



Burnout among surgical residents in a lower-middle income country – Are we any different?



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HIGHLIGHTS

- A cross sectional survey of surgical residents revealed very high levels of burnout among them.
- Males were most commonly affected.
- Job dissatisfaction and owning a smart phone were high risk factors for developing burn out.
- Having children and having some knowledge of burn out syndrome were protective against it.
- Working hours, financial constraints, smoking and consumption of coffee had no effect.

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ABSTRACT

Objective: To assess the presence of burnout among surgical residents working at various public sector hospitals in Pakistan.

Design: A survey based on MBI was used to assess the presence of burnout. Residents were grouped into Group A (Burn out) or Group B (No burn out). Pearson Test was used to see any correlation between different variables and burn out. A p value of <0.05 was taken as significant.

Setting/participants: A cross sectional survey of all the surgical residents at various public sector hospitals in Lahore was done.

Results: A total of 133 residents responded to our questionnaire. 74% respondents were male and 26% were female. All residents showed a very high level of burnout. 50.4% residents had high levels of burn out on the EE category, 49.6% in the DP category and 53.4% residents had low levels on the PA scale. When assessed for overall burn out 57.9% residents had overall burnout. Males were more prone to develop burnout. Job dissatisfaction was the most prevalent reason for burn out. Owning a smartphone was significantly associated with development of burnout. Awareness regarding the burnout syndrome and having children were two factors which had a protective effect against burnout syndrome. Marriage, working hours, financial conditions, smoking and consumption of coffee/tea had no effect on development of burnout syndrome.

Conclusion: There is high prevalence of burnout among the surgical residents in our hospitals. Unsatisfactory training is the number one reason for development of this syndrome.

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1. Introduction

Residency is a stressful, overwhelming period during which residents work long hours and during which the lives of others depend on residents as they increase their knowledge base exponentially. Resident physicians have tremendous responsibilities in the workplace yet they may feel they control very little. This

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arrangement sets the stage for residents to develop burnout. Residents have long weekly working hours, sleep deprivation, post-call clinical responsibilities and difficult working conditions. All these factors are known to be predisposing factors for burnout [1,2]. A lot of stress has been placed on restricting the working hours of residents so as to reduce any kinds of stress. The burnout syndrome is a pathological emotional depletion and maladaptive detachment secondary to prolonged occupational stress. Burnout differs from depression in that burnout only involves a person's relationship to his or her work, whereas depression globally affects a person's life [3].

A broad range of professions that share an intense involvement with people; including physicians, nurses and educators; experience burnout. Burnout is associated with decreased job performance and reduced job commitment and predicts stress-related health problems and low career satisfaction [4,5]. Burnout appears common among practicing physicians, with rates ranging from 25% to 60%. Several studies have analysed the prevalence of the burnout syndrome among residents, suggesting that burnout levels range from moderate to high [6,7].

According to Maslach et al. burnout has three dimensions: (i) emotional exhaustion, characterised by personal energy depletion; (ii) depersonalisation and cynicism, by which the individual detaches him/herself from his/her job and (iii) feelings of inefficacy, by which the individual perceives a failure to reach his/her personal goals. The 22-item Maslach Burnout Inventory (MBI) gives the frequency of specific symptoms a score from 0 to 7 and measures all three burnout dimensions. It is the standard test used in medical literature and has previously been validated among human service workers, including residents. Each dimension receives a sub-score, which is categorised as low, medium or high according to standard scores. High scores in the emotional or depersonalisation dimensions are considered to be clinically relevant and associated with decreased job performance, reduced job commitment, stress-related health problems and low career satisfaction. The MBI has been extensively validated and has become the gold standard for identifying burnout in the medical research literature [8,9].

Debate exists about whether residents' psychosocial distress has immediate or long-term consequences for patients, or for the physicians themselves. Given the goals of residency training, some stress seems inevitable, even favourable, yet scattered studies suggest that residents experience high rates of burnout, a severe stress reaction, and that burnout may be associated with adverse mental health and work performance. Substance abuse, tendency towards depression, higher anxiety and suicidal thoughts. Therefore, high levels of burnout in doctors can lead to poor performance, medical errors, and decreased quality of medical care and deterioration of confidence in health services [10–12].

Unfortunately very little evidence has been generated for the doctors and other professionals working in Pakistan. Although there exist studies which show the presence of stress among doctors [13–15]. No study on burnout syndrome among medical professionals has been done. We decided to do our own survey among residents working in different public sector hospitals. For our study we decided to use the MBI as a pre validated tool for diagnosing burn-out. We only focused on the residents working in the department of surgery. Surgical residents are one of the most stressed out residents [16–18]. Long working hours, never ending emergencies and ward weeks, all add to the stress of these young resident doctors. This study is a cross sectional survey carried at all the public hospitals in Lahore, Pakistan.

2. Methodology

A special questionnaire was designed and was circulated among

all the residents working at different surgical wards of all the public hospitals in Lahore. The questionnaire had two parts. The first part collected all the demographic information of the residents and also asked various questions which could be a possible cause for burnout among these residents. These questions included those pertaining to salary, working hours, marital status, number of children among others.

The second part of the questionnaire was based on Maslach Burnout Inventory. Licences for using the MBI were purchased and were included in the survey.

After seeking permission from the ethical review committee at Services Institute of Medical Sciences, Services Hospital, Lahore the questionnaires were distributed among all the residents working in departments of surgery at various public sector hospitals. Participation in the study was voluntary. All residents were required to fill a consent form to allow for anonymous use of the data. The questionnaires were distributed by our team personally in the wards and outdoors of all the public sector hospitals. The team visited the hospitals on several consecutive days to make sure that no residents were missed out because of their duty in theatres or emergencies.

A total of 200 questionnaires were circulated and given to surgical residents. 133 questionnaires were filled and returned to our team members. All the forms were reviewed and data was manually entered into IBM SPSS ver. 20.0 and were analysed through its statistical software. Frequency of demographic variables were assessed. All residents were tested in all three categories and were identified for presence of burnout. Each category had three levels; high burnout, average burnout and low burnout.

To identify possible reasons for burn out we divided residents into 2 groups: Burn out and No burn out. For this reason using previously accepted criteria all participants with at least two subscale high scores (High on emotional exhaustion subscale; high on depersonalisation subscale; low score on personal accomplishment) were classified as having burnout [19–21]. All others were labelled as having no Burn Out. Pearson Test was used to see any correlation between different variables and burn out. A p value of <0.05 was taken as significant.

3. Results

We had a response rate of 66.5% as out of 200 only 133 residents responded from 5 public sector hospitals in Lahore. Of these 74% respondents were male and 26% were female. Most residents who responded were from year 1 and 2 followed by year 3 and least from year 4. Table 1 shows all the demographic information of the respondents.

The daily habits of the residents were also assessed and it was found that 42 (31.6%) of the residents were smokers (Smoked at least 5 cigarettes per day). 106 (79.7%) residents drank at least one cup of tea per day. 45.9% residents complained of sleeping less than 6 h per day. 60.3% residents did no regular exercise.

Only 54.1% residents were aware of the burn out syndrome. When asked how they deal with burn out the most common response was taking a time out 24.8%. 20.3% said sleeping helped. 8% preferred to do some exercise while 8% said they do nothing to deal with burnout. Only 5% residents sought professional help to deal with burnout.

All residents showed a very high level of burnout. 50.4% residents had high levels of burn out on the EE category as well as DP category. 53.4% residents had low levels on the PA scale. When assessed for overall burn out 57.9% residents had overall burnout (Table 2).

An institute wise comparison showed residents at Jinnah Hospital to be most widely affected with 61.3% residents showing

Table 1
Demographics of surgical residents.

DEMOGRAPHICS					
1. Participants	Male 98 (73.7%)	Female 35 (26.3%)	Total 133 (100%)		
2. Year of residency	Year 1 46 (34.6%)	Year 2 45(33.8%)	Year 3 22 (16.5%)	Year 4 19(14.3%)	
3. Institute	MHL 23(17.3%)	JHL 31(23.3%)	SHL 30(22.6%)	SGRH 24(18.0%)	LGH 25(18.8%)
4. Start of Residency	<3 YEARS 119 (89.5%)	3-5 Years 11 (8.3%)		>5 Years 03 (2.3%)	
5. Unpaid	34(25.6%)	6. Living with parents		46(34.6%)	
7. Married	39(29.3%)	8. Children		20(15.0%)	
9. Second Job	10(7.5%)	10. Own a car		68(51.1%)	
11. Own a Laptop	95(71.4%)	12. Own a smartphone		101(75.9%)	
13. Support	Yourself 73(54.9%)	Wife & Kids 7(5.3%)	Parents 3(2.3%)		

burnout. This was followed by Mayo Hospital at 47.8%, Services Hospital at 43.3% and Sir Ganga Ram Hospital at 37.5%. Lahore General Hospital residents were least affected at 32.0%.

When assessed for possible reason for burn out we found males to be more prone to develop burn out syndrome (p value 0.047). Year of residency had no significant on the burn out levels with all years equally affected. Marriage appeared to protect against burnout but the results were not significant. Residents who had children had a surprisingly low levels of burn out (p value 0.027).

40% of the residents were working more than 80 h per week but we found no correlation between working hours of residents and burn out. 34.6% of the residents had a single continuous duty of more than 48 h but that had no effect on their burnout levels. Duration between graduation and starting residency also appeared to have no effect on burnout. 34% of the residents were working without pay. Even that had no effect on their burnout levels.

Owning a smartphone was associated with a significant increase in burn out levels (p value 0.040). Average sleep time was 6.1 h but wasn't associated with increased burn out levels. Only 72 (54.1%) residents were aware of the burn out syndrome. This awareness was associated with lower levels of burn out (p value 0.007). Smoking and consumption of tea/coffee had no significant effects on the burnout levels.

50 (37.5%) residents said if given an option they would like to change their profession and this had a strong association with the development of burn out syndrome (p value 0.006). 43 (32.3%) residents said they would like to change their chosen speciality. 67 (50.37%) residents said they were not satisfied with the training

Table 2
Burn-out Levels amongst residents.

	High	Medium	Low
Emotional exhaustion	67 (50.4%)	44 (33.1%)	22 (16.5%)
Depersonalisation	66 (49.6%)	34 (25.6%)	33 (24.8%)
Personal accomplishment	27 (20.3%)	35 (26.3%)	71 (53.4%)
	High		Low
Overall burnout	77 (57.9%)		56 (42.1%)

they were getting and this had a very significant association with the development of burn out syndrome (p value 0.001) (see Table 3).

Table 3
Factors responsible for Burnout among residents (significant p value < 0.05).

	Factor	N (%)	Burnout	P value
1	Males	98 (73.7)	48.9%	0.047
	Females	35 (26.3)	34.2%	
2	Married	39 (29.3)	41.0%	0.661
	Unmarried	94 (70.7)	46.8%	
3	Children	20 (51.3)	25.0%	0.027
	No children	19 (48.7)	55.0%	
4	Working > 80 h	54 (40.6)	40.7%	0.842
	Working < 80 h	79 (59.4)	48.1%	
5	Single max duty > 48 h	46 (34.6)	52.1%	0.404
	Single max duty < 48 h	87 (65.4)	41.3%	
6	Starting residency < 3 years	119 (89.5)	45.3%	0.916
	Starting residency > 3 years	14 (10.5)	42.8%	
7	Paid	99 (74.4)	41.4%	0.346
	Unpaid	34 (25.6)	55.8%	
8	Support yourself – Yes	75 (56.4)	40.0%	0.235
	Support yourself – No	58 (43.6)	51.7%	
9	Own a car – Yes	68 (51.1)	44.1%	0.371
	Own a car – No	65 (48.9)	46.1%	
10	Owning a smartphone – Yes	101 (75.9)	48.5%	0.040
	Owning a smartphone – No	32 (24.1)	34.3%	
11	Sleep < 6 h	61 (45.9)	42.6%	0.295
	Sleep > 6 h	72 (54.1)	47.2%	
12	Smoking > 1/day	42 (31.6)	42.8%	0.589
	Not smoking	91 (68.4)	46.1%	
13	Tea/coffee > 1/day	106 (79.7)	42.4%	0.423
	No tea/coffee	27 (20.3)	55.5%	
14	Awareness of burn out – Yes	72 (54.1)	34.7%	0.007
	Awareness of burn out – No	61 (45.9)	57.3%	
15	Change profession – Yes	50 (37.6)	60.0%	0.006
	Change profession – No	83 (62.4)	36.1%	
16	Change speciality – Yes	43 (32.3)	55.8%	0.267
	Change speciality – No	90 (67.7)	41.1%	
17	Satisfied with training – Yes	67 (50.4)	30.3%	0.001
	Satisfied with training – No	66 (49.6)	61.5%	

4. Discussion

Various studies in the past have compared burn out among residents of different specialities. Residents working in Emergency medicine, Surgery & OBGYN are at increased risk [16,17]. A search through the literature shows only a handful of studies done specifically on surgical residents. No such study has been done on residents in low and middle income countries.

We found that our residents are facing high levels of burn out. When compared with the studies from the US, UK and Australia our residents appear to be at higher risk of developing burn out. 50.4% of the residents were suffering from burnout syndrome as compared to 40.0% for residents in the US, 47.6% for residents in Australia and 32.0% for residents in UK [22,23].

We tried to find out various factors which could be responsible for these high burnout levels among our residents. Age had no significant effect. Males had a significantly higher chance of developing burnout syndrome. Various studies show mixed results with some studies showing males as having higher levels of burn out and others showing vice versa [22–25].

Martini et al. showed that married residents had lower levels of burnout. Our residents who were married also had lower levels of burn out but the results were insignificant [17]. Other studies showed no effect of marriage. Having children had a positive effect with residents showed a significantly lower levels of burn out. Collier et al. also showed that having children resulted in lower levels of depression and cynicism [26].

Working hours had no effect on burn out levels. Gelfand et al. showed that working hours had no effect on burn out levels [27]. Martini et al. on the hand showed the opposite with residents working more than 80 h having very high burn out levels [17]. Only 40.6% of our residents claimed to be working more than 80 h per week but they didn't show higher levels of burn out.

25.6% of our residents were working without salary and surprisingly these residents didn't show any extra levels of burnout unlike other studies where finance was a major reason for developing burn out. This is probably due to the fact that all of these trainees belonged to year 1 of training and they were aware of the fact that they will start getting their salaries within the next 6 months as is the norm unfortunately in our hospitals. Also 56.0% of the residents said they were unable to even support their own expenditures. But again this was not associated with higher levels of burnout.

48.9% residents didn't own a car but this had no effect. Owning a smartphone (75.9% residents) had a significant effect on development of burn out syndrome. A study by Daantje Derks and Arnold B. Bakker also showed smart phone users as having higher levels of burnout syndromes [28].

Sleep although known to have an anti burn out affect had no such affect on our residents. Similarly neither smoking nor the usage of tea or coffee seemed to have any effect on the burn out levels among residents.

When we asked residents about the burn out syndrome only 54% were aware of it. This awareness had a strong preventive effect on development of burn out syndrome. If you are aware of the burn out syndrome you can better deal with it.

A staggering 37.6% of the resident were unhappy with their profession and if given a chance wanted to change it. 32% residents said if given a chance they would like to change their chosen speciality. When asked about overall satisfaction only 50% of the residents said they were happy with the level of training they were getting. Not only are these figures disturbing but they had a significant affect on the development of burnout syndrome among surgical residents.

5. Recommendations

Our study has pointed out various problems being faced by the surgical residents at our public sector hospitals. The high levels of burn out among the residents are a cause of grave concern. We recommend that there should be awareness programs about the burn out syndrome and how to cope with it. We do not recommend the shortening of working hours to less than 80 h per week as we found no correlation between working hours and burn out syndrome. Nobody should be allowed to work without a salary. Smart phone usage should be discouraged or limited as this had a significant affect.

A lot of work needs to be done regarding the satisfaction of the residents as far as their training is concerned. Surgical training is one of the most difficult trainings in the medical profession. It has one of the highest drop out rates. Residents elsewhere are allowed to change their speciality and shift to something less demanding. Unfortunately our training system doesn't allow residents to change their chosen speciality and this adds a lot of stress to the resident. Some sort of system needs to be in place to let these residents switch to a less demanding field because having a burnt out resident puts not only his own health at stake but also the lives of the patients he has to deal with.

Ethical approval

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Author contribution

Awais Amjad Malik – Guarantor.

Samiullah Bhatti – Principal Investigator.

Abubakar Shafiq – Literature review, Data acquisition, Preparation of manuscript.

Romaisa Shamim – Literature review, Data acquisition, Preparation of manuscript.

Usman Ismat Butt – Literature review, Data analysis.

Syed Muhammad Bilal – Literature review, Data analysis.

Huma Sabir Khan – Data analysis, Preparation of final Manuscript.

Muhammad Kashif – Data analysis, Preparation of final Manuscript.

Mahmood Ayyaz – Preparation of Final Manuscript.

Conflicts of interest

None.

Guarantor

Awais Amjad Malik.

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