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Impact of burnout among surgeons and residents at a Tertiary Care Hospital of Pakistan.

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ABSTRACT… Objectives: To determine frequency and impact of burnout among surgeons and residents of different specialties at a tertiary care hospital in Punjab, Pakistan, over a period of 6 months. **Study Design:** Observational Cross-sectional study. **Setting:** Departments of General Surgery and Ophthalmology, Mayo Hospital Lahore and the Department of Gynecology, Lady Willingdon Hospital Lahore. **Period:** September to November 2019. **Material & Methods:** Out of 150 invited participants, 124 responded to the questionnaire. Grades of burnout were determined according to the American Public Welfare Association (APWA) inventory. Data analysis was performed using SPSS 26.0, with qualitative statistics determined as frequency and percentages, and quantitative correlations among variables determined by application of chi-square test with p-value ≤ 0.05 as significant. **Results:** Out of 124 participants, 48.3% were female while the rest were male, mostly in the age group of 26-30 years (75%). Majority (50.8%) belonging to General Surgery; 32.3% were from Gynecology and Obstetrics and 16.9% were from Ophthalmology. Most of the participants (81.4%) were residents, with majority (51.6%) working 60-80 hours per week. There was high rate of burnout, with 46.3% of females and 32.8% of males reporting early burnout, and 36.6% of females along with 25% of males reporting advanced burnout. **Conclusion:** There is a high rate of burnout among surgical residents and consultants, attributable to increased working hours, less pay, and decreased job satisfaction. Measures should be taken to curb this trend, both for patient safety as well as for personal and mental health improvement of surgeons.

Key words: Internship & Residency, Job Satisfaction, Mental Health, Professional Burnout, Patient Safety, Surgical Burnout.

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INTRODUCTION

Surgical trainees and consultants face multiple stressors in their day to day life, including, but not limited to, high patient load; poor patient outcomes; long operating room (OR) procedures; and grueling trauma cases. Given the intensity of their workload, it is not surprising, therefore, to find a high rate of burnout among residents and consultants alike. The concept of "Burnout", laid out in the 1970s and defined by cynicism and depersonalization; emotional fatigue; and poor self-accomplishment due to occupational stress;[1] is highly prevalent among surgeons, resulting in medical errors, increased job turnover due to poor satisfaction, attrition, substance abuse, and impaired social and interpersonal relationships.[2,3] Studies have reported a burnout rate of as high as 50% among general surgeons, with slightly lower rates reported for other specialties.[4] Burnout not only leads to poor quality of life for physicians, but also impacts patient outcomes adversely.[5]

Studies undertaken among surgeons have identified high risk for advanced burnout, with a 15% rate reported among orthopedic surgeons and residents by one study[7], and similarly high scores for emotional exhaustion (EE), depersonalization (DP) and low personal accomplishment (PA) reported among gynecological residents by another.[8] Burnout is prevalent throughout the entire spectrum of healthcare, from medical students[9] to nurses[10,11], residents, and consultant

physicians and surgeons.[12] The impact of burnout extends throughout the entire healthcare system, affecting productivity at work in the form of quitting and cutbacks from work;[13] causing financial losses due to poor patient services;[14] and impacting the quality of patient care.[15] There is moderate evidence to suggest that burnout adversely affects safety-related quality of care, accounting for more medical errors; comparable evidence for patient acceptability-related quality of care is less strong.[5] Burnout is also dependent on personal factors, including gender[16], socioeconomic status and type of medical residency.[12]

The aim of this study is to find the prevalence of burnout among surgeons and residents from different surgical specialties, including general surgery, gynecological surgery and ophthalmological surgery. The study also aims to identify the social, emotional and practical effects of burnout on both work performance and personal lives of surgeons. These can then be used to formulate recommendations regarding working hours and counseling of surgeons and residents.

MATERIAL & METHODS

This observational cross-sectional study was conducted after Institutional Review Board approval (IRB No 1996/RC/KEMU; Dated 23/09/2019) at the Departments of General Surgery and Ophthalmology, Mayo Hospital Lahore and the Department of Gynecology, Lady Willingdon Hospital Lahore, over a period of two months. One hundred and fifty surgical residents and consultants were invited for participation; out of these, 124 responded to the questionnaire. The questionnaire consisted of two sections: demographic information (age, gender, department, year of residency (if applicable), number of years of professional experience, distance from hospital in kilometers, marital status, number of children, working hours per week, number of calls per month, average hours per call, private practice, monthly income, job status); and the American Public Welfare Association (APWA) burnout inventory, which consisted of 28 questions divided across three sections. Grades of burnout were determined according to the APWA inventory as follows (Table-I).

Data analysis was performed using SPSS 26.0, with qualitative statistics determined as frequency and percentages, and quantitative correlations among variables determined by application of chi-square test with p-value ≤ 0.05 as significant. The frequency of various grades of burnout was calculated and risk stratification was performed according to department and position.

RESULTS

Out of 124 participants, 48.3% (n=60) were female while 51.7% (n=64) were male, mostly in the age group of 26-30 years (75%). Around 53.2% (n=66) of the participants were married, with the majority (50.8%) belonging to General Surgery; 32.3% (n=40) were from Gynecology and Obstetrics and 16.9% (n=21) were from Ophthalmology. 81.4% (n=101) of the participants were residents, out of which the majority were 1st (32.6%) and 2nd year (38.6%) residents; 23 consultants, mostly senior registrars, participated in the study. 56.4% (n=70) of the participants had around 3-5 years of professional experience. Majority of the doctors (51.6%) worked 60-80 hours per week; 19.4% of them worked >80 hours per week. Around 46.7% of the doctors reported 4-6 inpatient calls during a month, in which they had to work for 24 or more hours continuously. The monthly income of most of the doctors (94.4%) ranged from Rs.50, 000 to 150, 000 (USD 321 to 964).

The frequency of various grades of burnout in our study is presented in Table-II.

There was statistically significant rate of early and advanced burnout among both males and females (p=0.05), with 46.3% of females and 32.8% of males reporting early burnout, and 36.6% of females along with 25% of males reporting advanced burnout. Marital status and number of children did not statistically affect the probability of developing burnout, with rates of early and advanced burnout high among both married and unmarried participants. A significant association (p=0.00) was found between monthly income and burnout: those with income between

50,000 and 150,000 rupees were found to have higher rates of early (38.5%) and advanced (32.5%) burnout respectively compared to those with higher incomes.

Participants with greater working hours reported a significantly higher (p=0.04) grade of burnout compared with those who had reasonable working hours. Around 83.3% of participants who worked greater than 80 hours per week reported burnout, while the number was only slight better (71.9%) in those who worked 60-80 hours per week; a stark contrast from only 50% in those working less than 60 hours. A similar association was found between number of calls per month and burnout: 41.4% of participants with 4-6 calls per month had early, and 32.8% had advanced burnout. Job status also had a statistically significant (p=0.004) impact on burnout grade, with contract jobs associated with higher burnout rate (77%) compared to permanent jobs.

Among the various departments included in the study, general surgeons and gynecologists were more prone to early and advanced burnout, while eye surgeons and residents had an increased propensity towards developing burnout (Table-III).

First and second year residents were found statistically more likely to develop burnout compared to consultants, most of whom had a fair chance of developing burnout as well (Table-IV).

Grades of Burnout	Scores	Interpretation
I	28-38	No stress or professional burnout
II	38-50	Stress, but no professional burnout
III	51-70	Fair chance of burnout
IV	71-90	Early burnout
V	90+	Advanced burnout

Table-I. Grades of burnout according to the American Public Welfare Association.

Grades of Burnout	Frequency	Percentage
No stress or professional burnout	1	0.8%
Stress but no professional burnout	4	3.2%
Fair chance of burnout	34	27.4%
Early burnout	47	37.9%
Advanced burnout	38	30.6%

Table-II. Frequency of various grades of burnout.

		Grade of Burnout					Total
		No Stress or Professional Burnout	Stress But no Professional Burnout	Fair Chance of Burnout	Early Burnout	Advanced Burnout	
Department	General Surgery	1 (1.5%)	3 (4.7%)	16 (25.4%)	25 (39.7%)	18 (28.6%)	63
	Eye	0 (0%)	0(0%)	9(42.9%)	9 (42.9%)	3 (14.2%)	21
	Gynecology and obstetrics	0(0%)	1 (2.5%)	9 (22.5%)	13 (32.5%)	17 (42.5%)	40

Table-III. Grades of burnout among various departments.

		Grade of Burnout					Total
		No Stress or Professional Burnout	Stress but no Professional Burnout	Fair Chance of Burnout	Early Burnout	Advanced Burnout	
Designation	1st year Resident	0(0%)	1 (3%)	8 (24.2%)	15 (45.4%)	9 (27.3%)	33
	2nd year Resident	1 (2.6%)	0(0%)	12 (30.8%)	10 (25.6%)	16 (41%)	39
	3rd year Resident	0(0%)	0(0%)	2 (12.5%)	8 (50%)	6 (37.5%)	16
	4th year Resident	0(0%)	1 (7.7%)	2 (15.4%)	4 (30.8%)	6 (46.1%)	13
	Consultant	0(0%)	2 (8.7%)	10 (43.5%)	10 (43.5%)	1 (4.3%)	23

Table-IV. Correlation of designation with burnout.

DISCUSSION

Our study compares the rates and grades of burnout among surgical residents and consultants in different surgical departments. It shows that the overall rate of burnout is high, affecting mostly gynecological and general surgeons, and that residents suffer relatively more from burnout compared to consultants. It also depicts a worrisome trend in the increasing association of burnout with low income and increased working hours, traits that were shared by the majority of the participants.

In our study 39.7% of general surgeons had early and 28.6% had advanced burnout. These values are relatively higher compared to a survey reporting 57.9% rate of overall burnout among surgical residents.[17] Similarly, our study puts the overall rate of burnout among gynecologists at 75%-a higher figure compared to previous reports from Pakistan, which showed that 44.1% of gynecological residents were dissatisfied with their career choice.[8] Our study also reports increased risk of burnout among ophthalmological residents and consultants—a prospect hitherto unexplored in Pakistan. We attribute the relatively lower rate of burnout among ophthalmologists to better working conditions and work hours, and less strenuous everyday burden.

Our study reports a significant correlation between number of working hours and incidence of burnout in the context of majority of participants working 60-80 hours, this is worrisome, as it bodes ill for future trends towards decreasing burnout. Similar data has been reported by a number of studies comparing burnout in medical students, nurses, orthopedic surgeons and surgical residents.[7-9] Increased working hours are associated with higher rates of medical errors, increased dissatisfaction and emotional exhaustion, and decreased empathy and quality of life.[18] Working hours of >80 per week are associated with significantly reduced efficiency and an increase risk of medical errors, with gynecologists being affected the most by this according to prior studies.[8]

Low monthly income also has a significant association with development of burnout, as evidenced by a 71% overall rate of burnout in our study among participants earning between 50, 000 to 150, 000 rupees per month. Other studies have also identified low wage as a significant contributor to burnout.[7-8,19-20] Increased financial burden, coupled with high working hours, leads to poor job satisfaction as well as an increase in dissociation and low feelings of personal accomplishment. In local studies, it has been found that majority of participants have low income: a substantial influencer of high burnout.

Our study is the first study to highlight burnout among ophthalmological surgeons and residents in Pakistan. It also provides key data regarding burnout from the largest referral center in the province of Punjab, Pakistan. There are, however, limitations to our study, including a small

sample size, less participation of doctors from ophthalmology, cross-sectional study design and presence of confounders such as personal and socioeconomic factors which may impact the rate of burnout. Our study does provide basis for some key recommendations, including the limitation of working hours; decreasing work-load especially on first and second year residents; improving the pay structure so that quality of life can be improved; and increasing peer support and psychological counseling of surgeons to cope with increased rates of burnout. Only urgent application of these vital steps can improve the burnout status and work productivity. Furthermore, long term cohort studies with larger sample sizes also need to be undertaken in order to gauge the effects of burnout on patient outcomes, as well as on surgeon dropout and depression.

CONCLUSION

For a country which is already facing a dearth of trained surgeons, Pakistan is suffering from advanced rates of burnout among its surgical residents and consultants. Strategies to manage workload, reduce working hours, and increase wages should be implemented to prevent the progression of burnout, and psychological counseling and therapy should be promulgated to treat this condition as well. Only then can we hope for a better healthcare delivery system with equitable access.

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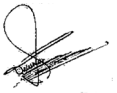
AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Balakh Sher Zaman	Played a role in conception of idea, design and concept, literature search, interpretation of data and preparation of final manuscript.	
2	Raza Gulzar Ghouri	Played a role in design and concept, data collection, interpretation of data and preparation of final manuscript.	
3	M. Mohsin Ali	Play a role in design and concept literature search, data collection, interpretation of data and preparation of final manuscript.	
4	Raja Mobeen Ahmed	Played a role in data collection, interpretation of data and preparation of final manuscript.