PREDICTING BURNOUT AND PSYCHOLOGICAL DISTRESS RISKS OF HOSPITAL HEALTHCARE WORKERS

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ABSTRACT

Burnout and psychological distress were reported at higher rates among hospital healthcare workers. Despite this, there is a paucity of research examining the associated risk factors among workers across specialties and occupations in Asia. This paper aimed to examine the risk factors associated with burnout and psychological distress among Malaysian hospital healthcare workers from diverse medical specialties and occupations. A total of 368 doctors, nurses, assistant medical officers and hospital attendants were recruited from major medical and surgery departments in an urban general hospital. The participants were self-administered a questionnaire consisting of demographic information, Maslach Burnout Inventory-Human Services Survey and Depression Anxiety and Stress Scale. In the fully adjusted multivariate analyses, doctors were about four to five times more likely to be emotionally exhausted (aOR [adjusted Odds Ratio], 4.826; 95% CI [Confidence Interval]: 1.492-15.604, p<0.01), depressed (aOR, 5.221; 95% CI: 1.995-13.661, p<0.01) and stressed (aOR, 3.990; 95% CI: 1.473-10.809, p<0.01). Paediatric workers demonstrated three to five times higher risks of depression (aOR, 3.105, 95% CI: 1.043-9.243, p<0.05), anxiety (aOR, 3.517, 95% CI: 1.194-10.356, p<0.05) and stress (aOR, 5.404, 95% CI: .1.628-17.942, p<0.01). Emotional exhaustion (aOR, 1.046, 95% CI: .1.013-1.079, p<0.01) and depersonalization (aOR, 1.078, 95% CI: .1.015-1.145, p<0.05) led to higher risks of psychological distress, while stress predicted higher risks of burnout (aOR, 1.153, 95% CI: 1.062-1.251, p<0.01). There were occupational and departmental differences in susceptibility to burnout and psychological distress, requiring further investigation into the unique working environments and roles of hospital healthcare workers.

Keywords: Burnout, psychological distress, healthcare worker, healthcare personnel, hospital, Malaysia

INTRODUCTION

The healthcare environment is demanding and healthcare workers in the Southeast Asian region experience expanding job scope and responsibilities, coupled with the shortage and maldistribution of resources[1]. In addition, hospital healthcare workers serve patients with more chronic and severe illnesses and suffer from adverse working conditions such as excessive work load, interruptions in workflow, time pressure, zero tolerance for mistakes, and low social support[2]. This may have led to a high prevalence of burnout and psychological distress among healthcare workers[3].

Burnout is a phenomenon consisting of three syndromes, namely Emotional Exhaustion (EE), Depersonalisation (DP) and Personal Accomplishment (PA)[4]. A burned-out individual would report high degrees of emotional and physical overextension (EE), a cynical, distant and callous attitude toward work (DP), and a lower sense of professional efficacy (PA) in response to chronic work stress[4]. The burnout rates of healthcare workers differ, with up to a 54% prevalence found among US doctors[5], while a systematic review on occupation-related illnesses among UK doctors, revealed that burnout and stress were widely reported[3]. In Asia, between a quarter to half of healthcare workers surveyed reported experiencing burnout[6-9]. Factors associated with burnout included age, gender, marital status, working hours, workplace conflict, and encountering patients with complex conditions[10].

Prolonged and high levels of work-related stress and personal characteristics of healthcare workers may result in psychological distress, including depression, anxiety, and stress[11]. It was estimated that nearly one-third of all healthcare workers suffered from psychological morbidity[12-14]. Adverse personal and work-related factors such as gender, marital status, younger age, job demands, and medical specialty[2, 13, 15] were associated factors of psychological distress among healthcare workers. Furthermore, a close relationship between burnout and psychological distress was indicated[16].

It is important to research into the psychological well-being of healthcare workers as burnout and psychological distress had been shown to lead to the suboptimal care of patients[17]. However, there has been a lack of research which examined the magnitude and mechanisms underlying the association between burnout and psychological distress among healthcare workers from different specialties and occupations in Asia[18]. Moreover, Malaysian studies on healthcare workers' psychological well-being had focused mostly on medical students or trainees rather than on practicing healthcare workers[8-9]. Hence, this study aimed to examine the associated risk factors of burnout and psychological distress among Malaysian hospital healthcare workers from diverse medical specialties and occupational backgrounds.

METHODS

Study Design & Study Site

This research was a cross-sectional study. A major general hospital in the Klang Valley, Malaysia, Hospital Canselor Tuanku Muhriz, was chosen as the study site. This 848-bed hospital is strategically located in the capital of Malaysia and served 35,837 and 530,910 inpatients and outpatients respectively in 2014[19].

Participants

The core medical and surgical departments within most hospitals (general medicine, general surgery, accident and emergency, obstetrics and gynaecology, paediatrics, psychiatry and orthopaedics) were purposively sampled to include doctors, nurses, assistant medical officers and hospital attendants. All participants were Malaysians while trainees were excluded from the study. By assuming a 95% confidence level, and a +/-5% error margin, a total of 385 respondents were needed in this research. 424 participants were targeted to be recruited after a drop-out rate estimation of 10%. Systematic random sampling was employed to recruit all participants. However, primary attempts to recruit doctors employing systematic random sampling was unsuccessful as they were inaccessible during clinical hours. This resulted in only a 33% response rate among doctors even after repeated visits by the researchers. After three months, it was decided that doctors would be recruited through universal sampling in Continuing Medical Education (CME) workshop sessions.

Materials

The socio-demographic characteristics of healthcare workers were collected, including age, gender, marital status, years of service in healthcare, occupation, and department. Family suicide history were measured through a question from the Attitudes Toward Suicide (ATTS) questionnaire: "Has any of the following persons made a suicide attempt: father/mother/brother/sister/child/partner?" This item was scored "yes" or "no"[20]. The ATTS consists of three sections: contact with the suicide problem, attitudes and demographics. The question on family suicide history is part of the section which measures a participant's contact with suicidal individuals in their surroundings, such as among immediate family members, friends and colleagues[20].

The Maslach Burnout Inventory-Human Services Survey (MBI-HSS) is a 22-item scale used to measure the level of burnout among human services providers such as healthcare workers. EE, DP and PA domains were measured on a six-point Likert scale, from "Never - 0" to "Every day - 6"[4]. Total scores were calculated by adding the participants' response to the 22 questions according to the three burnout domains. The cut-off scores of high EE (≥ 27), high DP (≥ 13) and low PA (≥ 39) were used to determine the presence of the burnout symptoms, while a healthcare worker is considered burned out if he or she scored high on EE, DP or both[4]. The MBI-HSS was translated and cross-culturally validated in Malaysia among 220 nurses[21]. It exhibited acceptable internal consistency of 0.80, and intra class correlation of 0.85 (EE), 0.77 (DP), and 0.73 (PA) Cronbach's α respectively[21].

The Depression Anxiety and Stress Scale (DASS-21) was administered to measure the presence of psychological distress among healthcare workers. This instrument was widely utilized in community and clinical settings[22]. The domains of depression, anxiety, and stress were measured by 21 items (7 items per domain), scored on a four-point Likert scale ranging from "Never - 0" to "Almost always - 3" in the past week. Scores from each domain were added and multiplied by two to allow for comparison with the norms established by DASS-42. Total scores were calculated by adding the participants' response to the 21 questions according to the three domains. A cut-off score of ≥ 10 was used to identify the presence of depression symptoms, ≥ 8 for anxiety, and ≥ 15 for stress[13, 22]. Participants were considered to demonstrate psychological distress if they scored above the cut-off point of either depression, anxiety, stress, or a combination of them. The original DASS-21 was translated and cross-culturally validated in the Malaysian population, demonstrating internal consistency of 0.84, 0.74, and 0.79 Cronbach's α values for depression, anxiety, and stress respectively, and a moderate correlation with the Hospital Anxiety and Depression Scales[23]. Similarly, a more recent study also found adequate internal consistency of 0.88 total Cronbach's α value, while the subscales achieved 0.77, 0.70 and 0.74 α for the depression, anxiety and stress subscales respectively[24].

Procedures

Participants were approached at their respective wards or clinics. Participation was voluntary and

strict confidentiality was maintained where no identifier was used in the questionnaire. After giving informed consent, the participant filled out the self-administered questionnaire and sealed it in a given envelope before returning to the researcher within a week.

Statistical Analysis

Univariate and multivariate statistical analyses were conducted using the Statistical Package for Social Sciences for Windows v.21 (SPSS Inc.; Chicago, IL, USA). Standard descriptive statistics, Chi-square (for categorical variables) and Mann-Whitney U tests (for continuous variables) were employed to characterize and compare the socio-demographic variables with burnout and psychological distress. Multivariate logistic regressions were conducted to test models for burnout, psychological distress, and their respective subscales. For all comparisons, differences were determined using two-tailed tests while p-values less than 0.05 were considered statistically significant. Missing data were deleted list-wise during the statistical analysis. This research obtained ethical approval from the Research Ethics Committee, Universiti Kebangsaan Malaysia (NN-035-2015).

RESULTS

Demographic background

A total of 368 participants aged between 22 to 54 years old (*Median* age = 32.00; *IQR* = 6.00) responded to the questionnaire. Seven participants were excluded from statistical analysis due to missing data. Most of the participants were Muslim (86%), female (69%) and married (70%). A majority of healthcare workers were nurses (41%) and from the accident and emergency department (19%); (Table 1 and Table 2).

Burnout

Univariate analyses revealed that healthcare workers with less years of service were more likely to report burnout symptoms (*Mean Rank* difference = -29.72, n = 346), U = 10698.00, z = -2.57 (corrected for ties), p < 0.05). Healthcare workers who experienced burnout were also significantly more likely to indicate being depressed (*Mean Rank* difference = 72.80, n = 361), U = 8361.00, z = -6.20 (corrected for ties), p < 0.001), anxious (*Mean Rank* difference = 61.89, n = 361), U = 9208.00, z = -5.25 (corrected for ties), p < 0.001) and stressed (*Mean Rank* difference = 82.43, n = 361), U = 7613.00, z = -6.98 (corrected for ties), p < 0.001). In addition, doctors were the most likely among all occupations to report burnout symptoms (51%; x^2 (3, N = 360) = 27.92, p < 0.001), while Muslims were the least likely to do so (28%; x^2 (4, N = 360) = 16.15, p < 0.01); (Table 1).

Multivariate logistic regressions were used to test the significance of risks for burnout, EE, DP and PA among healthcare workers (with age, years of service in health care, gender, religion, marital status, occupation, department, family suicide history, and psychological distress as independent variables). Hosmer and Lemeshow tests for all models were non-significant (*p*>0.05) indicating good model fit, while all omnibus tests of model coefficients were significant (p<0.05).

Doctors were about five times (adjusted Odds Ratio [aOR], 4.826, 95% CI: 1.492-15.604, *p*<0.01) more likely to report suffering from EE and more than twice (aOR, 2.439, 95% CI: 1.020-5.835, *p*<0.05) as likely to indicate low PA. Healthcare workers from the general surgery department were less likely to indicate EE symptoms (aOR, 0.224, 95% CI: 0.061-0.828, *p*<0.05). Hindus (aOR, 0.045, 95% CI: 0.003-0.746, *p*<0.05) and Christians (aOR, 0.039, 95% CI: 0.002-0.727, *p*<0.05) were less likely to report low PA. Healthcare workers reporting depression symptoms were less likely to suffer from low PA (aOR, 0.898, 95% CI: 0.835-0.966, *p*<0.01) while stressed healthcare workers were more likely to indicate being emotionally exhausted (aOR, 1.105, 95% CI: 1.011-1.208, *p*<0.05) and burnt out (aOR, 1.153, 95% CI: 1.062-1.251, *p*<0.01); (Table 3).

Psychological Distress

Results from univariate analyses indicated that 70% of doctors reported psychological distress symptoms, which was significantly higher than other occupations (x^2 (3, N = 360) = 8.55, *p*<0.05), while healthcare workers indicating EE (*Mean Rank* difference = 61.37, n = 361), U = 10402.50, z = -5.50 (corrected for ties), p < 0.001) and DP (*Mean Rank* difference = 55.85, n = 361), U = 10885.00, z = -5.02 (corrected for ties), p < 0.001) were significantly more psychologically distressed.

Table 1: *Chi-square test analyses of healthcare workers with burnout and psychological distress* (N=361)

Variables	Total n (%)	With burnout			With psychological distress		
		n (%)	x^2	*p*-value	n (%)	x^2 (*df*)	*p*-value
Gender							
Female	253 (68.8)	84 (33.6)	1.857	.173	155 (51.8)	3.271 (1)	.071
Male	111 (30.2)	29 (26.4)			57 (62.0)		
Religion							
Islam	318 (86.4)	89 (28.3)	16.146 (4)	.003**	182 (58.0)	1.462 (4)	.833
Buddhist	18 (4.9)	12 (66.7)			11 (61.1)		
Hindu	14 (3.8)	4 (28.6)			9 (64.3)		
Christian	9 (2.4)	5 (55.6)			6 (66.7)		
Others	5 (1.4)	3 (60.0)			4 (80.0)		
Marital status							
Married	257 (69.8)	74 (29.1)	3.331 (2)	.189	143 (64.5)	2.494 (2)	.287
Single	94 (25.5)	36 (38.7)			60 (56.3)		
Divorced/Separated/Widowed	13 (3.5)	3 (23.1)			9 (69.2)		
Occupation							
Nurse	151 (41.0)	41 (27.3)	27.921 (3)	<.001***	82 (54.7)	8.547 (3)	.036*
Doctor	100 (27.2)	51 (51.0)			70 (70.0)		
Hospital Attendant	88 (23.9)	14 (16.5)			49 (57.6)		
Assistant Medical Officer	25 (6.8)	7 (28.0)			11 (44.0)		
Department							
Accident & Emergency	70 (19.0)	25 (36.2)	5.071 (6)	.535	36 (52.2)	6.078 (6)	.415
Medical	57 (15.5)	22 (38.6)			35 (61.4)		
Orthopaedics	54 (14.7)	14 (25.9)			31 (57.4)		
Psychiatry	51 (13.9)	12 (24.5)			28 (57.1)		
Obstetrics & Gynaecology	47 (12.8)	16 (34.0)			26 (55.3)		
Paediatrics	43 (11.7)	14 (32.6)			32 (74.4)		
Surgery	41 (11.1)	10 (24.4)			24 (58.5)		
Family history of suicide							
Yes	22 (6.0)	10 (45.5)	2.689 (1)	.101	15 (68.2)	.704 (1)	.401

Note. *p < 05. **p < .01. ***p < .001

n = frequency, x^2 = Chi-square test

N/n and % are based on available data

Table 2: *Mann-Whitney U-test analyses of healthcare workers with burnout and psychological distress (N=361)*

Variables	Total Median (IQR)	With burnout			With psychological distress		
		Mean rank d	U	p-value	Mean rank d	U	p-value
Age	32.00 (6.00)	-10.92	11403.00	.335	14.17	12443.50	.187
Years of service	7.96 (7.71)	-29.71	10698.00	.010*	3.34	14318.50	.759
Burnout							
Emotional Exhaustion	19.00 (17.00)	-	-	-	61.37	10402.50	<.001***
Depersonalization	5.00 (8.00)	-	-	-	55.85	10885.00	<.001***
Personal Accomplishment	38.00 (12.00)	-	-	-	-16.78	14296.00	.132
Psychological distress							
Depression	6.00 (12.00)	72.80	8361.00	<.001***	-	-	-
Anxiety	8.00 (10.00)	61.88	9208.00	<.001***	-	-	-
Stress	10.00 (14.00)	82.43	7613.00	<.001***	-	-	-

Note. *p < 05. **p < .01. ***p < .001

IQR=interquartile range, *d*=difference, *U*=U statistics

N/n and % are based on available data

Multivariate logistic regressions were used to test the significance of risks for psychological distress, depression, anxiety and stress symptoms among healthcare workers (with age, years of service in health care, gender, religion, marital status, occupation, department, family suicide history, and burnout as independent variables). Hosmer and Lemeshow tests for all models were non-significant (*p*>0.05) indicating good model fit, while all omnibus tests of model coefficients were significant (*p*<0.05).

Doctors were 5.221 times more likely to report being depressed (95% CI: 1.995-13.661, *p*<0.01) and 3.990 times more likely to report being stressed (95% CI: 1.473-10.809, *p*<0.01). Meanwhile, paediatric healthcare workers were 5.404 times more likely to indicate stress symptoms (95% CI: .1.628-17.942, *p*<0.01), 3.517 times more likely to report anxiety (95% CI: 1.194-10.356, *p*<0.05) and 3.105 times more likely to report depression (95% CI: 1.043-9.243, *p*<0.05). EE (aOR, 1.046, 95% CI: .1.013-1.079, *p*<0.01) and DP (aOR, 1.078, 95% CI: .1.015-1.145, *p*<0.05) accounted for increased risks for psychological distress (Table 4).

DISCUSSION

To our knowledge, this is the first study in Asia to examine the predictors of burnout and psychological distress risks among practicing hospital healthcare workers involving a wide spectrum of occupations and departments.

The results of this study's fully adjusted statistical models revealed the immense psychological challenges that doctors faced compared to other healthcare workers. The significantly higher risks of depression, stress, emotional exhaustion and low personal accomplishment among doctors were confirmed by previous studies on their poor psychological well-being[2, 15, 25]. This could be due to increased responsibility and accountability among them[26], compared to workers from other professions. Burnout and psychological distress among doctors are serious concerns deserving a response from the healthcare management, considering the research associating burnout and psychological distress with lower patient safety[17].

Table 3: *Multivariate logistic regression analyses for factors predicting burnout among healthcare workers (N=361)*

Variable	High Emotional Exhaustion				High Depersonalization				Low Personal Accomplishment				Burned out			
	aOR	95% CI		p-value	aOR	95% CI		p-value	aOR	95% CI		p-value	aOR	95% CI		p-value
		Lower	Upper			Lower	Upper			Lower	Upper			Lower	Upper	
Constant	.086			.256	.259			.570	8.793			.201	.351			.472
Age	.906	.801	1.026	.119	.933	.809	1.077	.344	.967	.893	1.048	.417	.931	.836	1.037	.193
Years of service	1.025	.908	1.157	.694	.966	.842	1.108	.619	1.041	.956	1.134	.352	1.013	.910	1.129	.810
Gender																
Male[†]	1.000				1.000				1.000				1.000			
Female	1.987	.894	4.418	.092	1.003	.421	2.388	.995	.787	.427	1.454	.445	1.249	.607	2.569	.546
Religion																
Islam[†]	1.000				1.000				1.000				1.000			
Buddhist	4.155	.277	62.440	.303	1.220	.088	16.833	.882	.223	.018	2.726	.240	1.996	.467	8.525	.351
Hindu	12.073	.629	231.550	.098	3.074	.179	52.880	.439	.045	.003	.746	.031*	.718	.156	3.298	.671
Christian	4.915	.237	101.773	.303	2.459	.123	49.257	.556	.039	.002	.727	.030*	2.305	.420	12.639	.336
Others	6.738	.317	143.050	.221	6.375	.322	126.255	.224	.063	.003	1.176	.064	.822	.070	9.626	.876
Marital status																
Single[†]	1.000				1.000				1.000				1.000			
Married	1.958	.917	4.182	.083	1.019	.463	2.244	.963	.834	.447	1.558	.570	1.652	.816	3.346	.163
Divorced/ Separated/ Widowed	1.142	.174	7.485	.890	2.525	.376	16.975	.341	1.555	.367	6.591	.549	.798	.128	4.981	.809
Occupation																
Hospital Attendant[†]	1.000				1.000				1.000				1.000			
Nurse	2.485	.871	7.090	.089	1.227	.375	4.009	.735	1.903	.979	3.699	.058	1.895	.767	4.678	.166
Assistant Medical Officer	1.433	.302	6.806	.650	2.694	.606	11.971	.193	1.563	.521	4.689	.426	1.130	.291	4.394	.860
Doctor	4.826	1.492	15.604	.009**	1.770	.491	6.376	.383	2.439	1.020	5.835	.045*	2.720	.962	7.690	.059
Department																
Orthopaedics[†]	1.000				1.000				1.000				1.000			
Psychiatry	.330	.095	1.144	.081	.311	.053	1.809	.194	.482	.188	1.237	.129	.461	.147	1.441	.183
General medicine	.708	.233	2.154	.542	1.788	.498	6.422	.373	1.115	.452	2.747	.813	1.122	.399	3.156	.827
A & E	1.239	.404	3.804	.708	1.725	.456	6.532	.422	1.179	.474	2.934	.723	1.431	.500	4.093	.504
Paediatrics	.595	.170	2.080	.416	1.537	.375	6.292	.550	1.382	.504	3.789	.530	.662	.202	2.162	.494
General	.224	.061	.828	.025*	1.047	.266	4.126	.948	.894	.350	2.283	.815	.449	.140	1.442	.178

surgery

	aOR			p	aOR			p	aOR			p	aOR			p
O & G	.600	.180	2.002	.406	.738	.141	3.875	.720	1.088	.414	2.857	.864	.574	.176	1.870	.357
Family suicide history																
No†	1.000				1.000				1.000				1.000			
Yes	.460	.117	1.811	.267	.630	.167	2.377	.495	1.029	.344	3.080	.959	.924	.266	3.210	.901
Psychological Distress																
Depression	1.046	.960	1.139	.303	1.023	.932	1.122	.632	.898	.835	.966	.004**	.998	.923	1.080	.969
Anxiety	.975	.899	1.058	.549	1.022	.930	1.124	.649	1.067	.995	1.144	.068	.970	.898	1.047	.433
Stress	1.105	1.011	1.208	.028*	1.063	.964	1.173	.223	1.012	.944	1.085	.734	1.153	1.062	1.251	.001**

Note. *$p < .05$. **$p < .01$. ***$p < .001$

aOR – adjusted Odds Ratio, CI = Confidence Interval.

A&E = Accident and emergency, O&G = Obstetrics and gynaecology.

† Reference group

Table 4: *Multivariate logistic regression analyses for factors predicting psychological distress among healthcare workers (N=361)*

Variable	Depression aOR	95% CI Lower	Upper	p-value	Anxiety aOR	95% CI Lower	Upper	p-value	Stress aOR	95% CI Lower	Upper	p-value	With psychological distress aOR	95% CI Lower	Upper	p-value
Constant	.058			.131	.328			.518	.056			.157	.194			.184
Age	1.061	.968	1.163	.209	1.006	.929	1.091	.876	1.034	.938	1.139	.503	1.037	.955	1.126	.393
Years of service	.992	.898	1.096	.875	1.076	.985	1.175	.104	.981	.882	1.090	.719	1.030	.942	1.127	.516
Gender																
Male†	1.000				1.000				1.000				1.000			
Female	1.617	.799	3.271	.181	1.083	.578	2.026	.804	1.834	.843	3.992	.126	1.209	.642	2.278	.556
Religion																
Islam†	1.000				1.000				1.000				1.000			
Buddhist	.657	.061	7.080	.729	.821	.075	8.961	.872	.470	.039	5.636	.551	.491	.113	2.124	.341
Hindu	.312	.023	4.264	.383	.237	.017	3.289	.283	.407	.026	6.365	.522	.690	.149	3.202	.636
Christian	.707	.048	10.350	.800	.694	.045	10.813	.795	.545	.033	8.889	.670	.455	.083	2.506	.366
Others	.364	.022	5.991	.479	.163	.010	2.605	.200	.467	.022	9.817	.624	.943	.086	10.358	.961
Marital status																
Single†	1.000				1.000				1.000				1.000			
Married	.570	.282	1.156	.119	.619	.318	1.205	.158	.572	.265	1.234	.154	.566	.288	1.114	.099
Divorced/ Separated/ Widowed	.524	.105	2.618	.431	1.096	.218	5.516	.912	.372	.062	2.217	.278	.940	.188	4.705	.940
Occupation																
Hospital Attendant†	1.000				1.000				1.000				1.000			
Nurse	1.342	.589	3.055	.484	.966	.481	1.939	.922	.704	.287	1.724	.442	.969	.482	1.948	.929
Assistant Medical Officer	3.086	.847	11.247	.088	.509	.163	1.593	.246	.985	.214	4.534	.985	.630	.200	1.979	.429
Doctor	5.221	1.995	13.661	.001**	1.752	.711	4.314	.223	3.990	1.473	10.809	.006**	1.676	.670	4.191	.270
Department																
Orthopaedics†	1.000				1.000				1.000				1.000			
Psychiatry	1.209	.425	3.443	.722	.745	.293	1.892	.536	1.589	.490	5.148	.440	.836	.328	2.130	.708
General medicine	1.683	.612	4.626	.313	1.750	.686	4.461	.241	2.266	.743	6.911	.151	1.345	.519	3.486	.541
A & E	.617	.207	1.834	.385	1.285	.513	3.217	.593	.827	.237	2.890	.766	.954	.378	2.405	.920
Paediatrics	3.105	1.043	9.243	.042*	3.517	1.194	10.356	.022*	5.404	1.628	17.942	.006**	2.696	.900	8.074	.076
General	2.037	.718	5.779	.181	2.000	.746	5.360	.168	2.448	.769	7.793	.130	1.508	.560	4.062	.417

surgery

	aOR	CI		p	aOR	CI		p	aOR	CI		p	aOR	CI		p
O & G	.577	.176	1.889	.364	.775	.289	2.083	.614	.620	.153	2.510	.503	.881	.325	2.391	.804
Family suicide history																
No†	1.000				1.000				1.000				1.000			
Yes	1.765	.564	5.528	.329	1.882	.592	5.980	.284	2.580	.739	9.009	.138	1.839	.546	6.192	.325
Burnout																
Emotional Exhaustion	1.040	1.006	1.076	.020**	1.031	1.000	1.063	.052	1.052	1.014	1.091	.007**	1.046	1.013	1.079	.005**
Depersonal-ization	1.033	.977	1.093	.255	1.079	1.019	1.144	.010**	1.033	.971	1.098	.303	1.078	1.015	1.145	.015*
Personal Accomplishment	.974	.945	1.003	.078	.990	.964	1.017	.470	.994	.960	1.028	.710	.983	.957	1.010	.224

Note. *p < .05. **p < .01. ***p < .001

aOR – adjusted Odds Ratio, CI = Confidence Interval.

A&E = Accident and emergency, O&G = Obstetrics and gynaecology.

† Reference group

Workers in the paediatrics specialty demonstrated higher risks of depression, anxiety and stress, while psychological distress occurred among two-thirds of paediatric healthcare workers. Thus, while the level of burnout did not differ from other specialties, practicing in the paediatrics department could expose healthcare workers to unique sets of events that could predispose them to psychological morbidity, such as dealing with younger patients' death and suffering, the unique patient communication requirements, the relatively greater involvement of parents, and associated technical complexities in treatment[27]. Meanwhile, surgery workers indicated lower emotional exhaustion rates. Similar results were found among surgeons elsewhere, which could be attributed to the self-selection of already highly motivated and resilient doctors to specialise in a challenging environment[28]. However, this study expanded on previous studies to indicate that other surgery workers, such as nurses and assistant medical officers, similarly experienced less emotional overextension. Therefore, further studies need to establish whether personal, environmental, or both factors contributed to this situation.

Burnout in the form of emotional exhaustion and depersonalization independently led to significantly higher risks of psychological distress as a whole, even after adjusting for demographic characteristics. Specifically, emotional fatigue differentially predicted depression risk, while anxiety led to higher risks of cynical distancing among healthcare workers. The depletion of an individual's psychological resources to deal with life stresses could lead to a higher susceptibility to experiencing psychological morbidity as a reaction to exhausting work conditions[29]. This is confirmed by the current study, where only stress from among the three domains of psychological distress predicted overall burnout.

Those with less years of service had increased probability of experiencing burnout, as confirmed elsewhere[18]. This may be due to an individual's inexperience in prioritizing his or her goals. The failure to invest available resources effectively may lead to the tendency to report higher job demands and less ability to cope[30].

This study has several limitations. First, even though religious affiliation was significantly predictive of burnout risk, this should be viewed as tentative due to the small number of non-Muslim participants recruited. Secondly, it should be noted that only half the rate of self-reported depression and anxiety disorders were confirmed to reach clinical significance upon diagnosis[31]. Finally, doctors were recruited through universal sampling from CME sessions and therefore selection bias could not be ruled out. For example, doctors who chose to attend CME sessions could be more prone to burnout and psychological distress due to the additional training hours involved. In addition, participants may be subject to demand characteristics such as answering the questionnaire in a socially desirable manner. Future studies should include a nationally representative sample of all healthcare workers in order to establish more generalizable prevalence rates of their psychological morbidity. In addition, comparison of practicing healthcare workers with those in training could disclose the unique challenges each of them face.

CONCLUSIONS

Healthcare workers experience high levels of work stress as they are expected to not only have professional expertise, but also to possess communication skills, to be accessible, and to demonstrate organizational abilities[32]. This study revealed that there were demographic, occupational and departmental differences in susceptibility to experiencing burnout and psychological distress among hospital healthcare workers. Furthermore, workplace fatigue independently led to higher risks of experiencing psychological distress. Hospital authorities and healthcare policy makers need to address this systemic issue to improve the psychological well-being of healthcare workers.

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