11): Criteria of burnout among healthcare professionals in the two groups was categorized into (**Emotional exhaustion, depersonalization and personal Achievement**) and it was calculated in the above-mentioned table as mean).

**Table(4):** Criteria of Maslach Burnout Inventory revealed that, respectively in Wad Madani and Sharjah group, feeling emotionally drained from work was reported in (48.0%) and (68.0%), (P value = 0.010). Exhaustion After Work was reported in (34.7%) and (76.0%), (P value = 0.000). Feeling fatigue was reported in (56.0%) and (77.3%), (P value = 0.005). Being strained by working for people reported in (29.3%) and (66.7%), (P value = 0.000). Regretting being health care provider reported in (29.3%) and (18.7%), (P value = 0.090). Not feeling to positively influencing reported in (22.7%) and (34.7%), (P value = 0.148). Treating patients as if they were impersonal reported in (61.3%) and (9.3%), (P value = 0.000). Becoming more careless towards people reported in (25.3%) and (12.0%), (P value = 0.029). Not really care to what will happen to some patients reported in (22.7%) and (12.0%), (P value = 0.130). Thinking of giving up role of model reported in (25.3%) and (33.3%), (P value = 0.370). Do not deal effectively with Pts' Problem reported in (2.7%) and (9.3%), (P value = 0.083). Do not reflecting on the satisfaction got as health provider reported in (20.0%) and (32.0%), (P value = 0.136).

**Table (4):**

Effective dealing with Pts' Problem		YES	NO	TOTAL
	Wad Madani	73(97.3%)	2(2.7%)	75(100%)
	Sharjah	68(90.7%)	7(9.3%)	75(100%)
<b>Treating patients as if they were Impersonal</b>				
	Wad Madani	46(61.3%)	29(38.7%)	75(100%)
	Sharjah	7(9.3%)	68(90.7%)	75(100%)
<b>I feel emotionally drained</b>				
	Wad Madani	36(48%)	39(52%)	75(100%)
	Sharjah	51(68%)	24(32%)	75(100%)
<b>Feeling fatigue</b>				
	Wad Madani	42(56%)	33(44%)	75(100%)
	Sharjah	58(77.3%)	17(22.7%)	75(100%)
<b>Becoming more careless towards people</b>				
	Wad Madani	19(25.3%)	56(74.7%)	75(100%)
	Sharjah	9(12%)	66(88%)	75(100%)
<b>I feel positively influencing</b>				
	Wad Madani	58(77.3%)	17(22.7%)	75(100%)
	Sharjah	49(65.3%)	26(34.7%)	75(100%)



Being strained by working for people				
	Wad Madani	22(29.3%)	53(70.7%)	75(100%)
	Sharjah	50(66.7%)	25(33.3%)	75(100%)
Don't really care to other people				
	Wad Madani	17(22.7%)	58(77.3%)	75(100%)
	Sharjah	9(12%)	66(88%)	75(100%)
Exhaustion After Work				
	Wad Madani	26(34.7%)	49(65.3%)	75(100%)
	Sharjah	57(76%)	18(24%)	75(100%)
thinking of giving up role of model				
	Wad Madani	19(25.3%)	56(74.7%)	75(100%)
	Sharjah	25(33.3%)	50(66.7%)	75(100%)
Reflecting on the satisfaction got as health provide				
	Wad Madani	60(80%)	15(20%)	75(100%)
	Sharjah	51(68%)	24(32%)	75(100%)
Regretting being health care provider				
	Wad Madani	22(29.3%)	53(70.7%)	75(100%)
	Sharjah	14(18.3%)	61(81.3%)	75(100%)

#### 4. Discussion

Studies have indicated that, symptoms of burnout can lead to HCPs medical/medication errors, and these errors can, in turn, contribute to Burnout syndrome. Dissatisfaction and distress have significant costs, not only for HCPs and their families but also for patients and health-care organizations<sup>(Bhagavathula)</sup>. The current study is an attempt to assess and compare burnout prevalence among health care professional in Wad Madani (Sudan) and Sharjah Emirate (UAE).

##### Demographic characteristics:

Demographic characteristics of health care professionals who participated in the current study revealed that, Experience of less than 5 years was the most frequent among both Wad Madani and Sharjah groups (50.7% and 41.3% respectively),

As well as most of participants in the groups were married (72% and 69.3% respectively). Females in both Wad Madani & Sharjah groups predominated (82.7% and 77.3% respectively).

Vast majority of HCPs in Wad Madani and Sharjah found working in shifts (80% and 93.3% respectively). Most Wad Madani group reported to meet 20-30 patients (68%), while less than half of the Sharjah group (45.3%) meet 20-30 patients per day.

### **Prevalence and grade of burnout:**

Prevalence of burnout was assessed in the current study through 10-questions, out of which the overall score of answers indicated that, prevalence of burnout in Madani and Sharjah groups were reported with a considerable percentage (45.3% and 57.3%). Although this result suggests a slightly higher prevalence among Sharjah group, chi-square test didn't reveal any significant difference ( $P = 0.096$ ). This slight variation is most probably due to the fact that, the study was conducted among Sudanese health professionals working in Sharjah, who were expected to be impacted by being foreigners, and they do not find the same social environment in Sudan.

Studies have shown wide range of variation in global prevalence of burnout; Rotenstein extracted burnout prevalence from 182 studies, the involving 109628 physicians in 45 countries, where overall prevalence ranged from 0% to 80.5% (Rotenstein, 2018). Other study by Lo D, et al in 2018 revealed that, among physicians in China (9302 participants from 11 studies), burnout prevalence ranged from 66.5% to 87.8% (Lo D, et al, 2018).

To provide other aspects of burnout evaluation, the current study also assessed its grade; which showed low grade of burnout among most participants in Wad Madani and Sharjah groups (69.3% for each), while high grade of burnout was seen among 3 participants in Wad Madani group only, but not in Sharjah group. Yet, no significant difference was reported between the two groups. A study in USA reported more common burnout symptoms, they reviewed that, over one-half of physicians experiencing symptoms (Reith TP, 2018). A compatible finding was reported in an Ethiopian study by Bhagavathula which showed that, more than 50% of the HCPs expressed that they always experience professional stress symptoms (Bhagavathula).

Elbarazi I, et al and Al-Abbadithey reported that, the prevalence of burnout may be higher among HCP in Arab countries as their health systems and financing models are either weak, overburdened, or rapidly developing and responding to the changing disease patterns and health status of the population [17].

Many of these countries have a critical shortage of HCP, particularly in some specialties, which may lead to overloading them with work responsibilities and making them prone to burnout. Countries like Iraq, the Palestine territories, Syria, and Yemen have experienced serious deterioration in health care equity and service provision, and also health status due to recent or ongoing civil conflict (Elbarazi I, et al).

### **Criteria of Maslach Burnout Inventory:**

The study assessed criteria of Maslach Burnout Inventory; (Emotional exhaustion, Depersonalization and Personal Achievement), out of which emotional exhaustion was found higher among Sharjah group when compared to Wad Madani Group ((56.9% and 36.7% respectively). Emotional exhaustion was found to be more frequent in the two groups when compared to the other two criteria (Depersonalization and Personal Achievement). This is similar to findings reported in a recent study conducted in Kuwait by Dinibutun SR in 2020 which showed that the emotional exhaustion level of the physicians was medium, the levels of depersonalization and personal accomplishment were low, and the level of total burnout was low (Dinibutun SR, 2020). Rotenstein extracted data of 182 studies involving 45 countries and found that, emotional exhaustion 0% to 86.2%, depersonalization 0% to 89.9%, and low personal accomplishment 0% to 87.1% (Rotenstein, 2018).

It was also revealed that Wad Madani group of healthcare professionals showed high indications of burnout syndrome regarding Treating patients as if they were Impersonal (61.3%) and feeling fatigued by work (56%) versus 9.3% and 77.3% respectively in Sharjah group ( $P = 0.000$  and  $0.005$  respectively).

Sharjah group reported more frequent indications of burnout syndrome such as Feeling fatigue (77.3%) versus (56% in Wad Madani group ( $P = 0.005$ ), Exhaustion after Work (76%), versus (34.7%) in Wad Madani group ( $P = 0.005$ ), Feeling emotionally drained from work (68%) versus (48%) in Sharjah group and Being strained by working for people (66.7%) versus (29.3%) in Sharjah group. All the above-mentioned criteria showed significant difference between the two groups ( $P < 0.05$ ).

This variation is most probably due to difference in work atmosphere, social support, long working hours and type of patients. Such findings might suggest that, Sharjah group reported criteria of burnout more frequently, which endanger their performance and expose other health care professional to burnout.

A study in Greece conducted by Tachtsoglou K, et al reported higher score of burnout regarding the ability to deal effectively with patients' problems (5.10+1.49) (Tachtsoglou K). Literature confirms these findings by reporting that, physicians' burnout has a direct impact on fatigue, stress, anxiety, depression, poor patient quality care and early retirements((Dinibutun SR, 2020), Patel RS, 2018).

### **Impacts of demographic data:**

Regarding impact of demographic characteristics of participants irrespective of their group, out study revealed that, burnout is significantly higher among females when compared to males (57.5% vs. 26.7% respectively,  $P = 0.002$ ).

Our findings also reported that, prevalence of burnout is significantly increase whenever number of patients met per day increase; it was reported among 64.7% of those who meet 20-30 patients per day and among 58.3% of those who meet  $> 30$  patients per day, while prevalence of burnout was reported in 12.5% of those who meet  $< 10$  patients per day and among 21.2% of those who meet 10-19 patients per day ( $P$  value == 0.000). The same finding was revealed regarding grade of burnout; all those who meet 20-30 patients per day have high burnout, versus none of those who meet less number of patients per day. This partially compatible with a study conducted by Biksegn A, et al (Biksegn A). Job insecurity, history of physical illness, low interest in profession, poor relationship status with managers, worry of contracting infection or illness and physical/verbal abuse were found to be predictors of burnout (Biksegn A).

## **5. Conclusion and Recommendations**

### **5.1 Conclusion**

According to the current findings, we can conclude that, overall score of burnout was found slightly higher among health professionals in Sharjah when compared to group of Madani (57.3% vs. 45.3%).

Low grade of burnout was reported among most participants in Wad Madani and Sharjah groups (69.3% for each), while high grade of burnout was seen among 3 participants in Wad Madani group only.

Risk of burnout was found significantly impacted by gender (high in females) and associated with meeting high number of patients per day, while experiences, marital status and working in shifts didn't revealed significant association.

## 5.2 Recommendations

Raising the visibility of clinician stress and burnout, and elevating evidence-based solutions by the health authorities through special committees for monitoring stress among healthcare professionals.

Setting a program to measure well-being of healthcare professionals in the health facilities so as to prevent or reduce the symptoms of burnout.

Further studies should be conducted to verify the extent of work stress impact among healthcare professional, considering organizational and workplace factors and its potential association with burnout.

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