Sri Lanka Journal of Medicine **SLJM**

Original Research

Citation: Jayakody CN, Jayapala KTDDP and Jayasinghe HK, et al., 2021. Prevalence and degree of burnout and associated factors from five major specialties in teaching hospitals of University of Colombo. Sri Lanka Journal of Medicine, pp 49-56
DOI: http://doi.org/10.4038/sljm.v30i2.267

Prevalence and degree of burnout and associated factors from five major specialties in teaching hospitals of University of Colombo.

Jayakody CN[1], Jayapala KTDDP[2], Jayasinghe HK[3], Lankatilake KN[4]

[1,2,3]Faculty of Medicine, University of Colombo.
[4]Department of Community Medicine, Faculty of Medicine, University of Colombo

Correspondence: Jayakody CN,
Faculty of Medicine
University of Colombo
Email: jayakodychamath@gmail.com

: https://orcid.org/0000-0001-5509-4890

Abstract

Background: Despite extensive studies done on burnout among physicians in other countries, there is a paucity of data on physician burnout in Sri Lanka.

Objectives: The study was conducted to assess the burnout of medical doctors practicing medicine, surgery, gynaecology and obstetrics, paediatrics and psychiatry specialties and to determine possible associations.

Methods: A cross-sectional descriptive study was done on a sample of 200 working medical doctors from four major hospitals in Colombo district. The data was collected by means of a self-administered questionnaire modified from Oldenburg Burnout Inventory and Copenhagen Burnout Inventory which measured burnout under 3 components; personal, client related, and work-related burnout. Mean burnout score of each specialty was calculated and was analyzed using ANOVA.

Results: The study revealed 15.7% of doctors to be burnt out. Prevalence of burnout was highest in paediatric specialty (25.8%) and lowest in surgery specialty (0%). Mean burnout score was higher in paediatric specialty (41.7) and medicine specialty (41.0) and lowest in surgery specialty (32.6) with the differences being statistically significant between surgery and medicine (p=0.003) and between surgery and paediatrics (p=0.001). Overall state of burnout of doctors showed a significant association with sex (p<0.001) and designation(p=0.021). Several other significant associations were found within each subspecialty.

Conclusion: The study revealed that specialty, designation and sex are significantly associated with prevalence and degree of burnout in doctors as a whole.

Keywords: burnout, physician burnout, emotional exhaustion, Sri Lanka, Physician well-being

INTRODUCTION

It is an inevitable fact, albeit to a varying degree, that most professions do come with their fair share of stress. It is more so in professions where individuals have to deal with people on a more personal level; prolonged constant exposure to such job-related stress may manifest as Burnout. The term burnout was coined in the 1970s by psychologist Herbert Freudenberg and Maslach.

This work is licensed under a Creative Commons Attribution 4.0 International License (CC BY)

Received: 2021-05-31 **Accepted Received: 2021-05-31** **Published: 2022-01-25**

They defined the term as "a psychological syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur in individuals who work with people in some capacity"[1]

Emotional exhaustion is where the individual feels emotionally drained and uninterested in work. Depersonalization is objectifying the people with whom you deal with and developing cynicism against your colleagues while reduced personal accomplishment is shown through the reluctance to take responsibilities within the working environment [2]. Various inventories like Maslach Burnout Inventory (MSI), Oldenburg Burnout Inventory (OBI) and Copenhagen Burnout Inventory (CBI) have been developed to assess these dimensions.

Medical professionals have been found to be more prone to burnout compared to other professions [3]; in a study done among US physicians 45.8% had at least one symptom of burnout. Shananfelt et al [4] assessed the degree of burnout in different medical subspecialties and found that it was highest in trauma surgeons, urologists, otolaryngologists, vascular and general surgeons. There is also a notable prevalence of burnout in medical students which progressively increases at the level of practicing medical doctors [5].

Burnout has a profound impact on doctors, patient care and the health care system [3]. It can affect the mental health of physicians resulting in conditions like anxiety, substance abuse, depression and even suicide. There is also a higher chance of medical errors occurring with burnout [6].

Much like in western countries, the concept of burnout has gained attention as a significant health problem in developing countries recently. Although we can expect certain similarities in patterns of burnout there may be appreciable differences between rates of burnout and associated factors between developed and developing countries. There are also certain notions within the medical fraternity that certain specialties are harder and more taxing than others. This study aims to find the prevalence of burnout among major medical specialties and to assess associated factors for burnout within each of these specialties.

MATERIAL AND METHODS

The study was a cross-sectional descriptive study conducted in Teaching Hospitals affiliated to Faculty of Medicine, Colombo. The study entailed Medical Officers, Registrars, Senior Registrars from the medical and surgical wards of National Hospital of Sri Lanka, paediatric wards of Lady Ridgeway Hospital, gynecology and obstetrics wards in De Zoysa Maternity Hospital and psychiatric wards from National Institute of Mental Health who have worked for at least 6 months in the same specialty. Participants who have taken leave for more than 30 days within the 6 months prior to data collection and those who have lost a family member were excluded.

Ethical clearance was obtained from the Ethics Review Committees of Faculty of Medicine and hospitals from where the participants were recruited.

The questionnaire consisted of two parts, A and B. Part A collected socio-demographic data and Part B assessed burnout which was based mainly on CBI with some additional questions from OBI. Degree of burnout was measured under the 3 components; personal, client related and work-related burnout. The questionnaire thus developed was presented to a panel of experts who had conducted similar studies to advice on the content and adaptability to the local context.

A sample of 40 participants from each specialty was considered using the condition "large enough" sample where $n \geq 30$, making up the total population to 200. Multistage sampling was used in selecting participants. All the wards belonging to each specialty were listed. From this list a sample of wards were randomly selected from each specialty. Forty participants were recruited from each specialty of the selected wards. The completed questionnaires were requested to be dropped into a box placed in the wards to preserve anonymity.

Statistical Analysis

Data was analyzed using SPSS software. Marks were allocated to part B of the questionnaire and percentage score was calculated for each of the 3 components. Average burnout score for each participant was calculated and scores above 50% were classified as being burnout [7, 8] The prevalence of burnout in the total population was calculated and the state of burnout was analyzed for its association in relation to selected socio-demographic factors using Fisher's Exact Test. Subsequently the mean scores with respect to each specialty (degree of burnout) was obtained and Analysis of Variance test (ANOVA) was used to determine whether there is a statistically significant difference in the degree of burnout in different specialties. Tukey's post hoc test was then applied to identify the specialties between which the difference existed. Prevalence of burnout among each specialty and socio-demographic factors were assessed using the Chi Square Test.

RESULTS

Sociodemographic, work related and behavioural characteristics

The overall response rate of the participants was 73.5% with all specialties receiving over 50% response; highest response was from Medicine (82.5%) while the lowest was from Gynecology and Obstetrics (62.5%). Majority of participants were registrars (n=48, 32.7%) and females (n=79, 53.7%). Female predominance was seen in all specialties except surgery, gynecology and obstetrics (Table 3). Our cohort was relatively young (majority between 30-39 years of age (n=77, 52.4%)), married (n=100, 68%) and had served for 1-5 years (50.3%) in their specialty. Most did not engage in private practice (n=129, 87.8%) and were preparing to sit a postgraduate examination (n=95, 64.6%). (Table 1).

Table 1: Distribution of study population with respected to sociodemographic and other factors(n=147)

Characteristics under study	n(%)
Age(years)	
20-29	44(29.9)
30-39	77(52.4)
40-49	22(15.0)
50-59	4(2.7)
Sex	
Male	68(46.3)
Female	79(53.7)
Marital status	
Married	100(68)
Unmarried	47(32)
Specialty	
Medicine	33(22.4)
Surgery	27(18.4)
Psychiatry	31(21.1)
Paediatrics	31(21.1)
Gynecology and Obstetrics	25(17.0)
Designation	
RHO(Residential House Officer)	19(12.9)
SHO(Senior House Officer)	31(21.1)
MO(Medical Officer)	37(25.2)
Registrar	48(32.7)
Senior Registrar	12(8.2)
Private Practice	
Engaging	18(12.2)

Not engaging	129(87.8)
Number of Years of Service	
<1	35(23.8)
1-5	74(50.3)
6-10	29(19.7)
>11	9(6.1)
Sitting for Examinations	
At least one	95(64.6)
None	52(35.4)

Majority were nonsmokers (98.6%), never consumed alcohol (71.4%), occasionally engaged in religious activities (75.5%) and into meditation (58.5%) and physical exercise (57.1%) (Table2). Majority of the participants being females and as Sri Lankan females generally do not smoke or consume alcohol explains the high percentage of nonsmokers and non-alcoholics in the study population.

Table 2 Distribution of participants (n (%)) by behaviour associated factors

Frequency	Smoking	Alcohol	Meditation	Religious	Exercise
Never	145(98.6)	105(71.4)	55(37.4)	4(2.7)	9(6.1)
Occasionally	2(1.4)	41(27.9)	86(58.5)	111(75.5)	84(57.1)
Weekly	0(0)	0(0)	3(2)	18(12.2)	33(22.4)
Daily	0(0)	1(0.7)	3(2)	14(9.5)	21(14.3)

Table 3 Distribution of female representation by specialty

Specialty	no. (%)
Medicine	18(54.5)
Surgery	7(26.0)
Psychiatry	22(71.0)
Paediatrics	21(67.7)
Gynecology and Obstetrics	11(44.0)

Burnout score & prevalence of burnout

Out of the three components, personal burnout scored the highest (46.2%) while client related burnout (30.5%) scored least (Table 4).

Table 4: Burnout score for each component, Mean Burnout Score and Prevalence within each specialty

Specialty	Work related burnout(%)	Personal burnout(%)	Client Related burnout(%)	Mean Burnout Score %)(SD)	Burnout n(%)	Not Burnt-out n(%)
Medicine	39.8	46.2	36.8	41.0(7.50)	6(18.2)	27(81.8)
Surgery	33.6	38.4	25.7	32.6(5.62)	0(0)	27(100)
Psychiatry	33.6	49.4	28.6	37.2(11.57)	6(19.4)	25(80.6)
Paediatrics	42.9	51.9	30.3	41.7(9.63)	8(25.8)	23(74.2)

Gynecology and Obstetrics	42.4	43.5	30.0	38.7(7.56)	3(12.0)	22(88)
Total	38.4	46.2	30.5	38.4	23(15.6)	124(84.4)

ANOVA test results; Sum of all means 1508.198; df=4; mean square=377.049; F=4.959; P<0.001

Within specialty, work related burnout (42.9%) and personal burnout (51.9%) were highest in paediatrics while client related burnout (36.8%) was highest in medicine. Surgery showed the least burnout in all three categories. The mean burnout score (41.7%) was highest for paediatircs.

The cut-off value to be considered as being burnt out was taken as 50% which gave an overall burnout prevalence of 15.6% (Table 4). As shown in table 4 above, ANOVA test showed a significant difference in mean scores of burnout among specialties (p<0.01). Following this result Tukey's Honest Significant Difference Test was used to find the mean scores that are significantly different. This test revealed that paediatrics and general medicine have a significantly higher degree of burnout compared to surgery (p<0.05) (Table 5).

Table 5: Post Hoc multiple comparisons using Tukey's Honest Significant Difference Test

Mean Difference					95% Confidence Interval	
(I)Specialty	**(J) Specialty**	**Mean Difference (I-J)**	**Std. Error.**	**Sig.**	**Lower Bound**	**Upper Bound**
Medicine	Surgery	8.36	2.26	.003	2.11	14.61
	Psychiatry	3.77	2.18	.420	-2.26	9.79
	Paediatrics	-.74	2.18	.997	-6.77	5.29
	Gyne & obs	2.34	2.31	.850	-4.05	8.73
Surgery	Medicine	-8.36	2.26	.003	-14.61	-2.11
	Psychiatry	-4.60	2.30	.271	-10.93	1.75
	Paediatrics	-9.10	2.30	.001	-15.44	-2.76
	Gyne & obs	-6.02	2.42	.099	-12.71	.67
Psychiatry	Medicine	-3.77	2.18	.420	-9.80	2.26
	Surgery	4.60	2.30	.271	-1.75	10.93
	Paediatrics	-4.51	2.21	.254	-10.63	1.61
	Gyne & obs	-1.43	2.34	.973	-7.91	5.05
Pediatrics	Medicine	.74	2.18	.997	-5.29	6.77
	Surgery	9.10	2.30	.001	2.76	15.44
	Psychiatry	4.51	2.21	.254	-1.61	10.63
	Gyne & obs	3.08	2.34	.684	-3.40	9.55
Gyne and Obs	Medicine	-2.34	2.31	.850	-8.73	4.05
	Surgery	6.02	2.42	.099	-.67	12.71
	Psychiatry	1.43	2.34	.973	-5.05	7.91
	Paediatrics	-3.08	2.34	.684	-9.55	3.40

Association of burnout with sociodemographic characteristics

The results showed a significant association only for sex and designation of the doctor to the state of burnout (p<0.05). Female doctors and registrars showed a higher prevalence of burnout (p<0.05) (Table 6). Senior registrars were the least to burnout. Female doctors practicing medicine

showed a higher state of burn out compared to their male colleagues (p<0.05). The state of burnout among doctors in pediatrics were significantly associated with age, sex, duration of service in the specialty and their designation (p>0.05). In gynaecology and obstetrics, being married had a positive association to the state of burnout(p<0.05). In psychiatry there was an association between the number of years in same specialty to the state of burnout (p<0.05) with lower age groups (<5 years) showing a higher burnout score.

Table 6: Association of state of burnout to socio demographic and work-related factors

	Burn-Out n(%)	Not Burn-Out n(%)	Total	
***Age**				
20-29	8(18.1)	36(81.9)	44	p= 0.868
30-39	11(14.2)	66(85.8)	77	
40-49	4(18.1)	18(81.9)	22	
50-59	0(0)	4(100)	4	
***Sex**				
Male	0(0)	68(100)	68	P<0.001
Female	23(29.1)	56(70.9)	79	
***Marital Status**				
Married	17(17)	83(83)	100	p=0.630
Unmarried	6(12.7)	41(87.3)	47	
***Number of years in same specialty**				p=0.128
<1	8(22.8)	27(77.2)	35	
1-5	10(13.5)	64(86.5)	74	
6-10	2(6.8)	27(93.2)	29	
11-20	3(33.3)	6(66.7)	9	
***Designation**				
RHO(Residential House Officer)	2(10.5)	17(89.5)	19	p=0.021
SHO(Senior House Officer) MO(Medical Officer)	1(3.2)	30(96.8)	31	
Registrar	7(18.9)	30(81.1)	37	
Senior Registrar	13(27.0)	35(73.0)	48	
	0(0.0)	12(100)	12	
***Smoking /Alcohol**				
Not indulging in any ofthe above	19(18.0)	86(82.0)	105	p=0.314
Indulging in one of the above	4(9.5)	38(90.5)	42	
Total	23(15.6)	124(84.4)	147	

*more than 20% cells have expected value less than 5. Therefore, Pearson Chi square test could not be applied. Instead Fishers Exact Test was applied to test the association.

DISCUSSION AND CONCLUSIONS

The study showed a burnout prevalence of 15.7%, a value that is relatively low when compared to other studies; 45.8% in the country wide study done by Shananfelt et al [4] in USA and 20.6% in a study by Vithanage et al [9] in 2015 in Sri Lanka. It has been shown that burnout manifests more in

individuals who have worked in a particular specialty for a longer period of times [10]. Similarly, the observed low prevalence rate in this study could be due to the fact that majority have worked only for 1-5 years in their respective specialties.

A study by Vithanage et al in 2015 [9] established a statistical significant association between engaging in private practice and degree of burnout. In this study, the majority 129(87.8%) of participants did not engage in private practice, which could be attributed to the fact that the majority (64.6%) were studying for an examination. This may have reduced the number of working hours thus contributing to reduced prevalence of burnout as longer work hours have been associated with increased burnout [11].

Further, the difference in questionnaires used in each of these studies might have contributed to the low prevalence. To remove this bias, the mean score (degree of burnout) was used in determining the burnout difference among specialties.

While a low rate of burnout in the surgical specialty may seem counterintuitive, it was consistent with previous studies done in developed countries. A study done among medical residents in US by Martini et al in 2015 [12] revealed surgery (burnout rate of 40%) ranked much lower than specialties like internal medicine and gynaecology and obstetrics (burnout rates of 63% and 75% respectively).

This could be due to the need of more stringent monitoring of patients in medical and paediatric wards which invariably results in the necessity for greater work output by the practicing doctor. Similarly, as surgery is generally perceived as being a more taxing specialty it could be that only individuals who are willing to cope up with stressful situations take up this specialty.

Only surgeons from general surgical wards were considered for the study, subspecialties like trauma which are more stressful were not covered; this may have impacted the study results as well.

Positive association between female sex and burnout found in our results was consistent with a study done among post-graduate doctors in Sri Lanka[7]. Similarly, a study in USA [13] which compared the burnout rates between male and female doctors in US, also showed females doctors were more burnt out than their male counterparts.

Results also show that the registrars were more zburnt out compared to other categories which could be due to the cumulative effect of having a greater responsibility in the ward set up in addition to the stress from their academic activities.

Factors causing burnout among psychiatrists in developed countries have been well documented. In 2000 Ramsay et al [14] identified long hours of duty, dealing with difficult and hostile relatives of patients and managing suicidal and homicidal patients as stressful experiences. Prolonged continuous exposure to such an environment could account for the increase in the prevalence of burnout with the number of years of service which is seen in psychiatry [14].

In conclusion, the specialty, designation and sex have a significant association to prevalence and degree of burnout in doctors as a whole.

The association of sociodemographic factors to burnout varied within each specialty. Further studies regarding the situation in Sri Lanka is important for both aspiring doctors as well as for policy makers to identify the fields where burnout is more rampant and to initiate programmes and implement measures that would mitigate the factors leading to burnout and thereby improve overall patient care.

Author declaration

Acknowledgements
We acknowledge all the doctors who participated in the study. The staff of the Community Stream teaching programme who provided us with the necessary knowledge and skills in conducting this research study.

Author contribution
CNJ, KTDDPJ and HKJ were involved in conducting the research in regard to planning the research, preparing the proposal, gaining ethic clearance from the five institutions, data collection, analysis, and drafting the final manuscript.
KL was the supervisor for the research and helped in final editing of the manuscript. This research was a requirement of the Research Stream of the Community Stream, Teaching Programme of the Faculty of Medicine, University of Colombo.

Funding sources
The study was self-funded.

Availability of data and materials
Data analysed can be made available upon request.

Ethics approval and consent to participate
Ethical clearance was obtained from the Ethics Review Committees of Faculty of Medicine, University of Colombo, National Hospital of Sri Lanka, National Institute for Mental Health and Lady Ridgeway Hospital, Colombo. Permission letters from directors of National Hospital of Sri Lanka (NHSL), Lady Ridgeway Hospital (LRH), De Zoysa Maternity Hospital (DMH), Castle Street Hospital for Women, Hospital National Institute of Mental Health(NIMH), Angoda, were then obtained.

Method of Consent
Consultants of the selected wards were informed about the research and their approval was taken. Participants who were randomly selected were briefed about the research and their right to withdraw from the study at any given time during the course of the study by notifying researchers. Subsequently information sheets containing details about the study were distributed and the consent of those willing to take part in the study were taken via a consent form.

Conflict of Interest
No conflict of interest to declare

REFERENCE

1. Maslach C, Jackson SE, Leiter MP. Maslach Burnout Inventory: Third edition. Evaluating stress: A book of resources. Lanham, MD, US: Scarecrow Education; 1997. p. 191-218.
2. Al-Dubai SA, Rampal KG. Prevalence and associated factors of burnout among doctors in Yemen. J Occup Health. 2010;52(1):58-65. Epub 20091110. doi: 10.1539/joh.o8030. PubMed PMID: 19907108.
3. Kathriarachchi M, Rowntree G. A pilot study on burnout syndrome: its existence, causes and coping strategies practiced by medical professionals in Colombo South Teaching Hospital, Sri Lanka. Sri Lankan Journal of Human Resource Management. 2016;6(1).
4. Shanafelt TD, Boone S, Tan L, Dyrbye LN, Sotile W, Satele D, et al. Burnout and satisfaction with work-life balance among US physicians relative to the general US population. Arch Intern Med. 2012;172(18):1377-85. doi: 10.1001/archinternmed.2012.3199. PubMed PMID: 22911330.
5. Romani M, Ashkar K. Burnout among physicians. Libyan J Med. 2014;9:23556. Epub 20140217. doi: 10.3402/ljm.v9.23556. PubMed PMID: 24560380; PubMed Central PMCID: PMCPMC3929077.
6. Montgomery A. The inevitability of physician burnout: Implications for interventions. Burnout Research. 2014;1(1):50-6. doi: https://doi.org/10.1016/j.burn.2014.04.002.
7. Fernando BMS, Samaranayake DL. Burnout among postgraduate doctors in Colombo: prevalence, associated factors and association with self-reported patient care. BMC Medical Education. 2019;19(1):373. doi: 10.1186/s12909-019-1810-9.
8. Ratnakaran B, Prabhakaran A, Karunakaran V. Prevalence of burnout and its correlates among residents in a tertiary medical center in Kerala, India: A cross- sectional study. Journal of postgraduate medicine. 2016;62(3):157.
9. Vithanage A, De Silva P, Lekamwasam J. Prevalence of burnout among doctors in teaching hospitals in Galle Sri Lanka. Eur J Prev Med. 2015;3(2–1):1-4.
10. Stanetić K, Tesanović G. Influence of age and length of service on the level of stress and burnout syndrome. Med Pregl. 2013;66(3-4):153-62. doi: 10.2298/mpns1304153s. PubMed PMID: 23653994.
11. McHill AW, Czeisler CA, Shea SA. Resident physician extended work hours and burnout. Sleep. 2018;41(8). doi: 10.1093/sleep/zsy112.
12. Martini S, Arfken CL, Churchill A, Balon R. Burnout comparison among residents in different medical specialties. Acad Psychiatry. 2004;28(3):240-2. doi: 10.1176/appi.ap.28.3.240. PubMed PMID: 15507560.
13. Linzer M, McMurray JE, Visser MR, Oort FJ, Smets E, de Haes HC. Sex differences in physician burnout in the United States and The Netherlands. J Am Med Womens Assoc (1972). 2002;57(4):191-3. PubMed PMID: 12405233.
14. Ramsay MA. Physician fatigue. Proc (Bayl Univ Med Cent). 2000;13(2):148-50. doi: 10.1080/08998280.2000.11927659. PubMed PMID: 16389369; PubMed Central PMCID: PMCPMC1312297.