Assessment of burnout syndrome among postgraduate medical residents working in a tertiary health care centre of central Karnataka

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Abstract

Background: Burnout syndrome refers to a condition characterised by the experience of emotional, physical, and mental depletion resulting from extended exposure to high levels of work-related stress.

Aim: To estimate the prevalence of Burnout syndrome among postgraduate medical residents and to study the various factors associated with it.

Material and Methods: A cross sectional study was conducted at Tertiary Health care centre, Davangere, Karnataka; over a period of 6 months. Postgraduate medical residents working in various departments were recruited for the study. Copenhagen Burnout Inventory was utilized to assess the prevalence of burnout. Burnout was recorded on three parameters, personal burnout, work-related burnout, and client-related burnout. Data was analysed using SPSS software.

Results: In this study, the burnout among study participants according to Copenhagen burnout inventory was 104(77.6%). The personal burnout was observed among 93(69.4%), work related burnout among 101(75.4%) and patient related burnout among 118(88.0%). On studying the various factors associated with Burnout syndrome we observed it statistically significant association between burnout syndrome and gender 0.024, with female preponderance. Burnout was also observed to be more among 2nd year students than 3rd year students with p value 0.016 and increasing duty hours with p value of 0.026

Conclusion: In this study, the high rate of burnout was observed among postgraduate medical residents working at the tertiary health care centre. The focus should primarily be on the identification of symptoms associated with burnout syndrome and the implementation of methods at all levels to manage symptoms.

Keywords: Burnout syndrome, Postgraduate, Copenhagen Burnout Inventory (CBI)

Introduction

Burnout syndrome refers to a condition characterised by the experience of emotional, physical, and mental depletion resulting from extended exposure to high levels of work-related stress. Work-related constellation of symptoms is a diagnostic term used to describe a set of symptoms experienced by persons who do not have a history of psychological or psychiatric illnesses[1]. Burnout syndrome, symptoms broadly fall under three distinct domains namely, emotional exhaustion, depersonalization and reduced professional accomplishment[2].

The cause of burnout is characterised by the involvement of several factors. The phenomenon occurs when there is a misalignment between the employee's aspirations and values, and the specific job criteria they are expected to fulfil. At the onset, people experience mental distress and a growing sense of disillusionment connected to their profession. As a consequence, individuals experience a decline in their capacity to adjust to the professional setting, accompanied by the manifestation of unfavourable dispositions towards their occupation, colleagues, and clientele[3]. Employees serving in demanding professions may experience burnout related to work at some point of their lives[4].

ICD-10 includes a classification for the condition known as "burnout." Within the ICD-10, burnout is categorised under code Z.73.0 and is defined as a state of complete exhaustion. The concept of burnout

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was introduced as a recognized illness within the International Classification of Diseases (ICD) systems, namely ICD-10 and ICD-11, where it is classified as a kind of occupational stress. Currently, this condition does not possess a distinct classification under the Diagnostic and Statistical Manual of Mental Disorders (DSM). Rather, it is regarded as one of the adjustment and stress-related disorders[5,6].

Postgraduate medical residents experience significant stress because of their busy schedules, high responsibilities, and the significant quantity of scientific material and practical activities they must comprehend within a restricted timeframe[7,8]. Furthermore, there exist additional factors that have been recognised as sources of stress for medical residents, including financial difficulties and inadequate income, insufficient training during evaluations, and experiencing psychological and physical strain from both superiors and patients. This demanding job might result in fatigue, diminished focus, decreased productivity, and health complications associated with heightened stress levels[9,10]

The worldwide scientific community has acknowledged burnout syndrome as a noteworthy issue within the medical profession. As a result, many strategies have been developed to aid healthcare professionals in effectively addressing this problem[11,12].

Since there are very few studies related to this topic from southern part of India, the present study is taken up with the objectives, to estimate the prevalence of Burnout syndrome among postgraduate medical residents and to study the various factors associated with it.

Material and Methods

A Hospital based cross sectional study was conducted at a Tertiary Health care centre, Davangere, Karnataka; over a period of 6 months (1 November 2021 to 31 May 2022)

Postgraduate medical residents working in various departments of the hospital were recruited for the study. Only 2nd year and 3rd year postgraduates residents were available at the time of data collection as 1st year admissions were delayed due to COVID-19 pandemic.

Postgraduate residents who are willing to participate and who are present on the day of data collection were included in the study as study participants. Postgraduates residents who are confirmed cases of any stress disorders, hypertension were excluded from the study.

Sample size was calculated using the formula, $n= 4pq/d^2$, taking prevalence of burnout syndrome as 47.3%[13], q=52.7 and d = 20% of p = 9.46. Calculated Sample size , n=134. Simple random sampling method was used to select the required number of study participants.

Method of data collection:

Study was initiated after obtaining approval from Institutional Ethical Committee. For the purpose of data collection a pre designed, pre structured and validated questionnaire along with Copenhagen Burnout Inventory (CBI) was used[14]. The study participants were informed about the purpose of the study and informed written consent was obtained from them. Data was collected by self administered questionnaire. Data regarding demographic details, academic qualifications, duty hours was collected.

The researchers used the Copenhagen Burnout Inventory (CBI) scale in order to evaluate the prevalence of burnout. The creation of the CBI occurred in 2005 with the purpose of addressing several limitations associated with the widely used "Maslach Burnout Inventory" for evaluating burnout across diverse groups[15]. The survey has a total of nineteen questions, which are further categorised into three distinct subdimensions. This study includes a set of six questions designed to evaluate personal burnout, specifically focusing on the experience of exhaustion irrespective of occupational factors. Additionally, there are seven questions dedicated to assessing work burnout, with a specific emphasis on exhaustion resulting from work-related factors. Lastly, there are six questions that pertain to fatigue resulting from interactions with a relevant population, in this study's context, specifically referring to "patients." Every question is accompanied by five response options, each of which is given a number value. The assessment of burnout prevalence involves the independent calculation of scores within each subdomain, which are then combined[14].

Collected data was entered into excel sheet and analysed using SPSS software. Relevant statistical tests applied and results were presented in the form of tables and graphs. Frequency and percentage were calculated for the categorial data and mean and standard deviations were calculated for continuous data.

Results:

Table1: Distribution of study participants according to sociodemographic details

Variable		Number	Percentage
Age	24-27	83	61.9
	28-31	44	32.8
	32-35	7	5.2
Gender	Male	60	44.8
	Female	74	55.2
Marital status	Married	24	17.9
	Single	110	82.1
Residing with Family	Yes	58	43.3
	No	76	56.7
Postgraduation year	2nd	70	52.2
	3rd	64	47.8

In this study, the mean age of the study participants was 27.46 years and standard deviation of 1.84, with age ranging from 24 to 35 yrs. More than half of the study participants were female 74(55.2%) and males were 60(44.8%). 58(43.3%) of them were residing with family and 76(56.7%) of them were staying away from family. Majority of the study participants were single110(82.1%), however 24(17.9%) of them were married. More than half of the study participants 70(52.2%) belonged to 2nd year and 64(47.8%) of them belonged to 3rd year. (Table1)

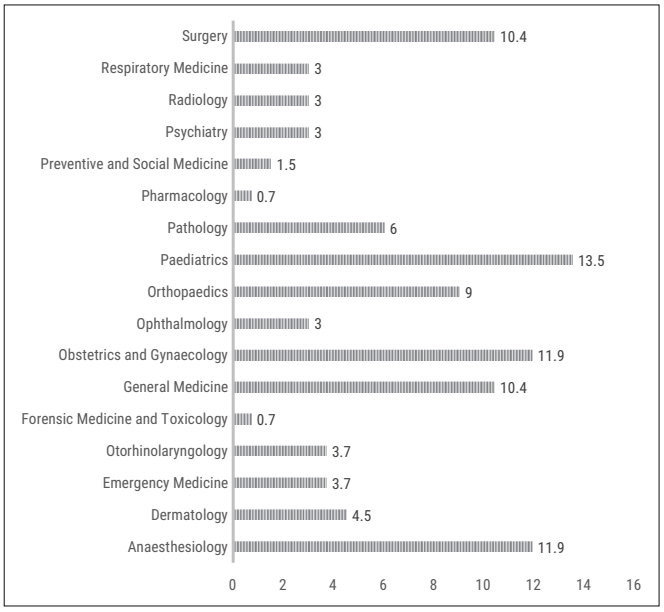

Figure 1: Distribution of study participants according to Department

Postgraduate resident doctors from all the departments, were included in the study, highest participation was seen from paediatric, Obstetric and Gynaecology and Anaesthesia and General Medicine departments contributing to 47.7% of the study population. (Figure 1)

Table 2: Prevalence of Burnout Domains according to Copenhagen burnout inventory(N=134)

Domain	Number	Percentage
Personal burnout	93	69.4
Work related burnout	101	75.4
Patient related burnout	118	88 .0

The mean of duty hours per day was 12.38 hours with a standard deviation of 3.92; ranging from 6-24 hrs/day. The mean number of night shifts per week was 2.27, with standard deviation of 1.37, ranging from 0-7 night duties/week. On enquiring about smoking and alcohol consumption 14 (10.4%) of them reported of smoking tobacco, 35 (26.1%) of them reported of consuming alcohol on regular basis.

In this study, the burnout among study participants according to Copenhagen burnout inventory was 104 (77.6%). The mean scores of personal, work related and patient related burnout domains were 52.4+/-25.3, 57.9 +/-28.5 and 72.1+/- 26.1 respectively. The personal burnout was observed among 93 (69.4%), work related burnout among 101 (75.4%) and patient related burnout among 118(88.0%). (Table 2).

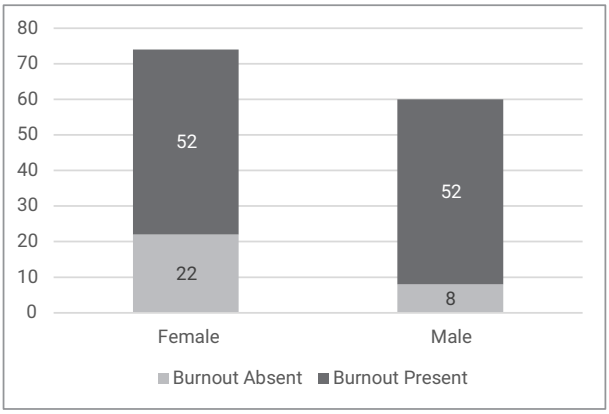

Figure 2: Distribution of study participants according to Gender and Burnout syndrome

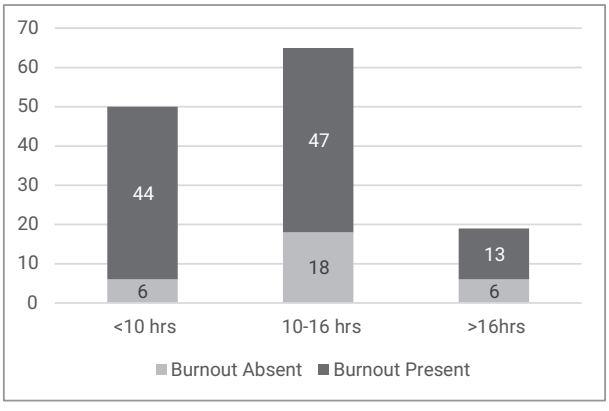

Figure 3: Distribution of study participants according to Duty hours and Burnout syndrome

On studying the various factors associated with Burnout syndrome we observed statistically significant association between burnout syndrome and gender(0.024), the burnout was more among females than males, which was observed to be statistically significant with p value of 0.024.(Figure 2). Burnout was also observed to be more among 2nd year students than 3rd yr students with p value 0.016. There was statistically significant association between burnout syndrome and increasing duty hours with p value of 0.026(Figure 3);

There was no statistically significant association between burnout syndrome and Marital status(p value 0.20), staying with family(0.81), age (0.94), night shifts (0.8)

Discussion

Burnout syndrome is well recognised as a consequence of prolonged exposure to stressful circumstances at work. Burnout arises from a lack of alignment between external demands and internal capacities, including an individual's strengths, traits, and personal requirements[15] Several measures have been developed to evaluate burnout among various professions, including the Maslach Burnout Inventory (MBI), the Burnout Clinical Subtype Questionnaire-12, and the Oldenburg Burnout Inventory[16-18]. The Copenhagen Burnout Inventory (CBI) scale was used in our research because of its inherent clarity, ease of use, comprehensiveness; and the questionnaire effectively assesses burnout across multiple domains.

In this study, the burnout among study participants according to Copenhagen burnout inventory was 77.6%. Similar study conducted by Dhusia A et al.[19], reported total burnout of 56.6% and another study conducted by Deshmukh JS et al.[20], reported burnout of 39.24%. Total Burnout in our study was more comparatively to other studies and it can be attributed to COVID-19 outbreak and delay in the admissions of 1st yr postgraduates increasing the workload and stress among the postgraduate residents.

The personal burnout was observed among 69.4%, work related burnout among 75.4% and patient related burnout among 88.0%. A similar study reported by Deshmukh JS et al., the three domains of Copenhagen burnout inventory, 61.39% of the study participants showed the personal burnout, 43.03% had work related burnout and 44.93% reported of patient related burnout[20].

In this study, we observed that burnout was more among females than males. This finding is also in line with many other research conducted in India and elsewhere[21,22]. This phenomenon may be ascribed to several variables, including increased societal expectations and obligations placed on women compared to men inside the home sphere.

Burnout was also observed to be more among 2nd year students than 3rd yr students with p value 0.016. Previous research has shown that juniors are more susceptible to experiencing burnout compared to their senior counterparts[23,24]

A similar study indicated that young resident physicians who are engaged in studying and/or working within public sector hospitals exhibit notably elevated levels of burnout, which challenges the prevailing notion that burnout syndrome often manifests at a later stage in one's career trajectory[19].

In this study, we observed there was statistically significant association between burnout syndrome and increasing duty hours, which is similar to the observation by a study conducted by Azhar et al., stating that the medical residents are overworked in India[25].

It is imperative for the medical community and regulatory authorities to acknowledge burnout syndrome as a significant potential hazard and adopt proactive measures to effectively recognise, address, and prevent burnout syndrome among resident physicians[26]. The phenomenon of burnout syndrome has been seen to have a detrimental impact not only on the emotional and physical well-being of physicians who experience it, but also on their capacity to provide effective and empathetic care to patients[19].

Our research had some limitations, firstly, the data collection was limited to postgraduate residents affiliated with a certain medical institution. Secondly, the sample size was small, therefore making it inadequate to reflect the whole population of postgraduate residents working in hospitals nationwide. It is suggested that the challenges encountered by physicians throughout the nation may exhibit diversity; nonetheless, the matter of resident burnout is seen to be universally prevalent and hence need sufficient consideration.

Conclusion

In this study, the high rate of burnout was observed among postgraduate medical residents working at the tertiary health care centre. The phenomenon of burnout syndrome is associated with a range of physical, emotional, and psychological repercussions that not only detrimentally affect the well-being of medical professionals, but also impede their capacity to properly fulfil their duties in providing care to patients.

The focus should primarily be on the identification of symptoms associated with burnout syndrome and the

implementation of methods at all levels to manage these symptoms. Future research may include many therapies, including counselling, mindfulness methods, cognitive behavioural therapy, social skills training, and organization-directed interventions, which have shown efficacy in mitigating burnout.

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