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Burnout among house officers in Myanmar: A cross-sectional study

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ABSTRACT

Background: Burnout can result in a serious negative impact on a doctor's life, the quality of patient care, and the healthcare organization. This study aims to determine the prevalence of burnout and factors affecting burnout among the house officers in Myanmar.

Materials and methods: An exploratory cross-sectional quantitative survey study was conducted using a self-administered, web-based survey. House officers working in any of the government hospitals in Myanmar were invited to participate in the study. The survey link was distributed online via Facebook. To measure burnout, we utilised a non-proprietary single-item measure, validated to serve as a reliable substitute for the Maslach Burnout Inventory Emotional Exhaustion (MBI:EE). To measure global life satisfaction, the validated Satisfaction with Life Scale (SWLS) was used. The questions for the scales regarding the psychosocial environment were extracted from the long version of the validated Copenhagen Psychosocial Questionnaire (COPSOQ II). The scales selected were "possibilities for the development", "meaning of work", "commitment to workplace", "recognition", "social support from colleagues" and "social support from supervisors". Multiple logistic regression method was applied to determine the factors associated with burnout.

Results: Regarding the prevalence of burnout, out of 159 participants, 42.8% (n = 68) of the participants had no symptoms of burnout. 57.2% (n = 91) had one or more symptoms of burnout. Multivariate analysis showed that the only significant factor associated with burnout was "recognition" (OR 0.96, 95% CI: 0.94–0.97, $P < 0.001$).

Conclusion: From this study, we have determined the relatively high burnout prevalence and that recognition is the only preventive factor; increase in recognition will decrease the odds of burnout. Hence, urgent interventions are recommended to prevent undesirable effects on both health professionals and patients. Recognition for work done should always be in the heart of the health authorities and medical community in Myanmar.

1. Introduction

Burnout is a psychological syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment [1]. It can cause a deleterious impact on doctors causing intent to quit medical practice [2], intention to leave the current position [2], and poor health [3]. It can also negatively affect the quality of patient care [3,4], and decrease patient safety [4].

In Myanmar, there are five civilian medical schools – University of Medicine (1) and (2), Yangon; University of Medicine, Mandalay; University of Medicine, Magway and University of Medicine, Taunggyi, and one military medical school – Defence Services Medical Academy, and no private medical schools. University of Medicine, Taunggyi is a new medical school, and currently, none of the students has reached house officer training years. In our study, 'house officers' refer to civilian house officers since military house officers are under different employment system.

Before graduation, medical students have to complete compulsory one-year house officer training in government hospitals [5]. They have to rotate through internal medicine, surgery, obstetrics & gynaecology wards for three months, a paediatric ward for two and a half months, and community medicine training centre for two weeks [5]. The training is considered to be equivalent to Foundation Year One in the United Kingdom [6], and the trainees are considered as the first-line service providers in the government hospitals [7]. However, a limited clarity regarding roles and responsibilities [8] raises frustrations among them. Moreover, the stipend per month granted by the medical school to each house officer is only 100,000 MMK (approximately 76 US$) [9], and hence, 912 US$ per annum. According to the World Bank, the Gross National Income (GNI) per capita of Myanmar, reflecting the average income of the citizens, is 1190 US$ [10]. After satisfactory completion of the training, Bachelor in Medicine and Bachelor in Surgery (MBBS)

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degree is awarded [5], but there is no immediate job offer; a clear recruitment policy for appointment in government hospitals is lacking [8].

In this situation, burnout is likely to be prevalent, although there is no evidence in this setting. Hence, this study aims to determine the burnout prevalence and factors associated with burnout.

2. Methods

An exploratory cross-sectional quantitative survey study was conducted using a self-administered, web-based survey. House officers working in any of the hospitals in Myanmar were invited to participate in the study. The survey was hosted on "Google Forms" as an open, voluntary survey. We distributed the survey link via social media, Facebook by posting on the "University of Medicine (1), Yangon" Student Union official page and two Facebook Groups consisting of current Myanmar house officers as members. An incentive of 10,000 MMK was randomly provided to two respondents. The study was conducted independently of the supervisors in the hospitals, to minimize the influence of the investigators on the responses.

The study was conducted from 15th June 2017 to 6th July 2017, the last two weeks of the house officer training plus one week after finishing it. Further continuation of this study beyond this time period could result in recall bias.

The English language was used to conduct the study. The main reason was to preserve the accuracy and validity of the original questionnaires. Another reason was that the house officers were taught in English as a medium of instruction in our medical schools.

To prevent multiple entries from the same individual, we could not use cookies, IP check or log file analysis, due to software limitations by Google Forms. Instead, we decided to include in the informed consent, the statement that each person is allowed to participate in the survey only once.

2.1. Survey measures

2.1.1. Sociodemographic and work characteristics

Regarding the sociodemographic characteristics, three items; age in years, gender, and marital status, were asked. Regarding the work characteristics, five items were asked; current rotation, plain off days ($\geq$24 h)/month, working hours/week, and the hospital in which the respondent was working last week.

2.1.2. Burnout

To measure burnout, we utilised a non-proprietary single-item measure, validated to serve as a reliable substitute for the Maslach Burnout Inventory Emotional Exhaustion (MBI:EE) in the healthcare setting [11]. The main reasons were to make the questionnaire easy to respond, to save time for busy house officers and to increase the response rate [12,13]. It has been used in several previous studies on doctors including national surveys [14–16]. The scoring system involves an ordinal scale and a calculation cut-off point for burnout (Table 3). Accordingly, the operational definition of burnout will be focused on emotional exhaustion in this study.

2.1.3. Global life satisfaction

To measure global life satisfaction, the original validated Satisfaction with Life Scale (SWLS) [17,18] was used. It utilizes a five-item scale where the respondents have to answer with a seven-point Likert scale ranging from 7 strongly agree to 1 strongly disagree. The scores from each item were summed up to calculate the total score reflecting the global life satisfaction. The scale reliability (Cronbach's alpha) was 0.74 according to a previous study [19].

2.1.4. Psychosocial environment

The scales for this questionnaire were extracted from the long version of validated Copenhagen Psychosocial Questionnaire (COPSOQ II) [20]. The scales selected were "possibilities for development", "meaning of work", "commitment to workplace", "recognition", "social support from colleagues" and "social support from supervisors". The scale reliability (Cronbach's alphas) were 0.77, 0.74, 0.76, 0.83, 0.70 and 0.79 respectively [20]. All the scales were scored 0–100 points.

Questionnaires for the scales; "possibilities for development" (four-item), "meaning of work" (three-item) and "recognition" (three-item), were directly extracted from the original scales. No modifications were made. However, regarding the scale "commitment to workplace" (originally four-item), the question "How often do you consider looking for work elsewhere?" had been omitted as, at the time of conducting the study, the house officers from Myanmar did not have the option to change the hospital as they wish, resulting in three items.

For the scales "social support from colleagues" (three-item) and "social support from supervisors" (three-item), no modifications were made to the original questionnaire. Further details regarding COPSOQ II are available on the website of National Research Centre for the Working Environment, Denmark [21].

2.2. Statistics

The responses from the survey were extracted from Google Forms and opened in Microsoft Excel (Microsoft Corporation, Redmond, WA) to calculate the scores. The data were imported and analysed using SPSS Version 22.0 (IBM Corporation, Armonk, NY). Simple logistic regression was applied to determine the potential variables. Variables having $p \leq 0.25$ were included to proceed for further multivariable analysis. Variables for multivariable analysis were decided not only based on statistical significance but also on principles of parsimony and biological plausibility. Multiple logistic regression method was applied to determine the factors associated with burnout. Final results were presented with crude and adjusted odds ratio with 95% CI, Wald statistic and corresponding p-value. $p < 0.05$ was taken as significant.

2.3. Ethics

Before completing the survey, the respondents were required to agree on an informed consent explaining study objectives and confidentiality of the information. Responses were anonymous, i.e. the respondent had to enter neither the name nor email address, to answer the survey. This study was part-audit, part-quality improvement, and not an interventional study, and hence ethical approval was not needed. Moreover, it implies the guidelines for Ethical Decision-Making and Internet Research [22].

3. Results

3.1. Response rate

There were 159 respondents at the end of the survey which is estimated to be 10% of all house officers in Myanmar (approximately 1600). As this study has used a web-based survey, the response rate was described according to the suggestion by Eysenbach [23] Unique site visitor, View rate (Ratio unique site visitors/unique survey visitors) and Participation rate (Ratio unique survey page visitors/agreed to participate) could not be obtained due to software limitations. However, completion rate (Ratio agreed to participate/finished survey) could be obtained and was found to be 100%.

3.2. Descriptive statistics

Sociodemographic, work characteristics, global life satisfaction, and scores for psychosocial environment of the respondents are described in Table 1. Hospitals were recategorized according to geographical regions since the respondents were working at a wide range of hospitals. The

Table 1
Sociodemographic and work characteristics of the respondents (n = 159).

Variables	Frequency (%)	Mean (SD)
Age		23.13 (0.93)
Sex		
Female	101 (63.5)	
Male	58 (36.5)	
Marital status		
Single, never married	157 (98.7)	
Married	2 (1.3)	
Widowed	0 (0.0)	
Divorced or separated	0 (0.0)	
Rotation in which the respondent is in		
Internal Medicine	38 (23.9)	
Surgery	39 (24.5)	
Obstetrics and Gynaecology	35 (22.0)	
Paediatrics	47 (29.6)	
Working hours/week		63.97 (17.97)
Plain off Days (≥ 24 h)/month		3.03 (2.33)
Region		
Yangon	145 (91.2)	
Mandalay	6 (3.8)	
Others	8 (5.0)	

Table 2
The hospitals in which the respondents were working (n = 159).

Hospitals	Frequency (%)
Yangon General Hospital	42 (26.4)
Central Women's Hospital, Yangon	25 (15.7)
Yangon Children's Hospital	24 (15.1)
East Yangon General Hospital	14 (8.8)
West Yangon General Hospital	11 (6.9)
Thingyangyun Sanpya General Hospital	8 (5.0)
Yangon Workers' Hospital	7 (4.4)
North Okkalar General Hospital	6 (3.8)
Yankin Children Hospital	5 (3.1)
New Yangon General Hospital	2 (1.3)
Mandalay General Hospital	2 (1.3)
Central Women's Hospital, Mandalay	2 (1.3)
550-Bed Mandalay Children's Hospital	2 (1.3)
Pakokku General Hospital	2 (1.3)
Insein General Hospital	1 (0.6)
Hpaan General Hospital	1 (0.6)
Myeik Public Hospital	1 (0.6)
Ottarathiri Children's Hospital, Nay Pyi Taw	1 (0.6)
Lashio General Hospital	1 (0.6)
Mawlamyine Women and Children's Hospital	1 (0.6)
Taunggyi Women and Children's Hospital	1 (0.6)

hospitals in which the respondents were working are listed in Table 2.

Approximately 42.8% (n = 68) of participants had no symptoms of burnout while the remaining participants (57.2%, n = 91) had one or more symptoms of burnout (Tables 3 and 4). Global life satisfaction and scores for the psychosocial environment were also obtained (Table 4). The scale reliability (Cronbach's alpha) of the Satisfaction with Life scale, "possibilities for development", "meaning of work", "commitment to workplace", "recognition", "social support from colleagues" and "social support from supervisors" were 0.86, 0.79, 0.78, 0.71, 0.82, 0.73, and 0.87 respectively.

3.3. Univariate analysis

Table 5 provides output of the univariate analysis, which reveals that all variables except the psychosocial environment were statistically not significant.

3.4. Multivariate analysis

Multiple logistic regression was performed to identify independent predictors of burnout. Multivariate analysis showed that the only significant predictor was "recognition" (OR 0.96, 95% CI: 0.94–0.97, $p < 0.001$) (Table 6). OR < 1 indicates that it is a preventive factor against burnout; increase in "recognition" will decrease the odds of burnout.

Table 3
Statements in single-item burnout[a] scale and the responses (n = 159).

Score	Statement	Frequency (%)
1	"I enjoy my work. I have no symptoms of burnout."	9 (5.7)
2	"Occasionally I am under stress, and I don't always have as much energy as I once did, but I don't feel burned out."	59 (37.1)
3	"I am definitely burning out and have one or more symptoms of burnout, such as physical and emotional exhaustion."	48 (30.2)
4	"The symptoms of burnout that I'm experiencing won't go away. I think about frustration at work a lot."	24 (15.1)
5	"I feel completely burned out and often wonder if I can go on. I am at the point where I may need some changes or may need to seek some sort of help."	19 (11.9)

[a] The sum of the score was calculated and further dichotomized to burnout out or not by using the following classification; ≤2 was categorized as having no symptoms of burnout and ≥3 was categorized as having one or more symptoms.

Table 4
Burnout, global life satisfaction, and scores for psychosocial environment of the respondents (n = 159).

Variables	Frequency (%)	Mean (SD)
Burnout		
No symptoms of burnout	91 (57.2)	
One or more symptoms of burnout	68 (42.8)	
Global life satisfaction		
Extremely dissatisfied	14 (8.8)	
Dissatisfied	30 (18.9)	
Slightly dissatisfied	35 (22.0)	
Neutral	9 (5.7)	
Slightly satisfied	39 (24.5)	
Satisfied	30 (18.9)	
Extremely satisfied	2 (1.3)	
Scales for psychosocial environment		
"possibilities for development"[a]		37.54 (20.03)
"meaning of work"[a]		38.10 (23.45)
"commitment to workplace"[a]		32.65 (22.56)
"recognition"[a]		33.17 (22.39)
"social support from colleagues"[b]		62.05 (19.32)
"social support from supervisors"[b]		40.46 (23.99)

[a] The scales have five Likert-like response options ranging from "To a very large extent", "To a large extent", "Somewhat", "To a small extent", and "To a very small extent". The five response options were scored 100, 75, 50, 25, 0 respectively. An average of the total score was calculated to obtain the final score on each individual scale.

[b] The scales have five Likert-like response options ranging from "Always", "Often", "Sometimes", and "Seldom, Never/hardly ever". The five response options were scored 100, 75, 50, 25, 0 respectively. An average of the total score was calculated to obtain the final score on each individual scale.

4. Discussion

In our study, 57.2% of the participating house officers were suffering from burnout. Firstly, the comparison will be made with the studies using the same burnout measure. In a Canadian study, 21% of the Psychiatry Residents reported burnout symptoms [14]. Among primary care staffs in the United States of America, the prevalence of burnout was 38.5% [11]. Moreover, 14% of the Australian general practice registrars were burned out [16]. Secondly, since Myanmar is a lower-middle-country (LMIC) according to the World Bank [24], we

Table 5
Univariate analysis of burnout in relation to socio-demographic characteristics, work characteristics, global life satisfaction and scales related to the psycho-social environment (n = 159).

Variables	Crude OR	95% CI		Wald Statistics	(df)	*p*-value[a]
		Lower	Upper			
Age	1.31	0.86	2.00	1.58	(1)	0.209
Gender						
Female	1.00					
Male	0.79	0.41	1.51	0.53	(1)	0.465
Marital status						
Single, never married	1.00					
Married	0.74	0.05	12.12	0.04	(1)	0.836
Region						
Yangon	1.00					
Mandalay	0.35	0.06	1.99	1.39	(1)	0.238
Others	0.71	0.17	2.93	0.23	(1)	0.706
Rotation						
Medicine	1.00					
Surgery	1.17	0.46	2.93	0.11	(1)	0.746
Obstetrics and Gynaecology	0.44	0.17	1.11	3.03	(1)	0.082
Paediatrics	1.05	0.44	2.53	0.01	(1)	0.912
Plain off (≥24 h)/month	.91	0.80	1.05	1.73	(1)	0.188
Working hours/week	1.01	0.99	1.03	0.84	(1)	0.359
Global life satisfaction	0.96	0.92	1.01	2.89	(1)	0.089
"possibilities for development"	0.98	0.96	0.99	8.25	(1)	0.004
"meaning of work"	0.97	0.96	0.99	12.17	(1)	< 0.001
"commitment to workplace"	0.97	0.95	0.98	18.93	(1)	< 0.001
"recognition"	0.96	0.94	0.97	25.27	(1)	< 0.001
"social support from colleagues"	0.98	0.96	1.00	4.98	(1)	0.026
"social support from supervisors"	0.98	0.97	1.00	5.55	(1)	0.019

[a] Simple logistic regression.

will compare with data from nearby LMICs having similar health and economic systems. Among the Indian medical practitioners, 45.02% scored high on the emotional exhaustion scale [25]. In Pakistan, 50.4% of the surgical residents had high levels of emotional exhaustion [26]. Finally, a systematic review of medical students estimated that at least half of the US medical students were burned out [27]. Therefore, we can conclude that the prevalence of burnout among Myanmar house officers is relatively high even among the LMICs.

It is very interesting that only a single variable "recognition" has a significant association. Previous studies among French general practitioners in training [28], physicians and nurses working in oncology [29], and acute care nurses [30] also revealed similar findings. A recent survey among house officers from Myanmar also revealed some cases of stress in the workplace due to a poor relationship with the senior doctors [9], which might also be due to lack of recognition. Indeed, house officers are the most junior doctors in the hospital, and they tend to receive less attention and recognition. This practice leads to increased burnout among the house officers leading to many undesired effects.

4.1. Recommendations

Improved recognition of the house officers is recommended to reduce burnout. Similarly, Sigsbee and Bernat [31] recommended recognition as a preventive intervention against burnout. Improved recognition has additional benefits since high recognition was found to be associated with better patient care [32], and higher job satisfaction [33,34]. Hence, Luthans [35] described recognition as "A powerful, but often overlooked, leadership tool to improve employee performance".

Myanmar is suffering from a "brain-drain" of doctors because of migration to foreign countries [36,37]. This is undesirable since the number of health workers in Myanmar is far lower than the WHO minimum recommended threshold [8]. Studies in Myanmar, Japan and Jordan have found that recognition is necessary to enhance the retention of nurses in the hospital [38–40]. In a previous Malaysian study, a lack of recognition was found to be a demotivating factor for government doctors [41]. Hence, improving recognition may prevent this brain drain and enhance retention of doctors. Moreover, since there is no cost, it is an appropriate measure for a LMIC like Myanmar.

Increasing recognition can be achieved using simple measures as Stein [42] has stated, "Just by giving an award or recognition certificate, formally recognizing someone in front of a group or even buying a cup of coffee, we're telling the employee that their work is appreciated." Regular feedback and praise from the supervisors and senior doctors would also be helpful [43]. Publicly celebrating the house officer's success, e.g. "house officer of the month" as suggested by Ross et al. [44] is also an attractive strategy. Recognition should be immediate, personal, "tailored to the needs of the recipients" and not superficial [35]. Improving the work life of the house officers, the so-called Quadruple aim, is a necessity to increase recognition and to reduce burnout [45]. Indeed, the solution to addressing burnout is complicated; a collaborative effort within and beyond the healthcare community as recommended by the National Academy of Medicine [46] would still be needed.

4.2. Strength and limitations

This is, to our knowledge, the first study on burnout among the health officers in Myanmar. Moreover, the questionnaires used are all validated.

However, the study has several limitations. Firstly, this is a cross-sectional study, and hence, only associations, not causation, can be drawn from this study. Further longitudinal studies are needed to confirm the associations.

Secondly, the response rate is low which may be due to the web-based survey method [47]. Although the response rate is low, some researchers have found that this method preserves the statistical relationships [48], and the respondents have comparable characteristics to traditional methods [47]. Even with mail surveys, anonymous surveys and physician surveys tend to have lower response rates [49]. However, non-response bias could not be excluded since burned out

Table 6
Multivariate analysis of burnout (n = 159).

Variables	Crude OR[a]	95% CI[a]		Adjusted OR[b]	95% CI[b]		Wald Statistics[b]	(df)	*p*- value
		Lower	Upper		Lower	Upper			
recognition	0.96	0.94	0.97	0.96	0.94	0.97	25.27	(1)	< 0.001

The logistic regression model correctly classified 71.1% of cases. The chi-square value associated with the Hosmer - Lemeshow test ($\chi^2 = 3.84$, $df = 7$, P = 0.799) indicated a good overall model fit.

[a] -Simple logistic regression.

[b] - Multiple logistic regression.

house officers may not be motivated to answer the survey or they may find the survey more relevant and become more likely to complete.

Thirdly, the data shows gender bias in favour of female participants as there were more female house officers, and a regional bias as most participants were from Yangon where two out of the four medical schools providing house officer training are located. A relatively low number of respondents from Mandalay and the other regions can cause difficulty generalizing the findings to these regions. Larger sample size representing all regions is recommended for future studies.

Lastly, since the questionnaire used to measure burnout is validated only for Maslach Burnout Inventory Emotional Exhaustion (MBI:EE), other burnout dimensions (depersonalization and reduced sense of personal accomplishment) may be underestimated. Moreover, this burnout measure is not healthcare specific.

5. Conclusion

From this study, we identified the relatively high burnout prevalence among house officers, and that reward was the only significant factor preventing burnout. Burnout can cause undesirable effects on both health professionals and patients, and hence urgent interventions are recommended. Recognition for work done should always be in the heart of the health authorities and medical community in Myanmar.

Ethical approval

This study was part-audit, part-quality improvement, and not an interventional study, and so ethical approval was not needed.

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Author contribution

Kyaw San Lin - study concept and design, data collection, data analysis and interpretation, writing the paper, critical review Thant Zaw - study concept and design, data collection, data interpretation, writing the paper, critical review Win Min Oo - data interpretation, writing the paper, critical review Pa Pa Soe - data interpretation, critical review.

Conflicts of interest

None declared.

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