MEDICAL SCIENCE

To Cite:
Alharbi IHM, Alyamani NA, Zafer DO, Munshi SA, Jawa HT. Compassion fatigue, burnout and compassion satisfaction among physicians in Makkah region, Saudi Arabia: A cross sectional study. *Medical Science* 2023; 27: e241ms3020.
doi: https://doi.org/10.54905/disssi/v27i136/e241ms3020

Authors' Affiliation:
[1]Department of Medicine, Faculty of Medicine, Umm Al Qura University, Makkah, Saudi Arabia
[2]Assistant Professor, Pediatric Hematology Oncology Department of Pediatrics, Umm Alqura University, Makkah, Saudi Arabia

[*]**Corresponding author**
Department of Medicine, Faculty of Medicine, Umm Al Qura University, Makkah,
Saudi Arabia
Email: Alyamani. NawrasA@gmail.com
ORCID: 0000-0003-1555-3209

Peer-Review History
Received: 26 April 2023
Reviewed & Revised: 29/April/2023 to 22/May/2023
Accepted: 26 May 2023
Published: 2 June 2023

Peer-review Method
External peer-review was done through double-blind method.

Medical Science
pISSN 2321–7359; eISSN 2321–7367

Compassion fatigue, burnout and compassion satisfaction among physicians in Makkah region, Saudi Arabia: A cross sectional study

Ibrahim HM Alharbi[1,2], Nawras Ali Alyamani[1*], Dai Osama Zafer[1], Sarah Ahmed Munshi[1], Hala Tariq Jawa[1]

ABSTRACT

Background: Burnout (BO) is a syndrome of emotional depletion, cynicism and lack of personal achievement that occurs among individuals who work continuously with people. Compassion Fatigue (CF) is a type of burnout that results of helping a suffering individual. Otherwise, Compassion Satisfaction (CS) is the professional satisfaction gained from providing care to patients. *Aim:* This study aims to determine the prevalence of Compassion Fatigue, Burnout and Compassion Satisfaction among Physicians in Makkah region, Saudi Arabia. *Methods:* An online questionnaire was distributed to evaluate the prevalence of CF, BO and CS among all physicians (Residents, Specialists and Consultants) who work in different specialties in Makkah region, Saudi Arabia. *Results:* Results showed that the physical environment at work and the clinical situation were the most common sources of distress. The prevalence of CF was 18.5%; BO was prevalent among 15.6% of physicians. And the prevalence of CS was 17.7%. *Conclusion:* This study showed an increase rate of CF, BO and reduced levels of CS among physicians. Therefore, the focus should be directed at causes, risk factors and try to minimize them.

Keywords: Burnout, Compassion Fatigue, Compassion Satisfaction.

1. INTRODUCTION

Burnout (BO) is a syndrome of emotional depletion, cynicism and lack of personal achievement that occurs commonly among individuals who work continuously with people especially if they are handling with their (psychological, social and/or physical) problems (Maslach and Jackson, 1981). Compassion Fatigue (CF) is a form of burnout that manifests itself as physical, emotional and spiritual exhaustion resulting from helping or wanting to help a traumatized or suffering person (Pfifferling and Gilley, 2000; Figley, 1995). Despite the fact of both terms are not synonyms, overlap

does exist between secondary traumatic stress and BO since both are the result of the emotional toll that various aspects of work in "helper" professions can have on the provider (Weintraub et al., 2020; Assiri, 2023).

On the other hand, Compassion Satisfaction (CS) is the professional satisfaction gained from providing care to patients and it has been described as an "antidote" to CF and BO (Weintraub et al., 2020). The medical profession, with its huge physical and emotional demands, naturally predisposes physicians to those phenomena, because they daily spend a considerable time around patients and relatives dealing with their issues and trying to find solutions that could not be obvious or difficult to obtain. Additionally, doing paperwork, as well as the self-imposed obligation to meet their high expectations (Pfifferling and Gilley, 2000; Figley, 1995).

Both CF and BO can have a psychological (e.g., depression, drug misuse, stress in personal relationships) and professional (e.g., lower productivity, quality of treatment and patient satisfaction, medical mistakes, absenteeism) impact on physicians (Weintraub et al., 2020). Based on a previous review by Rotenstein et al., (2018), the prevalence of overall burnout is estimated to be 67.0% and burnout subcomponents: 72.0% on emotional exhaustion, 68.1% on depersonalization and 63.2% on low personal accomplishment. BO and CF have been less well-studied among physicians in Asia (Rotenstein et al., 2018; Mol et al., 2015). And due to the lack of data on these phenomena in the region, this study aims to assess the prevalence of Compassion Fatigue, Burnout and Compassion Satisfaction among Physicians in Makkah region, Saudi Arabia.

2. METHODS

The present study is a web-based descriptive cross-sectional study. After gaining the ethical approval from the Institutional Review Board (IRB), an anonymous online questionnaire was distributed for evaluate the prevalence of Compassion Fatigue, Burnout and Compassion Satisfaction among all physicians (Residents, Specialist, Consultants) who works in different specialties in Makkah region. Data were obtained between February 19, 2022 and April 30, 2022 via social media platforms (WhatsApp, Email and Twitter) as well as through face-to-face invitations.

The minimum sample size required for this study was calculated by OpenEpi version 3.0, in consideration of the following: The population size in Makkah region is about 2,042,000 inhabitants (as reported in the last statistics for year 2020), keeping the confidence interval (CI) level at 95% and considering Anticipated % of frequency as 50% and taking design effect as 1. The sample size was calculated to be 500 participants.

The current survey used the modified Compassion Fatigue and Satisfaction Self-Test for Helpers (CFST) scale. The survey consisted of 54 items and three subscales, including compassion fatigue (CF), burnout (BO) and compassion satisfaction (CS). These three subscales divided according (Stamm, 2013).

The responses for each item were collected on a six-point Likert scale, ranging between 0 = Never to 5 = Very often. The scores of subscales were computed by summing up the values of items under each subscale. Therefore, the scores of CF, BO and CS ranged between 0-90, 0-65 and 0-115, respectively.

Adherence to ethical recommendations

An Institutional Review Board (IRB) number HAPO-02-K-012-2022-02-966, was obtained from the Biomedical Research and Ethics committee of Umm Al-Qura University Faculty of Medicine. Participants provided informed consent after being told of the purpose and benefit of the study. The authors declare adherence to ethical recommendations throughout the work. Participants' information was kept confidential and will not be breached.

Statistical Analysis

The analysis was performed using RStudio (R version 4.1.1). The internal reliability of the CFST subscales was tested using Cronbach α. The demographic characteristics of physicians were presented as frequencies and percentages. The subscale scores were tested for normality and they showed non-normal distribution (Kolmogorov-Smirnov test $p<0.0001$ for all subscales). As a consequence, the scores were expressed as median and interquartile range (IQR). Since we employed a modified version of the CFST scale, we could not set the formal cut-off points to evaluate the prevalence of CF, BO and CS. Alternatively, we used the numeric cut-off which was one standard deviation above the mean to define physicians with different conditions as indicated previously (Weintraub et al., 2016).

Subsequently, we analyzed the numeric scores in the univariate analysis to assess group differences in terms of different demographic and professional characteristics. The Wilcoxon Rank Sum and Kruskal-Wallis H tests were used whenever appropriate. Additionally, we further entered the significant variables from the univariate analysis into multivariate linear

regression models to detect the predictors of CF, BO and CS and the results of the regression analysis were expressed as Beta coefficients and 95% confidence intervals (95% CIs). A p value of < 0.05 was considered to invalidate the null hypothesis.

3. RESULTS

Demographic and professional characteristics

Initially, a total of 521 responses were received. However, one participant declined to participate in the survey. Therefore, the responses of 520 physicians were analyzed. The characteristics of physicians are demonstrated (Table 1). Males represented more than half of the responses (51.3%) and aged 18-30 years (53.7%). Approximately one-third of the participants were living with a spouse/partner (30.0%). About two-thirds of them were working in a governmental hospital (64.8%) and were residents (62.5%). The common sources of distress included the physical environment at work (33.5%) and the clinical situation (24.4%) (Table 1). The most common specialties included internal medicine (n=88, 16.9%), family medicine (n=51, 9.8%) and general surgery (n=49, 9.4%) (Figure 1).

Table 1 Demographic and professional characteristics of the participants (n=520)

Characteristic	Frequency	Percent
Gender		
Male	267	51.3%
Female	253	48.7%
Age		
18-30	279	53.7%
31-40	162	31.2%
41-50	55	10.6%
>50	24	4.6%
Members of household		
Live alone	78	15.0%
With roommate(s)	39	7.5%
With a spouse/partner	156	30.0%
With children	103	19.8%
With other relatives	144	27.7%
Source of current feelings of distress		
Clinical situation	127	24.4%
Personal health concerns	61	11.7%
Physical work environment	174	33.5%
Co-workers	81	15.6%
Others	77	14.8%
Facility type		
Governmental hospital	337	64.8%
Primary care center	72	13.8%
Private hospital	111	21.3%
City		
Jeddah	214	41.2%
Makkah	253	48.7%
Others	53	10.2%
Current level		
Resident	325	62.5%
Specialist	124	23.8%
Consultant	71	13.7%
Years of practice		
Less than 1 year	113	21.7%

1 to 5	237	45.6%
6 to 10	106	20.4%
More than 10 years	64	12.3%

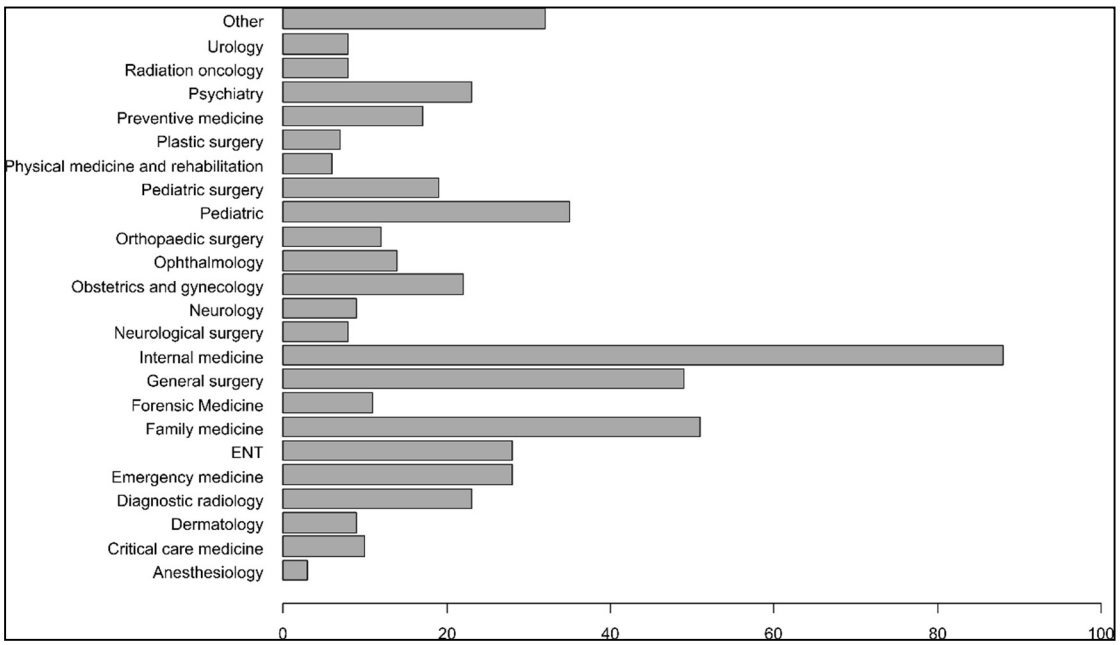

Figure 1 The frequencies of physicians' specialties

Internal consistency and description of the CFST subscales

The analysis of the internal consistency of the CF, BO and CS subscales showed that Cronbach's alpha values of 0.972, 0.937 and 0.915, respectively. This indicated an excellent reliability of the included domains. The median (IQR) values were 35.0 (24.0-48.0) for CF, 26.0 (17.0-35.0) for BO and 59 (37.8-76.0) for CS. More details about the descriptive statistics are demonstrated (Table 2).

Table 2 Descriptive statistics of the three CFST subscales

Subscale	Compassion Fatigue	Burnout	Compassion Satisfaction
N of items	18	13	23
Cα	0.972	0.937	0.915
Minimum, maximum	0-90	0-65	0-115
Mean ± SD	35.8 ± 17.0	26.6 ± 12.6	58.3 ± 26.2
Median (IQR)	35.0 (24.0-48.0)	26.0 (17.0-35.0)	59 (37.8-76.0)

Cα: Cronbach's alpha; IQR: Interquartile range

Compassion fatigue

The prevalence of CF was 18.5% (95% CI, 15.3% to 22.1%). In the univariate analysis, CF differed significantly by physicians' age (p = 0.003), years of practice (p = 0.011) and implementing prayer/meditation as self-care activities to overcome stress (p=0.031) (Table 3). Additionally, ENT practitioner had significantly higher CF scores compared to other specialties (p=0.032, supplementary materials S1). In the multivariate regression analysis, higher CF was predicted by middle age (31 to 40 years, β = 4.15, 95% CI, 0.32 to 7.99, p = 0.034) and old age (>50 years, β = 12.00, 95% CI, 3.61 to 20.30, p = 0.005). Furthermore, prayer/meditation significantly predicted lower CF scores (β = -3.47, 95% CI, -6.44 to -0.49, p = 0.022) (Table 4).

Burnout

Burnout was prevalent among 15.6% of physicians (95% CI, 12.6% to 19.0%). Burnout was significantly lower among females than males (p=0.026) and it was significantly different based on physicians' age (p<0.0001), current professional level (p=0.001) and years of practice (p=0.0002) (Table 3). Physicians in the preventive medicine specialty had significantly lower BO scores than their peers (p=0.023, supplementary materials S2). Based on the adjusted, multivariate analysis, older physicians had higher BO levels (β = 10.3,

95% CI, 4.14 to 16.6, p = 0.001). Conversely, low burnout levels were independently related to the consultant level (β = -5.56, 95% CI, -10.0 to -1.10, p = 0.015) and the preventive medicine specialty (β = -6.36, 95% CI, -12.4 to -0.34, p = 0.038) (Table 4).

Table 3 The scores of CF, BO and CS categorized by different demographic and professional groups of physicians

Parameter	Category	CF		BO		CS	
		Median (IQR)	P	Median (IQR)	p	Median (IQR)	p
Overall score	Numeric	35.0 (24.0-48.0)		26.0 (17.0-35.0)		59.0 (37.8-76.0)	
Gender	Male	35.0 (26.0-45.5)	0.974	26.0 (19.0-36.0)	0.026	65.0 (46.0-84.0)	< 0.0001
	Female	35.0 (23.0-51.0)		24.0 (16.0-35.0)		53.0 (31.0-71.0)	
Age	18-30	32.0 (22.0-43.0)	0.003	23.0 (15.0-34.0)	< 0.0001	59.0 (36.0-76.0)	0.898
	30-40	38.0 (27.0-49.8)		28.0 (20.0-37.0)		58.0 (41.0-75.8)	
	41-50	35.0 (27.0-51.0)		25.0 (19.5-36.5)		60.0 (38.5-82.5)	
	>50	45.0 (33.0-52.0)		34.5 (21.0-39.8)		65.0 (45.0-73.0)	
Members of household	Live alone	31.5 (24.2-39.0)	0.197	24.5 (18.0-32.8)	0.524	53.0 (40.0-77.2)	0.166
	With roommate(s)	40.0 (27.5-52.5)		27.0 (19.5-36.0)		49.0 (36.0-68.0)	
	With a spouse/partner	35.5 (24.0-46.2)		27.0 (18.8-35.0)		61.0 (45.0-80.2)	
	With children	36.0 (24.5-51.0)		23.0 (17.0-35.0)		57.0 (35.0-72.5)	
	With other relatives	36.0 (19.0-50.2)		26.0 (15.0-37.2)		63.5 (39.5-77.2)	
Source of current feelings of distress	Clinical situation	34.0 (26.0-43.5)	0.156	26.0 (19.0-34.0)	0.223	61.0 (45.5-75.5)	0.394
	Personal health concerns	35.0 (24.0-52.0)		27.0 (19.0-39.0)		63.0 (36.0-79.0)	
	Physical work environment	36.0 (24.0-50.0)		26.0 (17.0-36.0)		58.0 (36.2-73.0)	
	Co-workers	40.0 (24.0-52.0)		28.0 (16.0-39.0)		58.0 (36.0-72.0)	
	Others	32.0 (18.0-40.0)		23.0 (14.0-33.0)		63.0 (36.0-87.0)	
Facility type	Governmental hospital	36.0 (25.0-47.0)	0.979	26.0 (18.0-35.0)	0.960	65.0 (46.0-81.0)	< 0.0001
	Primary care center	33.5 (21.5-51.2)		24.0 (16.0-36.0)		46.5 (31.8-73.0)	
	Private hospital	34.0 (19.0-52.0)		25.0 (15.0-35.5)		47.0 (28.0-67.0)	
City	Jeddah	38.0 (24.0-49.0)	0.092	28.0 (17.0-36.8)	0.057	58.0 (34.2-73.0)	0.035
	Makkah	34.0 (25.0-47.0)		26.0 (18.0-35.0)		63.0 (41.0-81.0)	
	Others	29.0 (19.0-40.0)		22.0 (16.0-26.0)		47.0 (36.0-73.0)	
Current level	Resident	33.0 (23.0-46.0)	0.516	25.0 (16.0-34.0)	0.0001	58.0 (37.0-77.0)	0.099

	Specialist	40.5 (29.0-51.2)		31.0 (22.0-39.0)		63.0 (47.0-76.8)	
	Consultant	33.0 (18.0-44.5)		23.0 (15.5-30.5)		49.0 (35.5-72.5)	
Years of practice	Less than 1 year	32.0 (18.0-45.0)	0.011	23.0 (13.0-34.0)	0.0002	54.0 (30.0-76.0)	0.243
	1 to 5	34.0 (25.0-45.0)		26.0 (17.0-34.0)		58.0 (40.0-75.0)	
	6 to 10	41.0 (28.2-52.8)		33.0 (22.2-40.8)		64.0 (46.0-78.2)	
	More than 10 years	33.0 (18.0-46.8)		23.0 (16.0-34.2)		59.0 (35.8-82.5)	
Self-care activities, Talk about distressing issues	No	34.0 (23.0-46.8)	0.338	24.0 (16.0-35.0)	0.073	57.0 (35.2-75.8)	0.048
	Yes	36.0 (24.2-48.8)		26.0 (20.0-36.0)		63.0 (43.2-80.5)	
Self-care activities, Exercise	No	36.0 (24.0-49.0)	0.530	25.0 (17.0-36.0)	0.934	58.0 (36.0-79.0)	0.984
	Yes	34.0 (24.0-47.0)		26.0 (17.0-35.0)		60.0 (40.0-75.0)	
Self-care activities, Engage in creative arts	No	35.0 (25.0-47.0)	0.936	25.5 (17.0-35.0)	0.650	60.0 (41.0-77.0)	0.044
	Yes	35.0 (20.0-51.8)		26.0 (15.0-36.8)		56.0 (30.5-73.8)	
Self-care activities, Socialize with family/friends	No	35.0 (23.0-45.0)	0.294	25.0 (16.0-35.0)	0.078	51.0 (34.0-71.0)	< 0.0001
	Yes	35.0 (24.0-50.0)		26.0 (18.0-36.5)		67.0 (46.0-84.0)	
Self-care activities, Prayer/meditation	No	36.0 (26.0-49.0)	0.031	26.5 (17.8-36.0)	0.071	57.0 (37.0-73.0)	0.008
	Yes	32.5 (20.0-46.0)		24.0 (16.0-34.0)		65.0 (39.5-86.0)	
Self-care activities, Others	No	36.0 (24.0-49.0)	0.278	26.0 (17.0-36.0)	0.717	61.0 (40.0-76.0)	0.645
	Yes	32.0 (26.0-43.0)		25.0 (18.0-34.0)		55.0 (35.0-79.0)	

Compassion satisfaction

The prevalence of high CS was 17.7% (95% CI, 14.6% to 21.3%). CS scores differed significantly based on participants' gender (p<0.0001), facility type (p<0.0001) and city (p=0.035), as well as the following self-care activities: Talking about distressing issues (p=0.048), engaging in creative arts (p=0.044), socialize with family and friends (p<0.0001) and prayer/meditation (p=0.008) (Table 3). Compassion satisfaction was also higher among family medicine physicians (p=0.002). Nevertheless, CS scores were significantly low among physicians of the following specialties forensic medicine (p=0.038), preventive medicine (p < 0.0001) and psychiatry (p=0.005, supplementary materials S1).

Based on the multivariate analysis, higher compassion satisfaction scores were predicted by the male gender (β = 9.54, 95% CI, 5.33 to 13.8, p < 0.0001) and implementing the following self-care activities: socializing with family and friends (β = 8.54, 95% CI, 4.25 to 12.8, p < 0.0001) and prayer/meditation (β = 5.01, 95% CI, 0.66 to 9.35, p = 0.024). Besides, family medicine predicted higher CS scores (β = 11.1, 95% CI, 3.96 to 18.2, p = 0.002). On the other hand, lower CS scores were predicted by working in a primary care center (β = -7.40, 95% CI, -13.8 to -1.03, p = 0.023) or in a private hospital (β = -10.4, 95% CI, -15.7 to -5.17, p < 0.0001), as well as the preventive medicine specialty (β = -17.7, 95% CI, -29.4 to -6.00, p = 0.003) (Table 4).

Table 4 Results of the multivariate linear regression analysis to assess the predictors of CF, BO and CS

Parameter	Reference category	Other categories	Beta	95% CI	p-value
CF					
Age	18-30	31 to 40	4.15	0.32, 7.99	0.034
		41 to 50	4.42	-1.56, 10.4	0.147
		>50	12.00	3.61, 20.3	0.005
Years of practice	< 1 year	1 to 5 y	0.94	-2.95, 4.83	0.635
		5 to 10 y	3.17	-2.25, 8.58	0.251
		> 10 y	-4.55	-11.2, 2.07	0.177
Self-care activities, prayer/meditation	No	Yes	-3.47	-6.44, -0.49	0.022
Specialty, ENT	No	Yes	6.44	-0.02, 12.9	0.051
BO					
Gender	Female	Male	2.13	0.00, 4.25	0.050
Age	18-30	31 to 40	2.68	-0.23, 5.59	0.071
		41 to 50	4.45	-0.05, 8.95	0.053
		>50	10.3	4.14, 16.6	0.001
Current level	Resident	Specialist	1.26	-1.93, 4.45	0.439
		Consultant	-5.56	-10.0, -1.10	0.015
Years of practice	< 1 year	1 to 5 y	1.08	-1.77, 3.94	0.456
		5 to 10 y	3.85	-0.39, 8.10	0.075
		> 10 y	-1.13	-6.61, 4.34	0.684
Specialty, preventive medicine	No	Yes	-6.36	-12.4, -0.34	0.038
CS					
Gender	Female	Male	9.54	5.33, 13.8	<0.001
Facility type	Governmental hospital	Primary care center	-7.4	-13.8, -1.03	0.023
		Private hospital	-10.4	-15.7, -5.17	<0.001
City	Jeddah	Makkah	2.85	-1.56, 7.26	0.205
		Others	-2.11	-9.39, 5.17	0.569
Self-care activities, talk about distressing issues	No	Yes	2.52	-1.87, 6.92	0.260
Self-care activities, engage in creative arts	No	Yes	-2.97	-7.88, 1.95	0.236
Self-care activities, socialize with family/friends	No	Yes	8.54	4.25, 12.8	<0.001
Self-care activities, prayer/meditation	No	Yes	5.01	0.66, 9.35	0.024
Specialty, family medicine	No	Yes	11.1	3.96, 18.2	0.002
Specialty, forensic medicine	No	Yes	-5.79	-20.4, 8.77	0.435
Specialty, preventive medicine	No	Yes	-17.7	-29.4, -6.00	0.003
Specialty, psychiatry	No	Yes	-8.66	-18.9, 1.56	0.097

4. DISCUSSION

Medicine as a profession is one of the most demanding jobs in the world. It is highly stressful, exhausting and challenging occupation that can have serious impact on an individual's life. Approximately, one third of physicians' experience burnout during their lifetime (Shanafelt et al., 2003). This effect is not limited to their performance but extends to their overall life and most importantly, their well-being. It also has an impact on the quality of patients' care as well as their overall experience and satisfaction. It has a huge impact as well on their social lives (Al-Lamki, 2010).

In our study, we have a total of 520 physicians whose responses were analysed. Demographically, more than half of the participants were males. Majority of the responders were in the age category 18-30 years. As we can predict, this is the typical age of medical school (18-24), internship (24-25) and residency (25-30). Understandably, it is a stressful period in the physicians' journey. Our data also showed more than 30% of participants are married (this is an important factor as physician burnout has an impact on physician's family).

In terms of places of work, about two-thirds of our participants working at government hospitals. This is because most hospital in Saudi Arabia is public and owned by government. Interestingly, the factors that were considered as sources contributing to the stress and resulting in burnout were the physical environment, clinical situations, themselves, problems with co-workers' attitudes, and personal health concerns (medical and psychological health concerns). These findings are similar to prior published work on sources of stress and burnout among physicians especially trainees (Zhou et al., 2020). Most physicians participating in our cohort were residents. Indeed, they are the main target of our paper. Most challenges a physician encounter are usually at their peak during residency.

Compassion Fatigue

Compassion Fatigue (CF) is characterized as the physical and mental depletion, as well as emotional withdrawal, experienced by those who provide long-term care to sick or traumatized persons (Figley, 1995). CF has long been recognized among health care professionals. Risk factors for compassion fatigue include stress, burnout, increased exposure to extremely sick/traumatized patients and absence of programs that are designed to help victims or CF or those who are at risk for it (Cocker and Joss, 2016). In our study, we found the prevalence of CF to be around 18.5% among health care practitioners. In other studies, the prevalence of CF among health care workers was found to be higher with a range from 21.6% to 44.8% (Mangoulia et al., 2015).

CF affects male and female health care professionals equally. In prior studies, females are more affected (Brooker et al., 2013). There was an inverse relationship between age of the physician and reporting compassion fatigue. In other words, the younger the physician the less CF they have. Some prior studies found age to be protective of CF among health care workers. But most of these studies have underrepresentation of young age participants (Adams et al., 2001; Nelson-Gardell and Harris, 2003; Vredenburgh et al., 1999). In our study, younger age seems to be protective (18-30 years) and older age is a risk factor for CF (> 50 years of age) (Table 4).

Burnout

Burnout (BO) in healthcare professionals is a syndrome that results from stress and exhaustion. It was first introduced by Freudenberger, (1974). It is defined as a syndrome that involve three aspects which are emotional exhaustion, cynicism and depersonalization, leading to reduced professional efficacy and personal accomplishment (Maslach et al., 2001). BO may affect any profession and is not just a problem for healthcare professions. Risk factors for BO among healthcare professionals include heavy workload, disorganized work, difficult working conditions and inability to balance private and professional life (Chemali et al., 2019).

International data on the incidence of BO among overall healthcare workers and among specifically among physicians to be 55% and 42% respectively as reported by Medscape medical website survey. Our study showed significantly lower prevalence of BO which is female physicians has significantly lower risk of BO as compared to male physicians ($p=0.026$). Some prior work showed female physicians have more prevalence of BO symptoms as compared to male physicians (De-Hert, 2020). Age is an important risk factor for having BO. The older the healthcare professional the higher the risk is. The lowest risk group by age is 18-30 and the highest is those who are older than 50 years of age.

Other studies reported conflicting data. Some have shown younger age is a risk factor for suffering from BO in medicine (Huang et al., 2020). Other suggested that middle age (30-40) as the highest age group with high rates of BO (Dinibutun, 2020). Some specialties have lower prevalence of Burnout, such as Preventative Medicine in our cohort. This is an interesting finding. It is the same finding reported by American Medical Association (AMA) that found Preventative Medicine to be the least specialty where physicians have lower rates of BO.

AMA reported (based on Medscape large survey) that the specialties with highest burnout rates are Urology (54%), Neurology (50%), Nephrology (49%), Diabetes and Endocrinology (46%), Family Medicine (46%) and Radiology (46%). On the other hand, AMA reported specialties with lowest rates of Burnout are Preventative Medicine (29%), Ophthalmology (30%), Orthopedics (34%), Psychiatry (35%), Otolaryngology (35%) and General Surgery (35%) (Kane, 2022). Finally, being a consultant has been found to be an independent factor related with a lower incidence of Burnout.

Compassion satisfaction

Compassion satisfaction is the pleasure that an individual gets from helping others. It is very positive feelings that make physicians feel better and contribute more to the workplace. Compassion Satisfaction is another measure of empathy. This is why it is important not only to keep it in health care professionals, but also to maximize it. The prevalence of Compassion Satisfaction in our study was found to be (17.7%). International data varies greatly. A Chinese study found the prevalence of Compassion Satisfaction to be around 78% among Oncology Health Care Professionals (Zhang et al., 2021).

On the other hand, it was reported to be as low as 22.89% in a meta-analysis published recently (Algamdi, 2022). In our study, female physicians reported less CS as compared to male counterparts. In addition, age has been shown to be a factor, higher in the age > 50 years and lowest at the age 30-40 years. Activities that have been shown to be associated with higher CS include talking about distressing issues, participation in creative arts, socializing with family members and friends, as well as prayers and self-meditation. While Family Medicine physicians have the highest score of CS, preventative medicine, forensic medicine and psychiatry physicians scored the lowest scores.

5. CONCLUSION

Healthcare profession is a challenging, exhausting and stressful job. Physicians, in particular, are at greater risk for Compassion Fatigue, Burnout and lower rates of Compassion Satisfaction. In this paper, we tried to dissect prevalence, causes and risk factors for such devastating problems. We found that presence of negative workplace environment, increasing workload, bad coworkers' attitudes and long hours of work to be significant causes. On the other hand, presence of positive work environment, supportive friends and family members, participating in arts and self-care activities such as prayers and meditations to be protective. Further studies are needed to assess these problems in a better way and find the most suitable interventions.

Acknowledgements

We would like to express our gratitude to the participants who generously answered the study's questionnaire.

Authors' contributions

All authors made substantial contributions to conception and design, acquisition of data or analysis and interpretation of data; took part in drafting the article or revising it critically for important intellectual content; agreed to submit to the current journal; gave final approval of the version to be published; and agree to be accountable for all aspects of the work.

Ethical Approval

The study was approved from the Biomedical Research and Ethics committee of Umm Al-Qura University Faculty of Medicine, Makkah, Saudi Arabia, with letter number (HAPO-02-K-012-2022-02-966) on 16/2/2022.

Informed consent

Written & Oral informed consent was obtained from all individual participants included in the study. Additional informed consent was obtained from all individual participants for whom identifying information is included in this manuscript.

Funding

This study has not received any external funding.

Conflict of interest

The authors declare that there is no conflict of interests.

Data and materials availability

All data sets collected during this study are available upon reasonable request from the corresponding author.

Supplementary materials

Table S1 Specialty-based differences in the scores of CF, BO and CS

Parameter	Category	CF		BO		CS	
		Median (IQR)	p	Median (IQR)	p	Median (IQR)	p
Anesthesiology	No	35.0 (24.0-48.0)	0.327	26.0 (17.0-35.0)	0.641	59.0 (37.0-76.0)	0.758
	Yes	51.0 (39.5-53.0)		26.0 (25.0-31.0)		62.0 (51.5-62.5)	
Critical care medicine	No	35.0 (24.0-48.0)	0.743	26.0 (17.0-35.0)	0.713	59.0 (37.2-76.0)	0.352
	Yes	37.0 (20.2-47.5)		26.5 (17.2-37.2)		82.0 (40.8-85.5)	
Dermatology	No	35.0 (24.0-48.0)	0.884	26.0 (17.0-35.0)	0.527	59.0 (37.0-76.0)	0.809
	Yes	33.0 (27.0-44.0)		22.0 (19.0-35.0)		57.0 (44.0-67.0)	
Diagnostic radiology	No	35.0 (24.0-48.0)	0.174	26.0 (17.0-35.0)	0.411	60.0 (39.0-76.0)	0.204
	Yes	29.0 (18.0-41.5)		25.0 (13.0-34.5)		41.0 (22.5-76.0)	
Emergency medicine	No	35.0 (24.0-48.0)	0.252	26.0 (17.0-35.0)	0.503	59.0 (37.8-77.0)	0.946
	Yes	36.5 (27.5-55.0)		29.0 (19.0-37.5)		62.0 (39.0-75.0)	
ENT	No	34.0 (24.0-47.2)	0.032	26.0 (17.0-35.0)	0.091	58.0 (36.8-76.0)	0.172
	Yes	42.5 (31.0-51.2)		31.0 (21.8-40.2)		66.5 (51.8-79.2)	
Family medicine	No	35.0 (24.0-48.0)	0.195	26.0 (17.0-35.0)	0.098	58.0 (36.0-76.0)	0.002
	Yes	35.0 (27.5-50.0)		28.0 (20.5-35.5)		70.0 (56.5-85.5)	
Forensic Medicine	No	35.0 (24.0-48.0)	0.064	26.0 (17.0-35.0)	0.190	60.0 (38.0-76.0)	0.038
	Yes	28.0 (15.5-33.5)		26.0 (11.0-29.0)		42.0 (26.5-49.5)	
General surgery	No	35.0 (24.0-48.0)	0.969	26.0 (17.0-35.5)	0.715	59.0 (37.0-76.0)	0.693
	Yes	36.0 (26.0-47.0)		25.0 (18.0-35.0)		61.0 (42.0-76.0)	
Internal medicine	No	35.0 (24.0-49.0)	0.167	26.0 (17.0-35.2)	0.980	60.0 (38.0-76.0)	0.894
	Yes	33.5 (24.0-41.0)		26.0 (18.8-34.0)		58.0 (36.8-78.8)	
Neurological surgery	No	35.0 (24.0-48.0)	0.756	26.0 (17.0-35.0)	0.559	59.5 (37.8-76.0)	0.710
	Yes	38.5 (26.5-49.0)		29.0 (18.5-37.5)		53.0 (40.0-66.8)	
Neurology	No	35.0 (24.0-48.0)	0.845	26.0 (17.0-35.0)	0.634	59.0 (37.0-76.0)	0.560
	Yes	40.0 (31.0-48.0)		23.0 (19.0-34.0)		65.0 (57.0-72.0)	
Obstetrics and gynecology	No	35.0 (24.0-48.0)	0.714	26.0 (17.0-35.0)	0.240	59.0 (38.0-77.0)	0.385
	Yes	35.5 (25.5-42.2)		20.5 (16.2-29.5)		61.5 (34.8-68.5)	
Ophthalmology	No	35.0 (24.0-48.0)	0.381	26.0 (17.0-35.0)	0.274	59.0 (38.0-76.0)	0.366
	Yes	39.0 (29.8-57.2)		30.5 (23.0-41.0)		73.0 (37.5-88.0)	
Orthopedic surgery	No	35.0 (24.0-48.0)	0.991	26.0 (17.0-35.0)	0.943	59.0 (37.0-76.0)	0.464
	Yes	40.5 (22.5-46.2)		24.5 (17.8-32.5)		64.0 (46.8-86.8)	
Pediatric	No	35.0 (24.0-48.0)	0.767	26.0 (17.0-35.0)	0.999	59.0 (37.0-76.0)	0.299
	Yes	37.0 (26.0-45.5)		25.0 (18.5-34.0)		70.0 (46.5-80.5)	
Pediatric surgery	No	35.0 (24.0-48.0)	0.673	26.0 (17.0-35.0)	0.988	59.0 (38.0-76.0)	0.412
	Yes	40.0 (20.0-55.0)		27.0 (16.0-36.0)		54.0 (23.5-71.0)	
Physical medicine and rehabilitation	No	35.0 (24.0-48.0)	0.740	26.0 (17.0-35.0)	0.551	59.0 (38.0-76.0)	0.733
	Yes	35.5 (22.5-56.0)		29.5 (19.0-46.0)		53.5 (30.0-80.0)	
Plastic surgery	No	35.0 (24.0-48.0)	0.257	26.0 (17.0-35.0)	0.366	59.0 (37.0-76.0)	0.722
	Yes	47.0 (35.0-51.5)		35.0 (22.5-40.0)		66.0 (52.0-72.5)	
Preventive medicine	No	35.0 (24.0-48.0)	0.096	26.0 (17.0-35.5)	0.023	61.0 (40.0-77.0)	<0.0001
	Yes	27.0 (18.0-41.0)		20.0 (11.0-26.0)		26.0 (19.0-52.0)	
Psychiatry	No	35.0 (24.0-48.0)	0.590	26.0 (17.0-35.0)	0.875	61.0 (40.0-77.0)	0.005
	Yes	35.0 (19.0-44.5)		24.0 (15.5-37.0)		35.0 (23.5-60.5)	
Radiation oncology	No	35.0 (24.0-48.0)	0.619	26.0 (17.0-35.0)	0.475	59.0 (38.0-76.0)	0.582
	Yes	31.5 (25.2-38.5)		21.5 (18.0-27.2)		56.0 (35.8-71.2)	
Urology	No	35.0 (24.0-48.0)	0.260	26.0 (17.0-35.0)	0.681	59.0 (37.0-76.0)	0.351

	Yes	26.0 (17.0-37.8)		26.0 (24.5-32.0)		63.5 (51.5-80.0)	
Other	No	34.5 (24.0-48.0)	0.778	26.0 (17.0-35.0)	0.392	60.0 (37.0-76.0)	0.797
	Yes	36.0 (25.5-49.5)		24.5 (14.8-34.5)		57.5 (46.0-76.8)	

REFERENCES AND NOTES

1. Adams KB, Matto H, Harrington D. The traumatic stress institute belief scale as a measure of vicarious trauma in a national sample of clinical social workers. Fam Soc 2001; 82: 363–371. doi: 10.1606/1044-3894.178
2. Algamdi M. Prevalence of oncology nurses' compassion satisfaction and compassion fatigue: Systematic review and meta-analysis. Nurs Open 2022; 9(1):44-56. doi: 10.1002/nop2.1070
3. Al-Lamki L. Stress in the medical profession and its roots in medical school. Sultan Qaboos Univ Med J 2010; 10(2):156-159.
4. Assiri AM. Burden of burnout syndrome among ENT physicians in Saudi Arabia: A systematic review and meta-analysis. Medical Science 2023; 27: e144ms2919. doi: 10.54905/disssi/v27i133/e144ms2919
5. Brooker J, Julian J, Webber L, Chan J, Shawyer F, Meadows G. Evaluation of an occupational mindfulness program for staff employed in the disability sector in Australia. Mindfulness 2013; 4:122–136. doi: 10.1007/s12671-012-0112-7
6. Chemali Z, Ezzeddine FL, Gelaye B, Dossett ML, Salameh J, Bizri M, Dubale B, Fricchione G. Burnout among healthcare providers in the complex environment of the Middle East: A systematic review. BMC Public Health 2019; 19(1):1337. doi: 10.1186/s12889-019-7713-1
7. Cocker F, Joss N. Compassion fatigue among healthcare, emergency and community service workers: A systematic review. Int J Environ Res Public Health 2016; 13(6):618. doi: 10.3390/ijerph13060618
8. De-Hert S. Burnout in healthcare workers: Prevalence, impact and preventative strategies. Local Reg Anesth 2020; 13:171-183. doi: 10.2147/LRA.S240564
9. Dinibutun SR. Factors associated with burnout among physicians: An evaluation during a period of covid-19 pandemic. J Healthc Leadersh 2020; 12:85-94. doi: 10.2147/JHL.S270440
10. Figley CR. Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized. Routledge 1995. doi: 10.4324/9780203777381
11. Figley CR. Compassion fatigue: Toward a new understanding of the costs of caring in secondary traumatic stress: Self-care issues for clinicians, researchers and educators. The Sidran Press, Baltimore, MD, USA 1995; 3–28.
12. Freudenberger HJ. Staff Burn-Out. J Soc Issues 1974; 30:159-165. doi: 10.1111/j.1540-4560.1974.tb00706.x
13. Huang L, Caspari JH, Sun X, Thai J, Li Y, Chen FZ, Zhao XD. Risk and protective factors for burnout among physicians from standardized residency training programs in Shanghai: A cross-sectional study. BMC Health Serv Res 2020; 20(1):965. doi: 10.1186/s12913-020-05816-z
14. Kane L. Physician Burnout & Depression Report 2022: Stress, Anxiety and Anger. Medscape 2022. https://www.medscape.com/slideshow/2022-lifestyle-burnout-604664?faf=1
15. Mangoulia P, Koukia E, Alevizopoulos G, Fildissis G, Katostaras T. Prevalence of secondary traumatic stress among psychiatric nurses in Greece. Arch Psychiatr Nurs 2015; 29(5):333–8. doi: 10.1016/j.apnu.2015.06.001
16. Maslach C, Jackson SE. The measurement of experienced burnout. J Organ Behav 1981; 2:99-113. doi: 10.1002/job.4030020205
17. Maslach C, Schaufeli WB, Leiter MP. Job burnout. Annu Rev Psychol 2001; 52:397–422. doi: 10.11 46/annurev.psych.52.1.397
18. Mol MMC, Kompanje EJO, Benoit DD, Bakker J, Nijkamp MD. The prevalence of compassion fatigue and burnout among healthcare professionals in intensive care units: A systematic review. PLoS One 2015; 10(8):e0136955. doi: 10.1371/journal.pone.0136955
19. Nelson-Gardell D, Harris D. Childhood abuse history, secondary traumatic stress and child welfare workers. Child Welfare 2003; 82(1):5–26.
20. Pfifferling JH, Gilley KM. Overcoming compassion fatigue. Fam Pract Manag 2000; 7:39.
21. Rotenstein LS, Torre M, Ramos MA, Rosales RC, Guille C, Sen S, Mata DA. Prevalence of burnout among physicians: A systematic review. JAMA 2018; 320:1131–50. doi: 10.1001/jama.2018.12777
22. Shanafelt TD, Sloan JA, Habermann TM. The well-being of physicians. Am J Med 2003; 114:513–519. doi: 10.1016/s0002-9343(03)00117-7
23. Stamm BH. Compassion fatigue/satisfaction self-test (CFS). https://nwdrugtaskforce.ie/wp-content/uploads/2013/01/Compassion-Fatigue-Handout-6.pdf
24. Vredenburgh LD, Carlozzi AF, Stein LB. Burnout in counseling psychologists: Type of practice setting and pertinent demographics. Couns Psychol Q 1999; 12:293–302. doi: 10.1080/09515079908254099

25. Weintraub AS, Geithner EM, Stroustrup A, Waldman ED. Compassion fatigue, burnout and compassion satisfaction in neonatologists in the US. J Perinatol 2016; 36(11):1021–6.
26. Weintraub AS, Sarosi A, Goldberg E, Waldman ED. A cross-sectional analysis of compassion fatigue, burnout and compassion satisfaction in pediatric hematology-oncology physicians in the united states. J Pediatr Hematol Oncol 2020; 42(1):e50-e55. doi: 10.1097/MPH.0000000000001548
27. Zhang B, Li H, Jin X, Peng W, Wong CL, Qiu D. Prevalence and factors associated with compassion satisfaction and compassion fatigue among Chinese oncology healthcare professionals: A cross-sectional survey. Asia Pac J Oncol Nurs 2021; 9(3):153-160. doi: 10.1016/j.apjon.2021.12.012
28. Zhou AY, Panagioti M, Esmail A, Agius R, Van-Tongeren M, Bower P. Factors associated with burnout and stress in trainee physicians: A systematic review and meta-analysis. JAMA Netw Open 2020; 3(8):e2013761. doi: 10.1001/jamanetworkopen.2020.13761