ORIGINAL ARTICLE

PREDICAMENT OF DOCTORS; DISCERNING BURNOUT LEVEL AMONGST SURGICAL RESIDENTS OF KARACHI, PAKISTAN

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Background: Stress and burnout have been soaring among doctors. It does not only have deleterious effects during working hours but also impact personal lives of the doctors. The primary focus of this study is to gauge level of burnout among surgical residents working in two major tertiary care hospital of Karachi, Pakistan. **Methods:** This was a cross sectional study comprising of 118 candidates who completed the questionnaire based on demographics variables, professional details and Maslach Burnout Inventory (MBI), which scores the burnout level on the basis of three components namely emotional exhaustion, depersonalization and personal accomplishment. The duration of study was one month starting from 1st January to 31st January 2019. Residents working in Department of General Surgery were part of inclusion criteria. Consultants and medical students met the exclusion criteria. Data was analysed by SPSS-23. **Results:** Mean MBI score was 57.15 with mean scores of Emotional Fatigue, Personal Fulfilment and Depersonalization were 22.42, 19.89 and 14.81 respectively. In terms of emotional fatigue, female residents (49.2%) were more likely to suffer than their male counterpart (50.8%) (p=0.018). Married residents (37.3%) tend to have higher mean personal fulfilment scores (p=0.02). Residents who were living alone (31%) have higher mean depersonalization score (p=0.02). With respect to personal factors, higher MBI scores were observed among doctors who were married, worked about 75–90 hours and remain sleep-deprived and those who were not able to sustain their families financially. **Conclusion:** On the basis of higher MBI scores in married, sleep deprived residents who were working for extensive hours and felt financial constraints, there is an extensive need of comprehensive support groups, humane number of working hours, improved salary packages, de-stressing activities like sports etc. to ameliorate the mental health of resident physicians and enhance their productivity.

Keywords: Burnout; Residents; Surgery; Karachi

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INTRODUCTION

Postgraduate training in the field of medicine and surgery sets forth a great deal of challenges for the residents and demands a high level of efficiency, patience and optimum capacity to handle the enormous workload for extended hours. Residents deal with continuous and various stressful factors throughout their training which eventually lead to burnout. These stressful factors can be categorized into the following components namely; Situational (i.e., sleep deprivation, workload), Professional (i.e., immense responsibility of patient's information and care) and Personal (i.e., isolation, lack of leisure time, financial hurdles).[1] Other factors include lack of social support and appreciative remarks from seniors, patient's unrealistic expectations etc.[2] Burnout is a pathological response in the form of emotional isolation due to prolonged stressful occupation[3] often resulting in detachment towards patients, crumbling professionalism, increased rate of medical errors, suicidal thoughts, inclination towards substance abuse, poor relationships, frequent job turnover and absence.[4,5] Hence bringing upon negative impact on both personal and professional life of the residents, making it a necessity to ascertain contributory risk factors of burnout and subsequently pave the way for consistent intervention and prevention of their outcomes.[2,6]

Professional burnout has been gauged by several methods and means; however, the Maslach Burnout Inventory (MBI) stands out to be the best instrument to make the most precise assessment. The MBI is formulated to evaluate burnout on the basis on three components namely emotional exhaustion, depersonalization and personal accomplishment.[7] Emotional exhaustion is primarily due to the extensive workload with negligible relaxing time. As a coping mechanism, residents tend to depersonalize themselves by becoming aloof and regarding patients with minimal care. This results in a diminished sense of personal accomplishment and self-satisfaction.

Thus, burnout is responsible for a chain reaction of undesirable consequences over a long time.[8]

The purpose of our research was to explore the level of burnout and the associated risk factors among surgical residents under training in Dr. Ruth K M Pfau Civil Hospital and Dow University Hospital Ojha Campus, which are among the largest hospitals of Karachi, Pakistan.

MATERIAL AND METHODS

This was a cross-sectional survey conducted from 1st January to 31st January 2019 after obtaining IRB approval from Ethical Review Committee. A total of 118 residents, currently training in the departments of General Surgery of the corresponding hospitals were enrolled in the study while consultants and medical students were excluded. Verbal consent was obtained from each participant before handing them the pretested questionnaire. Participation in this study was voluntary and resident's anonymity was maintained by making sure that only a single investigator is responsible for data collection. In this study, data was collected by a medical student.

The questionnaire was pre-formed, pretested and comprised of two sections. The first component consists of demographic and professional details like age, gender, marital status, training specialty, year of residency, residential status. The next section was composed of the Maslach Burnout Inventory (MBI), which is a collection of 22 various aspects of professional burnout. Scoring was done according to MBI guidelines. Specifically, they are: Emotional Exhaustion (EE), low ≤14, high ≥24; for Depersonalization (DP), low ≤3, high ≥9; for Personal Fulfilment (PF), low ≥37, high ≤29.

Data was analysed by SPSS-23. The Pearson Chi-Square Test and Non-Parametric test were applied to determine the association between scores and demographic data. Components of MBI were tabulated in the form of standard deviation and means. Demographic variables and personal characteristics were expressed in the form of percentages. Significance was considered at p-value <0.05

RESULTS

A total of 118 questionnaires of the distributed 130 were returned with complete data which were then included in the analysis yielding a response rate of 90.7%. Table-1 represents the sociodemographic details of the participants. Most of the participants in our study belonged to the age group 26–30 (81.4%) and there was an almost equal representation of males and females with 37% of them being married. Most of the residents were in their last year of residency (27.9%). About 57% of the participants lived in their own house while the remaining were either hostilities (22.1%) or had rented space (20.3%).

The mean score and standard deviations of the accumulated and individual components of the MBI category are expressed in table-2.

In table-3, questions assessing emotional fatigue showed almost one-quarter of the participants expressing fatigue in facing another work day after waking up in the morning either few times per month (23.7%), week (5.1%) or every day (3.4%). Analysis of the personal fulfilment sections showed nearly one-third of the participants feel that they are too hard on their job few times a month (28%), week (22.9%) or every day (6.8%). Almost two-fifths of the participants expressed that they do not care what is happening to some of the participants few times a month (26.3%), week (22.0%) or every day (17.8%). Questions regarding depersonalization showed that more than a quarter of the participants claimed that they feel burned out from their work few times a month (33.9%), week (22.9%) or every day (4.2%).

In table-4, comparison of mean emotional fatigue scores to the other variables showed that females (49.2%) were seen to have a higher average score than males (50.8%) (p=0.018). Comparing mean personal fulfilment scores to other variables showed married people (37.3%) to have a higher mean than those who were single (62.7%) (p=0.02). Doctors who were living alone (31%) had high mean depersonalization score than the ones who were living with their family (69%) (p=0.02).

Table-4 also shows the comparison of various personal and professional variables with the MBI scores. Residents who were married were found to have higher MBI scores (p=0.06). Similarly, residents who spend 75–90 hours working in the hospital with an average sleep time of less than 6 hours per night were found to have higher MBI scores (p=0.02 and p=0.04 respectively).

Trainees who were not making enough money to support their families were having significantly higher MBI scores (Financial satisfaction was considered subjective) than the ones who were earning enough to support their families (p=0.00). There was no statistically significant difference in MBI scores between the people who need psychological help and those that had support from their families.

Table-1: **Demographic variables**

Sociodemographic Variable		Frequency	%
Age	26–30 years	96	81.4
	30–35 years	22	18.6
Gender	Male	60	50.8
	Female	58	49.2
Year of Residency	First Year	25	21.2
	Second Year	29	24.6
	Third Year	31	26.3
	Fourth Year	33	27.9
Marital Status	Yes	44	37.3
	No	74	62.7
Residence	Hostel	26	22.1
	Rented House	24	20.3
	Own House	68	57.6

Table-2: Means and standard deviations for the subsets of the Maslach Burnout Inventory

Components	Mean Score	Standard deviation
Emotional Fatigue	22.42	2.73
Personal fulfilment	19.89	3.03
Depersonalization	14.81	2.19
Total score	57.15	6.62

Table 3: **Distribution of burnout levels among Surgeons under various domains of Maslach Burnout Inventory**

	Never		A few times a year		A few times a month		A few times a week		Everyday	
	n	%	n	%	n	%	n	%	n	%
Emotional Fatigue										
How often do you feel emotionally drained at work?	38	32.2	42	35.6	28	23.7	6	5.1	4	3.4
I feel used up at the end of the work day?	54	45.8	41	34.7	13	11	6	5.1	4	3.4
How often do you feel fatigued when you wake up in the morning to face yet another day at work?	10	8.5	42	35.6	36	30.5	26	22	4	3.4
How often do you feel that dealing with patient all day long is a stress for you?	32	27.1	64	54.2	16	13.6	4	3.4	2	1.7
How often do you feel that you are frustrated by your job?	41	34.7	53	44.9	15	12.7	5	4.2	4	3.4
Do you think that you can easily create a relaxed working environment at work?	8	6.8	25	21.2	35	29.7	40	33.9	10	8.5
Do you feel energetic at work?	6	5.1	10	8.5	34	28.8	37	31.4	31	26.3
Do you feel that you have accomplished worthwhile things from your work?	9	7.6	22	18.6	31	26.3	26	22	30	25.4
Do you think that this job is hardening you emotionally?	72	61	36	30.5	6	5.1	1	0.8	3	2.5
Personal fulfilment										
I feel like I am at the end of my rope?	26	22	59	50	16	13.6	9	7.6	8	6.8
I feel like I am too hard on my job?	11	9.3	39	33.1	33	28	27	22.9	8	6.8
I don't care what's happening to some of recipients?	22	18.6	18	15.3	31	26.3	26	22	21	17.8
Do you think that you have been able to bring a positive change in other people life through your work?	3	2.5	20	16.9	21	17.8	25	21.2	49	41.5
Do you think that you can deal with emotional problems calmly?	3	2.5	32	27.1	36	30.5	37	31.4	10	8.5
How often do you feel that working with people all day long is a strain for you?	40	33.9	58	49.2	13	11	5	4.2	2	1.7
Do you feel that you treat some recipients as if they were impersonal objects?	88	74.6	18	15.3	9	7.6	2	1.7	1	0.8
Do you feel that you have become callous towards people since you have taken this job?	80	67.8	30	25.4	4	3.4	2	1.7	2	1.7
Depersonalization										
I feel burned out from my work	8	6.8	38	32.2	40	33.9	27	22.9	5	4.2
How often do you feel that the patient will blame you for anything that goes wrong in their treatment?	14	11.9	71	60.2	14	11.9	11	9.3	8	6.8
Do you think that you can easily understand how your recipients feel about things?	4	3.4	29	24.6	44	37.3	37	31.4	4	3.4
Do you think that you can easily deal with the recipients' problems?	4	3.4	27	22.9	47	39.8	36	30.5	4	3.4
Do you enjoy working with your colleagues?	8	6.8	6	5.1	46	39	44	37.3	14	11.9

Table-4: **Comparison of personal characteristics with total MBI inventory**

Characteristics	Variables	n	%	T-score *p*-value	E-score *p*-value	*p*-score *p*-value	D-score *p*-value
Gender	Male	60	50.8	0.139	0.018	0.33	0.75
	Female	58	49.2				
Marital Status	Yes	44	37.3	0.06*	0.67	0.02	0.07
	No	74	62.7				
Living with Family	Yes	82	69	0.682	0.10	0.94	0.02
	No	36	31				
No. of working hours in the hospital	Less than 60 hours	0	0	0.02*	0.29	0.00	0.28
	60-75 hours	20	16.9				
	75-90 hours	98	83.1				
	greater than 90 hours	0	0				
Max. no of hours on duty	Less than 24 hours	0	0	0.91	0.27	0.49	0.46
	24-36 hours	102	86.4				
	more than 36 hours	16	13.6				
Do you make enough money to support family	Yes	46	38.9	0.04*	0.02	0.03	0.69
	No	72	61.1				
Average time of sleep per night	less than 6 hours	100	84.7	0.00*	0.00	0.00	0.00
	6-8 hours	10	8.4				
	greater than 8 hours	2	1.6				
Do you need psychological help	Yes	24	20.3	0.89	0.45	0.74	0.43
	No	94	79.7				
Do you have support from family	Yes	108	91.5	0.68	0.84	0.38	0.19
	No	10	8.5				

DISCUSSION

Literature review has shown that doctors are more susceptible to developing burn out than the general population, particularly surgeons[9] and residents[10,11]. We have discovered a high rate of emotional exhaustion amongst our residents. This is in accordance with other studies as well.[12] Personal accomplishment scores were also low. This could be attributed to young age of most of our residents and working in public hospitals with huge patient load as indicated by Kosan *et al*.[13]

Surprisingly in our study, females reported a higher rate of emotional exhaustion as opposed to males. This in contrast to most of other studies which usually state that both genders rank the same in emotional exhaustion. However, males tend to have increased levels of personal accomplishment. This can be explained by the fact that women tend to have more responsibilities outside their professional life and therefore, drain out more.[13]

Few studies hold that having a spouse works as a protective factor against occupational stress.[14–16] This stands in contrast to the findings in our study which revealed that married doctors experienced higher levels of burnout than those who were single. Marriage leads to added expenses and this can be problematic for residents, especially those who are already complaining of perceived financial dissatisfaction, as was the case in our study.[17] Doctors living with their family claimed to feel less burnout than those who lived alone. Hence proving that parents can be stress coping mechanisms for residents.[16] Trainees who spend more working hours in the hospital (75–90 hours) and have less than 6 hours of average sleep per night were found to have higher levels of MBI score. This is similar to higher MBI scores seen in dentists who also have private practices, hence, extended working hours.[8] Shanafelt *et al*[10], has also observed that after adjustment of factors like working hours and call schedule, residents working in fields like emergency medicine have higher MBI scores than residents of other departments, for instance dermatology.

In view of these findings, it is recommended that there should be a wider discourse on the prevalence of burnout in residents. Efforts should be made to create environment for residents to shed off some work stress such as opening gymnasiums for doctors to workout in spare time. Doctors should be encouraged to participate in sports and aerobic exercises as it is a recommended means of coping with emotional exhaustion.[13,18] A maximum limit of work hours should be set per week and no resident should be allowed to work beyond those hours. Income packages should be increased and time for vacations should be allotted to each doctor as studies have shown that doctors who went on vacations were less likely to report burnout.[13] It is also important to ensure that residents are given complete autonomy to make their decisions. This will boost their confidence and will amplify their feeling of personal fulfilment thereby reducing the incidence of burnout. Lastly, stress minimizing programs focusing on cognitive and behavioural techniques should also be introduced.[19,20]

Our study is limited by its small sample size of 118 individuals and being a convenience sample only, instead of a random sample. Since this study is a survey, it is based on the participants' opinion. It is a cross-sectional study and represent only short span of time. A study with a larger sample size should have been conducted to get a broader and clearer picture. Multiple studies involving different hospitals and residents of different specialties should have been done. A study highlighting the differences in resident's burnout between private and public hospital should also be done. Citywide or countrywide research on burnout can also be carried out which can help identify the triggers or factors contributing towards burn out so that programs can devise a strategic plan to eliminate as many risk factors as they possible.

AUTHORS' CONTRIBUTION

FZ: Conceptualization, Project administration. IA: Conceptualization, Project administration. MO: Conceptualization, Visualization, Project administration, Writing, Original draft preparation, Review & Editing. AAK: Investigation, Visualization, Project administration, Methodology, Writing, Original draft preparation, Review & Editing. MOK: Data collection, Formal analysis, Methodology, Writing, Software supervision. SA: Resources, Writing, Project administration. SN: Validation, References, Grammar check and editing MYS: Writing, review & editing.

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