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**Original Research Article**

# Burnout syndrome among resident doctors in a tertiary medical college in central India-a cross-sectional study

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## ABSTRACT

**Background:** Practice of medicine is associated with a high level of occupational stress and burnout. Residents face lot of stress because of the workload and heavy duties as well as a large volume of scientific literature and practical tasks which must be learnt in a limited time. Very few studies from India have evaluated psychological issues, stress, and burnout among medical professionals with few studies focusing on resident doctors.
**Methods:** The invitation link of the survey in the form of Google forms was sent to all residents working in the institute. Although the survey was kept anonymous, personal details relating to the participant's demographics, academic qualifications, working hours was recorded. The Copenhagen burnout inventory (CBI) scale was utilized to assess the prevalence of burnout. The data obtained were analysed using SPSS-20.0.
**Results:** The average age of respondents was 28 years. The 48.8% (77) residents work for 41-60 hours/week while 57.59% (91) residents have <2 years of experience in government hospital. The 39.24% (62) had the scores that indicate the total burnout. it was found that personal burnout scores, work related burnout scores and personal burnout scores are comparatively higher in 1st year of residency as compared to 2nd and 3rd year of residency. Overall burnout in 1st year residents was significantly high compared to 2nd and 3rd year residents.
**Conclusions:** Burnout syndrome was significantly high among resident doctors. Attention should be directed to identifying the symptoms of burnout syndrome and addressing them through strategies on various levels.

**Keywords:** Burnout, Residents, Occupational stress, CBI

## INTRODUCTION

The practice of medicine is unique. It is more challenging than any other profession in the world. It is associated with a great degree of both personal and professional satisfaction, but also with a high level of occupational stress and burnout. Stress is known as a biological and psychological process which is experienced by a person while dealing with the environmental threats. Occupational stress, is the biological and psychological effects of negative interaction between work conditions and person's knowledge, skills, or expectations. Occupational stress can lead to poor health and even individual damage.[1]

While burnout is defined as "a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who work with people in some capacity." It is considered as an outcome of long-term exposure to occupational stress.[2] Burnout occurs when there is no coordination between responsibilities and pressures and personal abilities, characteristics and needs. There are a variety of stressors in medical workplace. It is suggested that burnout begins to start during the medical graduation days only. It continues to grow throughout the residency period, and finally matures in the daily life of practicing physicians.[3] Studies suggest that the prevalence of burnout among residents varies from 50% to 76%, depending on the speciality.[4]

Residents face lot of stress because of the workload and heavy duties as well as a large volume of scientific literature and practical tasks which must be learnt in a limited time.[5,6] In addition, there are other issues identified as being stressful for residents, such as financial problems and low income, being evaluated without enough training, and being under psychological and physical pressure from both their superiors and patients. Stress can also be the result of any workplace stressors which are related to role conflicts (such as the conflict between duty to supervisors, or attending physicians and patients expectation), role ambiguities (the tasks were not defined well) and role overload (too many tasks and daily work load for the available time, and other constraints in fulfilling heavy duty expected from them and responsibility for patients' health.[1,7,8] So, depression and anxiety during residency is common and are certainly affects the quality of patient's care.[9]

Very few studies from India have evaluated psychological issues, stress, and burnout among medical professionals. These studies have been mostly limited to medical students and interns, with few studies focusing on resident doctors.[10-14] Studies have reported that about one-third of the resident doctors experience stress.[13] Studies among medical students have reported the existence of stress among three-fourth of the participants.[14] It has also evaluated the barriers in seeking psychiatric help and these suggest that stigma, confidentiality issues, lack of awareness, and fear of unwanted intervention to be the major reasons for not seeking help related to mental health issues.[15] Medical professionals are also prone to develop substance-use disorders.[16]

So, this study is done to estimate the prevalence of burnout and variables associated with it among resident doctors working in tertiary care hospital in central India.

## METHODS

### *Study type*

The study type used was of questionnaire-based cross-sectional study.

### *Study participants*

Resident doctors working in Indira Gandhi Government Medical College, Nagpur.

### *Study tool and data collection*

The invitation link of the study in the form of Google forms was sent to all residents working in the institute. The invitation link stated that the participation was voluntary and completion of questionnaire reflected their consent to participate. The questionnaire was sent twice during the weekends for 6 consecutive weekends. In case someone did not respond at the first instance, weekly reminders were sent for the next 5 weeks. Confidentiality of the information was maintained and no personal information of participants was disclosed to anyone. Although the survey was kept anonymous, personal details relating to the participant's demographics, academic qualifications, working hours was recorded. The CBI scale was utilized to assess the prevalence of burnout. The questionnaire consists of nineteen questions divided into three subdimensions. Six questions about personal burnout that assess exhaustion regardless of occupational factors, seven questions on work burnout that emphasizes on the exhaustion attributed to work-related factors and finally six questions related to tiredness due to interactions with an appropriate population, in our case it was "patients." Each question has five answer choices, each assigned a numerical value. Scores are calculated individually in each subdomain and together to assess the prevalence of burnout. Scores of 50 to 74 are considered 'moderate', 75-99 are high, and a score of 100 is considered severe burnout. All items are straightforward, positively skewed, relate to the relevant subscale and have high internal reliability.[17]

### *Statistical analysis*

The data obtained were analysed using SPSS-20.0. Frequency and percentage were calculated for the categorial variables and mean and standard deviations (SDs) were calculated for continuous variables. Associations were studied using ANOVA test and chi-square test.

## RESULTS

The questionnaire was sent to all resident doctors working in clinical departments of institute. Of these, 158 residents responded to the survey. Out of these 158 residents, 53.8% (85) were males and 46.2% (73) were females. The average age of respondents was 28 years. Distribution of study participants as per year of residency out of 158 residents, 37.34% (59) were 1$^{st}$ year residents, 34.81% (55) were 2$^{nd}$ year residents, while 27.85% (44) were 3$^{rd}$ year residents. Details about working hours per week was also taken. The 48.8% (77) residents work for 41-60 hours/week, 34.8% (55) residents work for 61-80 hours/week, 6.3% (10) residents work for <40 hours/week while 10.1% (16) residents work for >80 hours /week. 57.59% (91) residents have <2 years of experience in government hospital, 36.08 % (57) residents have 2-5 years of experience while 33% (10) have experience of >5 years in government hospital.

Table 2 shows about 39.24% (62) had the scores that indicate the total burnout. About 61.39% (97) residents showed the personal burnout, 43.03% (68) had work related burnout and 44.93% (71) had patient related burnout. About 24.1% residents experienced verbal or physical abuse by patients or their relatives.

Table 3 shows individual burnout domain mean scores with respect to year of residency. In our study it was

found that personal burnout scores, work related burnout scores and personal burnout scores are comparatively higher in 1st year of residency as compared to 2nd and 3rd year of residency. The difference is statistically significant for work related burnout scores (p=0.012) and patient related burnout scores (p=0.013). While difference is not statistically significant for personal burnout scores (p=0.055).

Figure 1 depicts the gender distribution of residents for each domain of burnout scale. It is seen that number of female residents having burnout is more than that of male residents in all three domains of burnout.

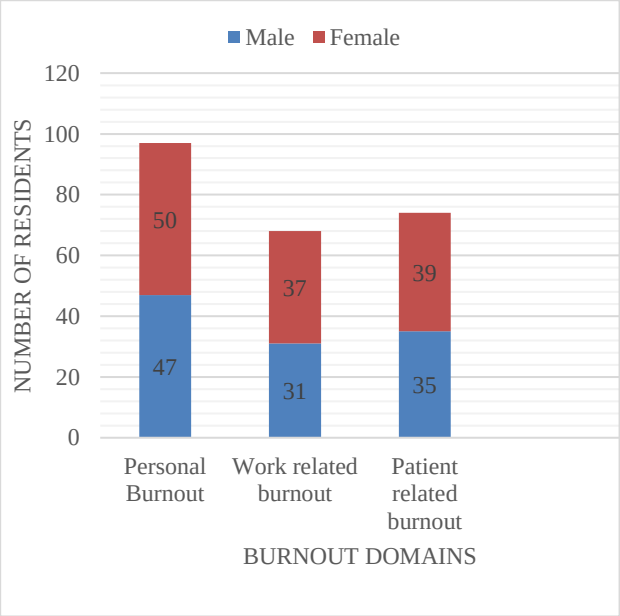


**Figure 1: Gender distribution of residents having burnout.**

**Table 1: Sociodemographic variables of study participants.**

| Sociodemographic variables | Number, (N=158) | Percentage (%) |
|---|---|---|
| **Gender** | | |
| Male | 85 | 53.8 |
| Female | 73 | 46.2 |
| **Year of residency** | | |
| 1st | 59 | 37.34 |
| 2nd | 55 | 34.81 |
| 3rd | 44 | 27.85 |
| **Working hours in a week** | | |
| <41 | 10 | 6.3 |
| 41-60 | 77 | 48.8 |
| 61-80 | 55 | 34.8 |
| >80 | 16 | 10.1 |
| **Years of experience in government hospital** | | |
| <2 | 91 | 57.59 |
| 2-5 | 57 | 36.08 |
| >5 | 10 | 6.33 |

**Table 2: Prevalence of burnout domains and total burnout among study participants.**

| Burnout domains | Number, (n=158) | Percentage (%) |
|---|---|---|
| **Personal burnout** | 97 | 61.39 |
| **Work related burnout** | 68 | 43.04 |
| **Patient related burnout** | 71 | 44.94 |
| **Total burnout** | 62 | 39.24 |

**Table 3: Distribution of mean scores for domains of CBI scale according to the year of residency.**

| Year of residency | Mean scores for domains of CBI scale, (Mean±SD) | | |
|---|---|---|---|
| | **Personal burnout** | **Work related burnout** | **Patient related burnout** |
| **1st** | 50.07± 10.720 | 47.37± 10.417 | 44.49± 12.377 |
| **2nd** | 49.02± 17.555 | 43.04± 14.253 | 38.62± 19.744 |
| **3rd** | 43.34± 14.982 | 39.80± 13.588 | 34.41± 18.941 |
| **P value for ANOVA test** | 0.055 | 0.012 | 0.013 |

Table 4 shows association of burnout with respect to gender and year of residency. It shows that prevalence of overall burnout in females was 45.21% and males was 34.12%. But the difference is not statistically significant as p>0.05. For year of residency, prevalence of overall burnout in 1st year residents was 54.24% (32), in 2nd year residents was 32.73% (18) and in 3rd year residents was 27.27% (12). The difference is statistically significant as p<0.05.

**Table 4: Association of overall burnout with sociodemographic variables of study participants.**

| Socio-demographic variables | Burnout | | Total, N (%) | P value |
|---|---|---|---|---|
| | **Present, N (%)** | **Absent, N (%)** | | |
| **Gender** | | | | |
| Female | 33 (45.21) | 40 (54.79) | 73 (100) | 1.58 |
| Male | 29 (34.12) | 56 (65.88) | 85 (100) | |
| **Year of residency** | | | | |
| 1st | 32 (54.24) | 27 (45.76) | 59 (100) | 0.0101 |
| 2nd | 18 (32.73) | 37 (67.27) | 55 (100) | |
| 3rd | 12 (27.27) | 32 (72.73) | 44 (100) | |

## DISCUSSION

Burnout syndrome adversely affects both emotional and physical health of the doctors. It also affects their ability to treat patients effectively and empathically. Various scales such as Maslach burnout inventory (MBI), burnout clinical subtype questionnaire 12, and Oldenburg burnout inventory have been used to assess burnout among different professionals.[18-20] We have used the CBI in our study which evaluates burnout in a number of dimensions. It is a self-explanatory, simple, comprehensive, and self-assessed questionnaire. Our results showed high scores in all three domains of CBI. 39.24% (62) study participants scored mean scores that indicates the burnout according to the CBI. Similar results were seen in study done by Divatia et al among ICU doctors in India in 2014 by using MBI scale. About 54% respondents had scored "moderate to high" on the emotional exhaustion scale and 40% scored "moderate to high" on the depersonalization scale.[21]

Among the three dimensions of burnout, highest incidence is seen for personal burnout. This shows that most of the residents were tired and either physically or emotionally exhausted. Similar results were seen by Langade et al on Indian doctors. In this study 65.98% people had high scores for the depersonalization scale and 45.02% participants had high scores for the emotional exhaustion scale on the Maslach burnout inventory.[22] The results were also consistent with the studies carried out on oncologists in the USA.[23] In our study, female residents had higher rates of burnout than their male colleagues. This result is also consistent with other studies carried out in India and internationally.[22,24] This may be due to factors such as higher domestic expectations and responsibilities on the females in the society than their male counterparts.

In India, doctors to patient's ratio is approximately 1:11,082 as per the National Health Profile 2018, while the ideal ratio is 1:1000 suggested by the WHO.[25] The working hours and the workload among resident doctors working in government hospitals are very high. The doctors working in government hospitals in India also face other problems such as lack of appreciation, poor living conditions, unhealthy food habits, lack of insurance and protection, violence by patient's relatives etc. This makes them vulnerable for lifestyle disorders such as cardiovascular diseases, hypertension, hyper lipidemia, and lack of energy to spend time with family and friends along with burnout syndrome. Burnout syndrome has been associated to psychological disorders and somatic symptoms including insomnia, irritability, chronic low mood and even suicidal tendencies.[26] Though a sample size of 158 cannot be representative of the entire population of resident doctors working in government hospitals throughout the country, it provided us with an insight into the grave issue of physician burnout in the country.

### *Limitations*

We had a few drawbacks to our study like, the data collection was restricted to doctors in one government hospital, and the sample size was small. We believe that the issues that doctors face around the country may be varied, but the issue of resident burnout is universal and hence must be given adequate attention.

## CONCLUSION

Mainly, attention should be directed to identifying the symptoms of burnout syndrome and addressing them through strategies on various levels. More jobs must be created in public sector hospitals and number of seats for specialty training should also be increased. Stress management strategies such as meditation and psychological counselling should be made available to the residents. Finally, such training should be a part of orientation and recruitment process in government hospitals.

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