


Burnout and professional fulfilment among surgeons during the COVID-19 pandemic

T. Kabir, A. Y. H. Tan, F. H. X. Koh * and M.-H. Chew

Department of General Surgery, Sengkang General Hospital, Sengkang General Hospital, 110 Sengkang East Way, 544886 Singapore (e-mail: frederick.koh.h.x@singhealth.com.sg)

Editor

If the COVID-19 pandemic is likened to a modern-day world war, then healthcare workers are akin to frontline troops bearing the brunt of the onslaught. The multitude of psychological stressors has resulted in many reports of unprecedented levels of anxiety during this outbreak^{1,2}. This study was performed to evaluate the degree of burnout and sense of professional fulfilment among surgeons in the authors' unit during these tumultuous times.

All doctors working in the Departments of General Surgery, Orthopaedic Surgery, Urology and Otorhinolaryngology of Sengkang General Hospital were invited to participate in a cross-sectional survey incorporating the Professional Fulfilment Index³. The overall response rate was 75.0 per cent (96 of 128). Respondent characteristics are summarized in [Table 1](#). The mean (s.d.) professional fulfilment score was 2.82(0.80) on a scale of 0–4 (Cronbach's $\alpha = 0.96$). Given a score of 3 or higher as criterion for high professional fulfilment, 51 per cent of surgeons (49 of 96) reported having professional fulfilment. The mean work exhaustion burnout subscale value was 1.29(0.95) (Cronbach's $\alpha = 0.89$). Forty surgeons (42 per cent) had a score of 1.33 or higher, indicating the presence of work exhaustion burnout. The interpersonal disengagement burnout subscale mean was 0.95(0.99) (Cronbach's $\alpha = 0.95$), and this was experienced by 33 surgeons (34 per cent), who had a score of 1.33 or higher. The mean overall burnout (combination of work exhaustion and interpersonal disengagement subscales) score was 1.09(0.91) (Cronbach's $\alpha = 0.95$). Overall, 33 surgeons (34 per cent) experienced evidence of burnout (combined score of at least 1.33).

Scores across the various surgeon roles are detailed in [Table 2](#). Consultants had the highest professional fulfilment scores (mean 3.06(0.82)), followed by senior residents/registrars/resident physicians, junior residents/medical officers, and house officers ($P = 0.74$). Conversely, both work exhaustion burnout and interpersonal disengagement burnout scores were lowest in the consultant group, and increased gradually from the most senior to the most junior members of the teams. However, only the work exhaustion burnout scores were significantly different ($P = 0.007$).

Based on the results of this study, it is heartening to note that both the mean work exhaustion scores and interpersonal disengagement scores were well below the cut-off of 1.33, indicating the presence of burnout, and only about one-third of respondents

fulfilled the criteria for burnout. This can be attributed to several deliberate interventions undertaken at the institutional level.

At the start of the pandemic, all healthcare workers were provided with adequate personal protective equipment, and were given refresher training on proper usage. Workflows were established for managing infected patients in different scenarios, and full-dress rehearsals were conducted to familiarize everyone with the various protocols⁴. Staff members were sent daily e-mail updates on the progress of the pandemic. Directives were updated regularly by the hospital management to keep up with the changing disease burden. Staff were also provided with resources for managing stress, such as confidential access to mental health professionals.

Non-essential work such as elective operations were postponed and outpatient clinic patient loads were minimized in preparation for the anticipated surge in COVID-19 cases. Within each department, surgeons were segregated into teams in order to minimize interaction and provide backup in case any staff members were infected. Although only 51 per cent of survey respondents reported experiencing professional fulfilment, surgeons redeployed to support other frontline departments dealing with critically ill infected patients described a sense of satisfaction at being able to support their colleagues in their moment of crisis.

It was observed that surgeons who have been practising longer reported greater professional fulfilment and lower rates of burnout ([Table 2](#)). As surgeons increase in seniority, they have greater clinical experience to deal with difficult clinical situation, fewer on-call duties, more administrative support and more autonomy over the work they do, resulting in less stress and a greater sense of satisfaction. At the time of administration of this survey, the most junior doctors were the house officers, who were fresh graduates just starting their first month of work. Understandably, many were not prepared to begin their medical careers fighting a global pandemic, and may have felt overwhelmed. Nevertheless, the results of this survey will direct us to focus more resources on this group of individuals.

The battle against COVID-19 will be long drawn, and the psychological effects on clinicians may linger long after the pandemic subsides⁵. Larger-scale studies should be performed in order to better understand the needs of surgeons in this current climate, and support measures should be implemented at both

Table 1 Distribution of respondent characteristics

	Total cohort	General Surgery	Orthopaedic Surgery	Urology	Otorhinolaryngology	P
No. of respondents	96 of 128 (75.0)	42 of 54 (78)	33 of 48 (69)	8 of 10 (80)	13 of 16 (81)	
Sex						0.01
M	65 (68)	21 (50)	28 (85)	7 (88)	9 (69)	
F	31 (32)	21 (50)	5 (15)	1 (12)	4 (31)	
Age (years)						0.48
< 30	29 (30)	15 (36)	8 (24)	1 (12)	5 (38)	
30–39	48 (50)	19 (45)	16 (48)	6 (75)	7 (54)	
40–49	14 (15)	7 (17)	5 (15)	1 (12)	1 (8)	
> 50	5 (5)	1 (2)	4 (12)	0 (0)	0 (0)	
Relationship status						0.10
Single	42 (44)	23 (55)	9 (27)	3 (37)	7 (54)	
Partnered	54 (56)	19 (45)	24 (73)	5 (63)	6 (46)	
Role						0.33
Senior consultant/ consultant/associate con- sultant	42 (44)	17 (40)	15 (45)	5 (66)	5 (38)	
Senior resident/ registrar/ resident physician	16 (17)	4 (10)	8 (24)	1 (12)	3 (23)	
Junior resident/medical officer	28 (29)	13 (31)	8 (24)	2 (25)	5 (38)	
House officer	10 (10)	8 (10)	2 (6)	0 (0)	0 (0)	
Children						0.19
Yes	40 (42)	13 (31)	17 (52)	5 (63)	5 (38)	
No	56 (58)	29 (69)	16 (48)	3 (37)	8 (62)	
Senior citizens (age ≥ 65 years) in same household						0.59
Yes	28 (29)	11 (26)	9 (27)	4 (50)	4 (31)	
No	68 (71)	31 (74)	24 (73)	4 (50)	9 (69)	
Domestic help available						0.53
Yes	39 (41)	14 (33)	14 (42)	4 (50)	7 (54)	
No	57 (59)	28 (67)	19 (58)	4 (50)	6 (46)	
Exposure to COVID-19 positive patients over past 3 months						< 0.001
Not at all	9 (9)	2 (5)	7 (21)	0 (0)	0 (0)	
Rarely (< 1/fortnight)	33 (34)	15 (36)	10 (30)	2 (25)	6 (46)	
Moderately often (≥ 1/ fortnight)	41 (43)	23 (55)	6 (18)	5 (63)	7 (54)	
Often (> 3/week)	13 (14)	2 (5)	10 (30)	1 (12)	0 (0)	
Deployment outside usual scope of work during COVID-19 pandemic						0.01
Dormitory (swabbing/ serology)	44 (46)	21 (50)	13 (39)	2 (25)	8 (62)	
Dormitory (medical outpost)	1 (1)	1 (2)	0 (0)	0 (0)	0 (0)	
Covering COVID-19 ward	3 (3)	0 (0)	3 (9)	0 (0)	0 (0)	
ICU	2 (2)	2 (5)	0 (0)	0 (0)	0 (0)	
Emergency department (swabbing)	3 (3)	0 (0)	0 (0)	0 (0)	3 (23)	
NCID	1 (1)	1 (2)	0 (0)	0 (0)	0 (0)	
None of the above	42 (44)	17 (40)	17 (52)	6 (75)	2 (15)	

Values in parentheses are percentages. NCID, National Centre for Infectious Diseases.

Table 2 Comparison of scores across surgeon roles

	Total cohort	Senior consultant/ consultant/associ- ate consultant	Senior resident/ registrar/resident physician	Junior resident/medical officer	House officer	P
Professional fulfil- ment score	2.82(0.80)	3.06(0.82)	2.73(0.83)	2.63(0.74)	2.55(0.63)	0.74
Work exhaustion burnout sub- scale	1.29(0.95)	0.92(0.87)	1.39(0.74)	1.59(1.05)	1.83(0.76)	0.007
Interpersonal dis- engagement burnout sub- scale	0.95(0.99)	0.73(0.97)	0.96(0.87)	1.11(1.08)	1.43(0.87)	0.60

Values are mean(s.d.).

institutional and national levels to safeguard the mental well-being of the surgical workforce.

Disclosure. The authors declare no conflict of interest.

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