swiss medical weekly

Original article | Published 16 May 2024 | doi:https://doi.org/10.57187/s.3421
Cite this as: Swiss Med Wkly. 2024;154:3421

Physician wellbeing and burnout in emergency medicine in Switzerland

Eric P. Heymann[abc], Valerie Romann[ad], Rod Lim[ef], Kristine Van Aarsen[f], Nour Khatib[eg], Thomas C. Sauter[ach], Barbara Schild[ai], Stefan M. Mueller[ajk]

[a] Swiss Society of Emergency and Rescue Medicine, Switzerland
[b] Department of Emergency Medicine, Cantonal Hospital of Neuchâtel, Neuchâtel, Switzerland
[c] Department of Emergency Medicine, Faculty of Medicine, University of Bern, Switzerland
[d] Department of Emergency Medicine, Tiefenau Hospital, Bern, Switzerland
[e] Canadian Association of Emergency Physicians, Canada
[f] Department of Paediatric Emergency Medicine, London Health Sciences Centre, Ontario, Canada
[g] University of Toronto, Faculty of Medicine, Toronto, Canada
[h] Department of Emergency Medicine, Bern University Hospital, Bern, Switzerland
[i] Croce verde Bellinzona e di Tre Valli, Bellinzona, Switzerland
[j] Department of Anaesthesiology, Stadtspital, Zurich, Switzerland
[k] Schutz & Rettung Zürich, Zürich

Summary

Emergency physicians are the most at-risk medical specialist group for burnout. Given its consequences for patient care and physician health and its resulting increased attrition rates, ensuring the wellbeing of emergency physicians is vital for preserving the integrity of the safety net for the healthcare system that is emergency medicine. In an effort to understand the current state of practicing physicians, this study reviews the results of the first national e-survey on physician wellbeing and burnout in emergency medicine in Switzerland. Addressed to all emergency physicians between March and April 2023, it received 611 complete responses. More than half of respondents met at least one criterion for burnout according to the Maslach Burnout Inventory – Human Services Survey (59.2%) and the Copenhagen Burnout Inventory (54.1%). In addition, more than half reported symptoms suggestive of mild to severe depression, with close to 20% screening positively for moderate to severe depression, nearly 4 times the incidence in the general population, according to the Patient Health Questionnaire-9. We found that 10.8% of respondents reported having considered suicide at some point in their career, with nearly half having considered this in the previous 12 months. The resulting high attrition rates (40.6% of respondents had considered leaving emergency medicine because of their working conditions) call into question the sustainability of the system. Coinciding with trends observed in other international studies on burnout in emergency medicine, this study reinforces the fact that certain factors associated with wellbeing are intrinsic to emergency medicine working conditions.

Dr med. Eric Heymann
Médecin Chef Adjoint
Département des Urgences
Réseau hospitalier neuchâtelois
Rue de la Maladière 45
CH-2000 Neuchâtel
eric.heymann[at]rhne.ch

Introduction

Burnout is defined as an occupational phenomenon resulting from chronic workplace stress [1]. It is characterised by three dimensions: an emotional component (feeling of energy depletion or exhaustion), a depersonalisation component (increased mental distance from one's job or feelings of negativism or cynicism related to one's job) and a personal accomplishment component (reduced professional efficacy) [2]. Burnout is not a disease but rather a state, and it is a risk factor for the development of mental and physical illnesses, such as depression, hypertension, multiple sclerosis and cancer [3].

Among healthcare professionals, emergency physicians are the most at-risk specialist group for burnout, with consequences not only for physician health but also for patient care and the rest of the healthcare system [4, 5]. Burnout is associated with reduced quality of care, decreased patient satisfaction and increased medical complication and error rates, and it leads to reduced productivity, higher staff turnout and attrition, increased costs and the eventual closure of emergency departments [6, 7]. In certain countries, up to 87.9% of emergency physicians are burnt out [8–10].

Clinically, burnout can manifest with a variety of symptoms, such as irritability, anxiety, insomnia, lack of concentration and dissatisfaction. It is often recognised at a late stage, when it has been translated into loss of interest, behavioural problems, reluctance to accept new obligations or postponement of current obligations, and general distancing of oneself from the job [11, 12]. If not addressed, burnout can lead to depression and alcohol and drug abuse [13], which can culminate in suicide, which is not uncommon among emergency physicians [14]. Often, as a means of escape from this vicious cycle, emergency physicians choose to leave the profession, which worsens the situation for remaining physicians [15].

Switzerland has seen an increase in the incidence of burnout in recent decades across all fields of medicine [16]. The recent COVID crisis, as well as the post-pandemic increase in patient flow, has led to an increase in work-related exhaustion [17–20]. No study has yet quantified the situation in Swiss emergency departments, but with a sys-

tem currently in crisis, and calls for reform from both the Swiss Society of Emergency and Rescue Medicine (SGNOR/SSMUS/SSERM) and emergency physicians throughout the country, there is a need to understand how wellbeing can be improved to ensure the preservation of the safety net for the Swiss population that is emergency medicine.

The following study aimed to review the current state of wellbeing of emergency physicians in Switzerland and to identify factors influencing this wellbeing.

Methodology

Survey design

We designed a survey-type observational study. Eligible study participants were physicians currently practicing in a Swiss emergency department, regardless of training or experience. The survey, which was sent to all 1300 members of the SSERM, was translated into German, French, Italian and English and was also disseminated to non-SSERM members via a modified snowball recruitment method (as SSERM membership is not mandatory to practice emergency medicine in Switzerland). To enable this secondary recruitment method, an explanatory email containing a link to the survey was sent to the heads of all 104 hospital-based emergency departments in Switzerland and was intended to be forwarded to residents and staff currently working in their emergency departments.

The survey was divided into four parts. The first section consisted of socio-demographic questions. The second section included Likert scale questions pertaining to the Maslach Burnout Inventory – Health Services Survey (MBI-HSS) and the Copenhagen Burnout Inventory (CBI), two externally validated instruments used to measure burnout [21]. The MBI-HSS is the most widely used scale to measure burnout among human services workers; in the form of a standardised 22-point questionnaire, it aims to assess three aspects of burnout: depersonalisation, emotional exhaustion and personal accomplishment. The Copenhagen Burnout Inventory (CBI) is another commonly used assessment tool; in the form of a 19-point questionnaire, it also assesses three aspects of burnout: personal (P-CBI), work-related (WR-CBI) and client-related (CR-CBI – i.e. patient-related). In addition to the Maslach Burnout Inventory-Health Services Survey (MBI-HSS) and CBI, the second section of the survey also included Likert scale questions covering the Patient Health Questionnaire (PHQ-9) to screen for depression [22]. A third section contained closed questions on career resilience and on suicidality. Finally, a fourth section focused on the personal experience of each physician, in the form of free-text questions giving the opportunity for respondents to express individualised concerns. This final section was the subject of a secondary analysis, which will not be covered in detail in this paper.

The survey was open for a duration of 4 weeks, between March 23rd and April 23rd, 2023, with a reminder email sent out 2 weeks after the survey became available. The link to the e-survey was distributed by email, and data were collected on the Mind Garden© platform. All responses were kept anonymous, and incomplete surveys were excluded. No financial incentives were offered for responses.

The study protocol was approved by the Swiss Society of Emergency and Rescue Medicine and the Swiss Ethics Committee (BASEC 2022-01519).

Outcomes

The primary outcome measured was the incidence of burnout among emergency medicine physicians using two scores: the MBI (cut-offs: depersonalisation ≥10, emotional exhaustion ≥27, personal accomplishment <34) and CBI (cut-offs: P-CBI, WR-CBI and CR-CBI: ≥50). In addition, we investigated the incidence of depression (using the PHQ-9), suicidality and career resilience. As a secondary outcome, we examined whether age, gender, primary language at work, employment percentage (i.e. part-time), working hours, number of night shifts, post-graduate experience, specialty, relationship status and having children had any influence on the incidence of burnout.

Statistical analysis

Burnout scores for the MBI and CBI were calculated according to the appropriate questionnaire manuals [23, 24]. Standard descriptive statistics were calculated for demographics. Relationships between meeting the threshold for burnout on the MBI and CBI and potential risk factors were assessed using binary logistic regression. As an initial step for the purposeful selection of model variables, univariate analysis of each potential risk factor versus meeting the threshold for burnout on any domain on the MBI was analysed. This was repeated for the outcome of meeting the threshold for burnout on any domain of the CBI. Variables found to be associated (p-value <0.1) with burnout were included as predictors in the initial multivariable model to determine which factors were independently associated with burnout. Backwards stepwise multivariable logistic regression (Wald removal criterion of 0.1) was used to determine the predictor variables independently associated with burnout. Likelihood ratio tests were used to determine the appropriateness of including variables in the multivariable model. Nagelkerke R^2 was used to determine the variance in burnout explained by the final model. This test was chosen because it is modified to have a maximum value of 1 which, although it has limitations, provides greater ease of interpretation than other methods.

All data analyses were performed in SPSS version 29 (IBM Corp., IBM SPSS Statistics for Windows, Version 29.0. Armonk, NY: IBM Corp).

Results

Of the 685 completed surveys, 74 were missing data and thus excluded; 611 responses were therefore included in our analysis. The majority of respondents were male (321/611, 52.5%), with a median age of 40 years (IQR 32.0–49.0). A substantial proportion of respondents were married (295/611, 48.3%) with children (324/611, 53%), and the median duration of practice was 12 years post-graduation (IQR 5.0–21.0).

Socio-demographic variables

Table 1 summarises the socio-demographic variables identified by our survey.

Maslach Burnout Inventory

Of all participants, 362/611 (59.2%) met at least one of the criteria for burnout according to the Maslach Burnout Inventory (MBI) 279/611 (45.7%) met the depersonalisation cut-off of ≥10 (median score 9.0 [IQR 5.0–13.0]), 208/611 (34.0%) met the emotional exhaustion cut-off of ≥27 (median score 21.0 [IQR 13.0–30.0]) and 128/611 (20.9%) met the personal accomplishment cut-off of <34 (median [IQR] score 39.0 [9.0–48.0]). Figure 1 illustrates the percentage of participants meeting each criterion (of the 362 meeting at least one criterion) and figure 2 illustrates the percentage of participants the MBI burnout criteria, according to each dimension.

The initial model-building univariate analyses removed gender and average working hours per week from the model. The multivariable logistic regression model was run with the remaining predictors, and the final model correctly classified 68.2% of cases and explained 23.8% of the variance in burnout. The final multivariable logistic regression model showed that each additional 1 year increase

Table 1:
Socio-demographic variables.

Variable		Results
Age	Median [IQR]	40.00 [32.0–49.0]
	Range	24.0–76.0
Gender, n (%)	Male	321 (52.5%)
	Female	290 (47.5%)
	Non-binary	0 (0%)
Relationship status, n (%)	Single	121 (19.8%)
	In a stable relationship	159 (26.0%)
	Married	295 (48.3%)
	Divorced	28 (4.6%)
	Widowed	2 (0.3%)
	Other	6 (1.0%)
Partner working as a healthcare professional, n (%)	Yes	256 (41.9%)
	No	280 (45.8%)
	Not applicable	75 (12.3%)
Children, n (%)	Yes	324 (53.0%)
	No	287 (47.0%)
If children, how many	Median [IQR]	1.0 [0.0–2.0]
	Range	0.0–5.0
If children, age of youngest	Median [IQR]	7.0 [2.0–15.0]
	Range	0.0–39.0
Primary language at work, n (%)	French	218 (35.7%)
	German	318 (52.0%)
	Italian	75 (12.3%)
	Other	0 (0.0%)
Employment in %	Mean (SD)	86.63% (19.30%)
	Median [IQR]	100% [80.0–100%]
	Range	0–100%
Average hours worked per week	Mean (SD)	47.34 (12.08)
	Median [IQR]	50.00 [40.0–55.0]
	Range	0–100
Average number of night shifts per month in person (at the hospital)	Mean (SD)	3.62 (3.15)
	Median [IQR]	4.00 [1.0–5.0]
	Range	0.0–25.0
Number of years worked since graduating from medical school	Mean (SD)	13.90 (10.15)
	Median [IQR]	12.00 [5.0–21.0]
	Range	0–47
Specialty (in training or finished), n (%)	Surgery	39 (6.4%)
	Anaesthesiology	175 (28.6%)
	Internal medicine	355 (58.1%)
	Other	42 (6.9%)
Emergency Medicine SSERM / SGNOR / SSMUS, n (%)*	None	209 (34.2%)
	ISP KNM / FAI MUH	173 (28.3%)
	FA PKNM / AFC MUP	141 (23.1%)
	ISP KNM + FA PKNM / FAI MUH + AFC MUP	88 (14.4%)

SSERM = Swiss Society of Emergency and Rescue Medicine

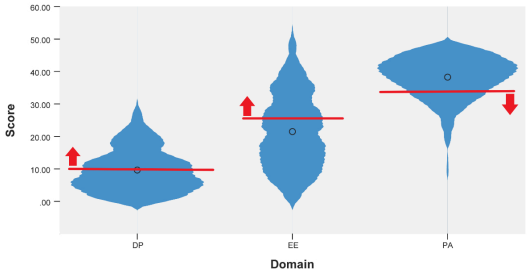
* Emergency Medicine (SSERM / SGNOR / SSMUS), according to the title system of Swiss Institute of Medical Education (SIME / SIWF / ISFM):

Interdisciplinary sub-specialty in hospital emergency medicine (ISP KNM / FAI MUH): German "interdisziplinärer Schwerpunkt klinische Notfallmedizin (SGNOR)", French "formation approfondie interdisciplinaire en médecine d'urgence hospitalière (SSMUS)"

Proficiency certificate prehospital emergency medicine (FA PKNM / AFC MUP): German "Fähigkeitsausweis Präklinische Notfallmedizin/Notarzt (SGNOR)", French "Attestation de formation complémentaire en médecine d'urgence préhospitalière/médecin d'urgence (SSMUS)"

in age was associated with a 3.5% decrease in the odds of meeting any MBI burnout threshold, and for each one-unit increase in the number of in-person night shifts per month a physician was 1.109 times more likely to meet an MBI criterion for burnout. Compared to physicians who had children, those without children were almost twice as likely to suffer from burnout (95% CI 1.09–2.76).

Figure 1: Violin plot. Total score by domain of the Maslach Burnout Inventory (0 = mean score). Red lines indicate the cut-offs for each Maslach Burnout Inventory domain, with the red arrows indicating those above each threshold. Black circles indicate median scores.



Copenhagen Burnout Inventory

Of all participants, 333/611 (54.5%) met at least one criterion for burnout according to the Copenhagen Burnout Inventory (CBI) 286/611 (46.8%) met the P-CBI cut-off of ≥50 (median score 45.80 [IQR 33.50–58.30]), 254/611 (41.6%) met the WR-CBI cut-off of ≥50 (median score 42.90 [IQR 28.60–57.10]) and 132/611 (21.6.%) met the CR-CBI cut-off of ≥50 (median score 29.20 [IQR 12.50–45.80]). Furthermore, 102/611 (16.7%) met the criteria for all three domains (Personal, Work-Related and Client-Related).

The initial model-building univariate analyses removed average working hours per week and partner working as a healthcare professional from the model. The multivariable logistic regression model was run with the remaining

Table 2:
Regression analysis. Outcome was meeting burnout criteria for any domain of the Maslach Burnout Inventory.

		Univariate			Multivariable*		
Variable		**Odds ratio**	**95% confidence interval**	**p-value**	**Odds ratio**	**95% confidence interval**	**p-value**
Age		0.93	0.92–0.95	<0.001	0.965	0.944–0.986	0.001
Gender	Male	Reference					
	Female	1.18	0.86–1.63	0.31			
Primary language at work	French	reference					
	German	0.52	0.37–0.75	<0.001			
	Italian	0.66	0.38–1.13	0.128			
Employment in %		1.01	1.00–1.02	0.02			
Average working hours per week		1.00	0.987–1.01	0.93			
Average number of in-person night shifts per month		1.18	1.11–1.26	<0.001	1.109	1.041–1.180	0.001
Number of years worked since graduating from medical school		0.93	0.92–0.95	<0.001			
Specialty (in training or finished)	Surgery	Reference			Reference		
	Anaesthesiology	0.44	0.21–0.90	0.02	0.494	0.221–1.104	0.086
	Internal medicine	1.00	0.50–2.00	0.99	0.928	0.429–2.009	0.850
	Other	1.79	0.68–4.71	0.24	1.578	0.548–4.543	0.398
Emergency Medicine SSERM / SGNOR / SSMUS**	None	Reference					
	ISP KNM / FAI MUH	0.62	0.41–0.95	0.03			
	FA PKNM / AFC MUP	0.37	0.24–0.58	<0.001			
	ISP KNM + FA PKNM / FAI MUH + AFC MUP	0.54	0.32–0.91	0.02			
Relationship status	Single	Reference			Reference		
	In a stable relationship	0.75	0.43–1.30	0.31	1.007	0.556–1.825	0.982
	Married	0.23	0.14–0.38	<0.001	0.590	0.323–1.079	0.087
	Divorced	0.33	0.14–0.78	0.01	1.086	0.410–2.875	0.868
	Widowed/other	0.86	0.16–4.52	0.86	1.866	0.323–10.773	0.485
Partner working as a healthcare professional	Yes	Reference					
	No	1.30	0.92–1.83	0.13			
	Not applicable	2.35	1.33–4.15	0.003			
Children	Yes	Reference			Reference		
	No	3.71	2.62–5.24	<0.001	1.731	1.087–2.758	0.021

SSERM: Swiss Society of Emergency and Rescue Medicine

* Variables removed at univariate stage: gender, average working hours per week; variables removed during stepwise regression: primary language at work, employment in %, number of years worked since graduating from medical school, SSERM specialty, partner working as a healthcare professional.

** Emergency Medicine (SSERM / SGNOR / SSMUS), according to the title system of Swiss Institute of Medical Education (SIME / SIWF / ISFM):

Interdisciplinary sub-specialty in hospital emergency medicine (ISP KNM / FAI MUH): German "interdisziplinärer Schwerpunkt klinische Notfallmedizin (SGNOR)", French "formation approfondie interdisciplinaire en médecine d'urgence hospitalière (SSMUS)"

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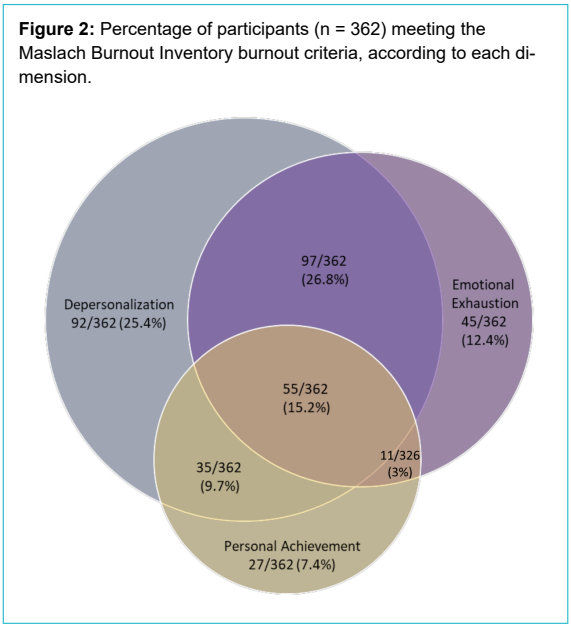

Figure 2: Percentage of participants (n = 362) meeting the Maslach Burnout Inventory burnout criteria, according to each dimension.

predictors, and the final model correctly classified 65.0% of cases and explained 13.1% of the variance in burnout. The final multivariable logistic regression model showed that each additional one-year increase in age was associated with a 3.8% decrease in the odds of meeting any CBI burnout threshold, and for each one-unit increase in the number of in-person night shifts per month a physician was 1.098 times more likely to meet a CBI criterion for burnout. Compared to physicians without a SSERM specialty, those with an interdisciplinary sub-specialty in hospital emergency medicine (ISP KNM / FAI MUH) were 1.714 times more likely to suffer from burnout (95% CI 1.050–2.797).

Patient Health Questionnaire-9

The median score for the PHQ-9 was 5.00 (IQR 0.0–25.0), with a cut-off of ≤4 indicating minimal depression (and no recommended treatment) [22, 25]. Of all participants, 331/611 (54.2%) physicians met the criteria for mild to severe depression, with 220/611 (36.0%) meeting the criteria for mild depression, 77/611 (12.6%) for moderate depression,

Table 3:
Regression analysis. Outcome was meeting burnout criteria for any domain of the Copenhagen Burnout Inventory.

		Univariate			Multivariable*		
Variable		**Odds ratio**	**95% confidence interval**	**p-value**	**Odds ratio**	**95% confidence interval**	**p-value**
Age		0.952	0.937–0.967	<0.001	0.962	0.941–0.983	<0.001
Gender	Male	Reference			Reference		
	Female	1.70	1.23–2.35	0.001	1.357	0.956–1.926	0.088
Primary language at work	French	Reference					
	German	0.647	0.456–0.918	0.015			
	Italian	0.730	0.430–1.240	0.244			
Employment in %		1.008	0.999–1.016	0.067			
Average working hours per week		1.004	0.991–1.018	0.515			
Average number of in-person night shifts per month		1.144	1.076–1.215	<0.001	1.098	1.035–1.165	0.002
Number of years worked since graduating from medical school		0.950	0.935–0.967	<0.001			
Specialty (in training or finished)	Surgery	Reference					
	Anaesthesiology	0.547	0.270–1.106	0.093			
	Internal medicine	0.996	0.508–1.950	0.990			
	Other	0.928	0.383–2.244	0.867			
Emergency Medicine SSERM / SGNOR / SSMUS**	None	Reference			Reference		
	ISP KNM / FAI MUH	0.858	0.570–1.290	0.461	1.714	1.050–2.797	0.031
	FA PKNM / AFC MUP	0.543	0.352–0.836	0.006	1.018	0.620–1.672	0.942
	ISP KNM + FA PKNM / FAI MUH + AFC MUP	0.806	0.488–1.333	0.401	1.651	0.919–2.967	0.093
Relationship status	Single	Reference					
	In a stable relationship	1.210	0.735–1.991	0.453			
	Married	0.456	0.295–0.706	<0.001			
	Divorced	0.495	0.216–1.136	0.097			
	Widowed/other	0.571	0.136–2.399	0.445			
Partner working as a healthcare professional	Yes	Reference					
	No	1.182	0.841–1.661	0.336			
	Not applicable	1.409	0.835–2.377	0.199			
Children	Yes	Reference			Reference		0.069
	No	2.28	1.644–3.161	<0.001	1.456	0.971–2.184	

SSERM: Swiss Society of Emergency and Rescue Medicine

* Variables removed at univariate stage: average working hours per week, partner working as a healthcare professional; variables removed during stepwise regression: primary language at work, employment in %, number of years worked since graduating from medical school, specialty, relationship status.

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27/611 (4.4%) for moderately severe depression and 7/611 (1.1%) for severe depression.

Consideration of a career change

A total of 432/611 (70.7%) of respondents had considered leaving emergency medicine as a result of their working conditions. Of all participants, 26/611 (4.3%) had considered this once every shift, 44/611 (7.2%) more than once a shift, 42/611 (6.9%) once a week, 43/611 (7.0%) more than once a month, 93/611 (15.2%) once a month, 60/611 (9.8%) more than once a year, 77/611 (12.6%) once a year and 47/611 (7.7%) at least once in their career. In contrast, 179/611 physicians (29.3%) had never considered leaving their profession.

Consideration of suicide

A total of 66/611 respondents (10.8%) had considered suicide at some point in their career; of these, 34/611 (5.6%) had considered this in the previous 12 months.

Discussion

While often accepted as multifactorial, with the intertwining of personal and professional issues, burnout is an occupational phenomenon resulting from chronic workplace stress [1]. Our study demonstrates the repercussions that current working conditions have on physician wellbeing in emergency departments in Switzerland.

In our survey, 59.2% of respondents met at least one criterion for burnout according to the MBI-Health Services Survey, and 54.1% met at least one burnout criterion using the CBI. In addition, more than half exhibited symptoms of mild to severe depression, and close to 20% screened positive for moderate to severe depression, nearly 4 times the incidence in the general population [26]. More worryingly, our study also illustrates the ultimate consequences of these difficult working conditions, with 10.8% of respondents reporting having considered suicide at some point during their career as an emergency physician and nearly half having contemplated this in the 12 months prior to our study. In a profession reluctant to seek help for depression [27, 28] where suicide is not uncommon [14, 29–32], attention needs to be focused on prevention by resolving issues that negatively influence wellbeing.

Our findings are comparable to those of other international studies of burnout in emergency physicians [5, 19]. While certain issues may be specific to individuals and/or individual countries, the similarities among studies suggest that there are common issues shared by all emergency physicians throughout the world and that certain characteristics associated with burnout are inherent to emergency medicine.

Night shifts, commonly accepted as part of the responsibilities of an emergency physician, are strenuous and harmful to their wellbeing [5]. In our study, 36% of respondents reported working ≥5 nights a month. Burnout was also cited as one of the top 10 factors influencing wellbeing in the free-text portion of our survey, and it increased significantly with the frequency of night shifts (MBI: OR 1.18, p <0.001; CBI: OR 1.144, p <0.001).

Working hours were reported as one of the main issues affecting emergency physician wellbeing in the free-text section of our survey. Interestingly, the statistical analysis did not show an increase in burnout when working over 50 hours a week (MBI: OR 1.00, p = 0.93; CBI: OR 1.004, p = 0.515). Similarly, working part time was also not statistically associated with increased burnout (MBI: OR 1.01, p = 0.02; CBI: OR 1.008, p = 0.067). We suggest interpreting these results with caution, as the denominator used was that of a 50-hour week with 10-hour days, which is the standard for all physicians, regardless of medical specialty, in Switzerland [33]. As suggested by other studies [34–36], the 50-hour week is in itself not adapted to emergency medicine, as it does not take into account the strenuous nature and constant (increasing) workflow of emergency departments. As such, it is our opinion that the 50-hour week is in itself a risk factor for burnout, and this has been suggested in a recent review of Danish studies [37]. A comparative analysis between a 50-hour work week and a reduced work schedule for emergency medicine would thus be pertinent; this might be an area for reform.

The number of years of practice and age also seemed to have an effect on burnout. In an inverse relationship, each additional year of practice decreased the risk of burnout (MBI: OR 0.93, p <0.001; CBI: OR 0.950, p <0.001), similarly to age (MBI: OR 0.93, p <0.001; CBI: OR 0.952, p <0.001). This is seemingly counterintuitive, as one would expect that the more time spent in a strenuous work environment, the higher the potential for burnout. However, this interpretation does not consider that, with increasing experience, emergency medicine physicians generally see their share of night shifts decrease in favour of more traditional daytime hours, and clinical responsibilities diminish in favour of diverse non-clinical areas, such as training and emergency department management. Senior physicians are therefore less likely to be regularly exposed to difficult working conditions, and thus less likely to burn out, which could explain the statistical results.

Specific to Switzerland, and our study, language at the place of work was shown to have an influence on burnout, though this was not statistically significant. French-speaking respondents reported more burnout than physicians working in German (MBI: OR 0.647, p = 0.015; CBI: OR 0.52, p <0.001) or Italian (MBI: OR 0.730, p = 0.0244; CBI: OR 0.66, p = 0.128) areas, in a manner similar to that seen in previous studies in Switzerland [16, 38]. Further analysis is needed, as each region, and often each canton, differs in the way emergency departments are organised; this includes (but is not limited to) the type of clinical activity and level of clinical supervision. A follow-up study to this survey aims to incorporate these specificities as variables to better understand their influence on wellbeing.

Our study has therefore demonstrated that current working conditions negatively influence the wellbeing of Swiss emergency physicians. Reform is therefore vital, not only for the health of emergency physicians, but also for the continuity of acute care, which is at risk due to high staff attrition rates, as evidenced by the 40.6% of respondents who reported considering a change in their career at least once a month. In order to reform these working conditions, other parameters that are not assessable using Likert scale questions need to be reviewed. As mentioned previously,

our survey included a free-text section, which offered an opportunity for participants to report the challenges they faced. As the subject of a separate analysis, we believe this will help to guide reform and to explain why no other medical specialty sees such high rates of burnout and staff turnover.

Notably, certain factors extrinsic to working conditions had an important influence on burnout. Similar to other studies [10, 39–43], female and non-binary physicians reported higher levels of burnout than their male counterparts (MBI: OR 1.70, p = 0.001; CBI: OR 1.18, p = 0.31) . As with other studies, this seems to be an independent factor [19, 44–46]. Interestingly, having no children was also a contributing factor (MBI: 2.28, p <0.001; CBI: 3.71, p <0.001), as was being single, suggesting the importance of personal resources.

Limitations

While we believe the sample was representative of the population, the modified snowball approach used to distribute the survey introduced bias. Given the unknown total sample size and the infeasibility of estimating the total number of emergency department physicians in Switzerland, the response rate is difficult to estimate. In addition, the survivorship bias mentioned during the discussion limited the study to physicians who are currently practicing. The absence of mandatory membership to the Swiss Society of Emergency and Rescue Medicine makes surveying those who have already left difficult and allows the possibility of recollection bias. All of these issues are due to the absence of a recognised specialist title and dedicated training pathway.

Conclusion

With over half of survey respondents meeting at least one criterion for burnout, 20% screening positive for moderate to severe depression (nearly 4 times the incidence in the general population) and 10.8% having considered suicide at some point during their career, this is the first national study to demonstrate that current working conditions are harmful to the wellbeing of Swiss emergency physicians. In a system in which continuity is regularly questioned (40.6% of survey respondents reported considering a change in their career at least once a month), reform is urgently needed. This study aimed to provide a situational overview and offers insight into what factors affect wellbeing in emergency medicine. Furthermore, it confirmed certain risk factors for burnout previously identified in other international studies, such as night shifts, working hours, seniority, gender and individual resources, and introduced new factors, such as language of practice. In order to evaluate trends and better understand some of these aforementioned factors, regular follow-up studies are required.

Potential competing interests

All authors have completed and submitted the International Committee of Medical Journal Editors form for disclosure of potential conflicts of interest. No potential conflict of interest related to the content of this manuscript was disclosed.

References

1. WHO. Burn-out an "occupational phenomenon": International Classification of Diseases [Internet]. [cited 2023 May 9]. Available from: https://www.who.int/news/item/28-05-2019-burn-out-an-occupational-phenomenon-international-classification-of-diseases
2. Maslach C. Burnout, Psychology of. In: Wright JD, editor. International Encyclopedia of the Social & Behavioral Sciences. 2nd ed. Oxford: Elsevier; 2015. pp. 929–32. [Internet][[cited 2023 May 9]], Available from https://www.sciencedirect.com/science/article/pii/B9780080970868260091 http://dx.doi.org/10.1016/B978-0-08-097086-8.26009-1.
3. Von Känel R. Was der Klinikarzt vom Burnout-Syndrom wissen sollte – Von der gezielten Fragestellung bis zur Übermittlung der Verdachtsdiagnose. Klin. 2016 Feb;45(01):26–32. http://dx.doi.org/10.1055/s-0041-111192. 0341-2350
4. Hodkinson A, Zhou A, Johnson J, Geraghty K, Riley R, Zhou A, et al. Associations of physician burnout with career engagement and quality of patient care: systematic review and meta-analysis. BMJ. 2022 Sep;378:e070442. http://dx.doi.org/10.1136/bmj-2022-070442. PubMed. 1756-1833
5. Zhang Q, Mu MC, He Y, Cai ZL, Li ZC. Burnout in emergency medicine physicians: A meta-analysis and systematic review. Medicine (Baltimore). 2020 Aug;99(32):e21462. http://dx.doi.org/10.1097/MD.0000000000021462. PubMed. 1536-5964
6. Wallace JE, Lemaire JB, Ghali WA. Physician wellness: a missing quality indicator. Lancet. 2009 Nov;374(9702):1714–21. http://dx.doi.org/10.1016/S0140-6736(09)61424-0. PubMed. 1474-547X
7. Tawfik DS, Scheid A, Profit J, Shanafelt T, Trockel M, Adair KC, et al. Evidence Relating Health Care Provider Burnout and Quality of Care: A Systematic Review and Meta-analysis. Ann Intern Med. 2019 Oct;171(8):555–67. http://dx.doi.org/10.7326/M19-1152. PubMed. 1539-3704
8. Wright T, Mughal F, Babatunde OO, Dikomitis L, Mallen CD, Helliwell T. Burnout among primary health-care professionals in low- and middle-income countries: systematic review and meta-analysis. Bull World Health Organ. 2022 Jun;100(6):385–401A. http://dx.doi.org/10.2471/BLT.22.288300. PubMed. 1564-0604
9. General Medical Council. National training surveys reports, 2022 summary reports. Internet: https://www.gmc-uk.org/about/what-we-do-and-why/data-and-research/national-training-surveys-reports
10. Shanafelt TD, West CP, Sinsky C, Trockel M, Tutty M, Wang H, et al. Changes in Burnout and Satisfaction With Work-Life Integration in Physicians and the General US Working Population Between 2011 and 2020. Mayo Clin Proc. 2022 Mar;97(3):491–506. http://dx.doi.org/10.1016/j.mayocp.2021.11.021. PubMed. 1942-5546
11. Maslach C, Schaufeli WB, Leiter MP. Job burnout. Annu Rev Psychol. 2001;52(1):397–422. http://dx.doi.org/10.1146/annurev.psych.52.1.397. PubMed. 0066-4308
12. Bauer J, Stamm A, Virnich K, Wissing K, Müller U, Wirsching M, et al. Correlation between burnout syndrome and psychological and psychosomatic symptoms among teachers. Int Arch Occup Environ Health. 2006 Mar;79(3):199–204. http://dx.doi.org/10.1007/s00420-005-0050-y. PubMed. 0340-0131
13. Salyers MP, Bonfils KA, Luther L, Firmin RL, White DA, Adams EL, et al. The Relationship Between Professional Burnout and Quality and Safety in Healthcare: A Meta-Analysis. J Gen Intern Med. 2017 Apr;32(4):475–82. http://dx.doi.org/10.1007/s11606-016-3886-9. PubMed. 1525-1497
14. Stehman CR, Testo Z, Gershaw RS, Kellogg AR. Burnout, Drop Out, Suicide: Physician Loss in Emergency Medicine, Part I. West J Emerg Med. 2019 May;20(3):485–94. http://dx.doi.org/10.5811/westjem.2019.4.40970. PubMed. 1936-9018
15. Landon BE, Reschovsky JD, Pham HH, Blumenthal D. Leaving medicine: the consequences of physician dissatisfaction. Med Care. 2006 Mar;44(3):234–42. http://dx.doi.org/10.1097/01.mlr.0000199848.17133.9b. PubMed. 0025-7079
16. Arigoni F, Bovier PA, Sappino AP. Trend of burnout among Swiss doctors. Swiss Med Wkly. 2010 Aug;140:w13070. PubMed. 1424-3997
17. Zumbrunn B, Stalder O, Limacher A, Ballmer PE, Bassetti S, Battegay E, et al. The well-being of Swiss general internal medicine residents. Swiss Med Wkly [Internet]. 2020 Jun 18 [cited 2022 Nov 21];(23). Available from: https://smw.ch/article/doi/smw.2020.20255 http://dx.doi.org/10.4414/smw.2020.20255.
18. Al-Gobari M, Shoman Y, Blanc S, Canu IG. Point prevalence of burnout in Switzerland: a systematic review and meta-analysis. Swiss Med Wkly [Internet]. 2022 Sep 28 [cited 2022 Nov 21];(37). Available from: https://smw.ch/article/doi/smw.2022.w30229 http://dx.doi.org/10.4414/SMW.2022.w30229.
19. Petrino R, Riesgo LG, Yilmaz B. Burnout in emergency medicine professionals after 2 years of the COVID-19 pandemic: a threat to the healthcare system? Eur J Emerg Med. 2022 Aug;29(4):279–84. http://dx.doi.org/10.1097/MEJ.0000000000000952. PubMed. 1473-5695

20. Douillet D, Caillaud A, Riou J, Miroux P, Thibaud E, Noizet M, et al. Assessment of physicians' resilience level during the COVID-19 pandemic. Transl Psychiatry. 2021 May;11(1):283. http://dx.doi.org/10.1038/s41398-021-01395-7. PubMed. 2158-3188
21. Dyrbye LN, Meyers D, Ripp J, Dalal N, Bird SB, Sen S. A Pragmatic Approach for Organizations to Measure Health Care Professional Well-Being. NAM Perspect [Internet]. 2018 Oct 1 [cited 2023 Oct 31]; Available from: https://nam.edu/a-pragmatic-approach-for-organizations-to-measure-health-care-professional-well-being/ http://dx.doi.org/10.31478/201810b.
22. Levis B, Benedetti A, Thombs BD; DEPRESsion Screening Data (DEPRESSD) Collaboration. Accuracy of Patient Health Questionnaire-9 (PHQ-9) for screening to detect major depression: individual participant data meta-analysis. BMJ. 2019 Apr;365:l1476. http://dx.doi.org/10.1136/bmj.l1476. PubMed. 1756-1833
23. Maslach C, Jackson SE, Leiter MP, Schaufeli WB, Schwab RL. Maslach Burnout Inventory Manual [Internet]. 4th ed. Menlo Park, CA: Mind Garden; [cited 2023 Nov 12]. Available from: https://www.mindgarden.com/maslach-burnout-inventory-mbi/686-mbi-manual-print.html
24. Det Nationale Forskningscenter for Arbejdsmiljø. Copenhagen Burnout Inventory - CBI [Internet]. [cited 2023 Nov 12]. Available from: https://nfa.dk/da/Vaerktoejer/Sporgeskemaer/Sporgeskema-til-maaling-af-udbraendthed/Copenhagen-Burnout-Inventory-CBI
25. Kroenke K, Spitzer RL, Williams JB. The PHQ-9: validity of a brief depression severity measure. J Gen Intern Med. 2001 Sep;16(9):606–13. http://dx.doi.org/10.1046/j.1525-1497.2001.016009606.x. PubMed. 0884-8734
26. Kocalevent RD, Hinz A, Brähler E. Standardization of the depression screener patient health questionnaire (PHQ-9) in the general population. Gen Hosp Psychiatry. 2013;35(5):551–5. http://dx.doi.org/10.1016/j.genhosppsych.2013.04.006. PubMed. 1873-7714
27. The Lancet. Physician burnout: a global crisis. Lancet. 2019 Jul;394(10193):93. http://dx.doi.org/10.1016/S0140-6736(19)31573-9. PubMed. 1474-547X
28. Lu DW, Dresden S, McCloskey C, Branzetti J, Gisondi MA. Impact of Burnout on Self-Reported Patient Care Among Emergency Physicians. West J Emerg Med. 2015 Dec;16(7):996–1001. http://dx.doi.org/10.5811/westjem.2015.9.27945. PubMed. 1936-9018
29. Center C, Davis M, Detre T, Ford DE, Hansbrough W, Hendin H, et al. Confronting depression and suicide in physicians: a consensus statement. JAMA. 2003 Jun;289(23):3161–6. http://dx.doi.org/10.1001/jama.289.23.3161. PubMed. 1538-3598
30. Dorevitch S, Forst L. The occupational hazards of emergency physicians. Am J Emerg Med. 2000 May;18(3):300–11. http://dx.doi.org/10.1016/S0735-6757(00)90125-6. PubMed. 0735-6757
31. Goolsby C, Lala V, Gebner R, Dacuyan-Faucher N, Charlton N, Schuler K. Emergency physician risk of occupational mortality: A scoping review. J Am Coll Emerg Physicians Open. 2021 Oct;2(5):e12554. http://dx.doi.org/10.1002/emp2.12554. PubMed. 2688-1152
32. Lee YK, Lee CC, Chen CC, Wong CH, Su YC. High risk of 'failure' among emergency physicians compared with other specialists: a nationwide cohort study. Emerg Med J. 2013 Aug;30(8):620–2. http://dx.doi.org/10.1136/emermed-2012-201440. PubMed. 1472-0213
33. SECO S d'Etat à l'économie. Aide-mémoire sur l'application de la loi sur le travail dans les hôpitaux et cliniques [Internet]. [cited 2023 Nov 12]. Available from: https://www.seco.admin.ch/seco/fr/home/Publikationen_Dienstleistungen/Publikationen_und_Formulare/Arbeit/Arbeitsbedingungen/Merkblatter_und_Checklisten/merkblatt-fuer-die-anwendung-des-arbeitsgesetzes-in-krankenansta.html
34. Stowell JR, Vohra TT, Luber SD. Emergency medicine resident clinical hours: a national survey. J Emerg Med. 2015 Apr;48(4):474–80.e1. http://dx.doi.org/10.1016/j.jemermed.2014.11.005. PubMed. 0736-4679
35. Rischall ML, Chung AS, Tabatabai R, Doty C, Hart D. Emergency Medicine Resident Shift Work Preferences: A Comparison of Resident Scheduling Preferences and Recommended Schedule Design for Shift Workers. AEM Educ Train. 2018 Jun;2(3):229–35. http://dx.doi.org/10.1002/aet2.10104. PubMed. 2472-5390
36. Jeanmonod R, Brook C, Winther M, Pathak S, Boyd M. Resident productivity as a function of emergency department volume, shift time of day, and cumulative time in the emergency department. Am J Emerg Med. 2009 Mar;27(3):313–9. http://dx.doi.org/10.1016/j.ajem.2008.03.002. PubMed. 1532-8171
37. Zaugg J. Les médecins danois ont trouvé l'équilibre. Bull Med Suisses 2023. Available from: https://saez.swisshealthweb.ch/fr/article/doi/bms.2023.22195
38. Goehring C, Bouvier Gallacchi M, Künzi B, Bovier P. Psychosocial and professional characteristics of burnout in Swiss primary care practitioners: a cross-sectional survey. Swiss Med Wkly. 2005 Feb;135(7-8):101–8. http://dx.doi.org/10.4414/smw.2005.10841. PubMed. 1424-7860
39. Jagsi R, Griffith KA, Jones R, Perumalswami CR, Ubel P, Stewart A. Sexual Harassment and Discrimination Experiences of Academic Medical Faculty. JAMA. 2016 May;315(19):2120–1. http://dx.doi.org/10.1001/jama.2016.2188. PubMed. 1538-3598
40. Linzer M, Harwood E. Gendered Expectations: Do They Contribute to High Burnout Among Female Physicians? J Gen Intern Med. 2018 Jun;33(6):963–5. http://dx.doi.org/10.1007/s11606-018-4330-0. PubMed. 1525-1497
41. Hu YY, Ellis RJ, Hewitt DB, Yang AD, Cheung EO, Moskowitz JT, et al. Discrimination, Abuse, Harassment, and Burnout in Surgical Residency Training. N Engl J Med. 2019 Oct;381(18):1741–52. http://dx.doi.org/10.1056/NEJMsa1903759. PubMed. 1533-4406
42. Templeton K, Bernstein CA, Sukhera J, Nora LM, Newman C, Burstin H, et al. Gender-Based Differences in Burnout: Issues Faced by Women Physicians. NAM Perspect [Internet]. 2019 May 30 [cited 2023 Nov 21]; Available from: https://nam.edu/gender-based-differences-in-burnout-issues-faced-by-women-physicians/
43. Krisen: Vor allem Ärztinnen mit Kindern suchen Hilfe [Internet]. [cited 2023 Nov 21]. Available from: https://www.medinside.ch/post/krisen-vor-allem-aerztinnen-mit-kindern-suchen-hilfe
44. Levine H, Baranchuk N, Li T, Garra G, Nagarajan MS, Garg N. An emergency medicine physician well-being study focusing on gender differences and years of practice during the COVID-19 pandemic. Am J Emerg Med. 2022 May;55:84–8. http://dx.doi.org/10.1016/j.ajem.2022.02.055. PubMed. 1532-8171
45. Lin YY, Pan YA, Hsieh YL, Hsieh MH, Chuang YS, Hsu HY, et al. COVID-19 Pandemic Is Associated with an Adverse Impact on Burnout and Mood Disorder in Healthcare Professionals. Int J Environ Res Public Health. 2021 Apr;18(7):3654. http://dx.doi.org/10.3390/ijerph18073654. PubMed. 1660-4601
46. Corlade-Andrei M, Măirean C, Nedelea P, Grigoraşi G, Cimpoeşu D. Burnout Syndrome among Staff at an Emergency Department during the COVID-19 Pandemic. Healthcare (Basel). 2022 Jan;10(2):258. http://dx.doi.org/10.3390/healthcare10020258. PubMed. 2227-9032