Burnout and coping strategies among residents of a private medical college in South India: A cross-sectional study

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ABSTRACT

Background: Burnout is evident in various professions increasingly so in the health-care field, where doctors are involved with direct interactions with dependent patients. Burnout is evident even in residents due to working in demanding and testing conditions which has a negative influence not only on their profession, but also patient care. Aims: (1) To measure the levels of burnout among the residents and (2) to assess the relationship between severity of burnout and coping strategies. Settings and Design: It is cross-sectional observational study set in a private medical college with residency program. Materials and Methods: Online self-administered questionnaire was sent to all residents, out of these, 100 residents consented and completely filled the questionnaires and were included in the analysis with a response rate of 55.6%. The questionnaire consisted of sociodemographic variables, Maslach Burnout Inventory, and Brief COPE. Results: Residents who reported burnout as high in two dimensions of emotional exhaustion and depersonalization are 31.82%. The 2nd year residents scored high on burnout measures when compared to 1st and 3rd year residents. It was observed that as the degree of emotional exhaustion and depersonalization increased from low to high, the frequency of the maladaptive coping strategies also increased. Conclusion: Based on these findings it can be concluded that burnout is frequent in residents. Further research is essential to identify the factors that contribute to burnout in residents.

Keywords: Burnout, coping, residents

Burnout is a distinct phenomenon defined as a prolonged response to chronic emotional and interpersonal stressors in the job.[1] It is explained as a three-dimensional model of response to exhaustion, cynicism, and inefficacy which is a sense of ineffectiveness and lack of accomplishment.[2] Exhaustion component represents the individual stress dimension of burnout. It refers to feelings of being overextended and depleted of one’s emotional and physical resources. The cynicism component represents the interpersonal context dimension of burnout. It refers to a negative, callous, or excessively detached response to various aspects of the job. The component of inefficacy or lack of accomplishment represents the self-evaluation dimension of burnout. It refers to feelings of incompetence and a lack of achievement and productivity at work.[3] Burnout is a process developed over a period of time vowing to the ineffective coping mechanisms employed by the individual to guard oneself from work-related stress.[4]

Freudenberger represents a clinical approach to understand burnout as a syndrome which is caused by parameters such as intrapersonal conflicts, dysfunctional personality traits, or cognitions and faulty coping patterns. On the other hand, Maslach presented a scientific approach that considers interpersonal, social and organizational factors resulting in burnout.[5] The consequences of burnout include job-related factors such as absenteeism, lower productivity,
and effectiveness at work which results in decreased job satisfaction and a reduced commitment to the job or the organization. Burnout also influences the mental health of the individual resulting in depression, suicidal ideation, anxiety, and substance use.\[^{[6]}\]

Burnout is experienced by health professionals who have intense degree of contact with people who are in need or dependent.\[^{[7]}\] Previous studies have estimated burnout prevalence rates in health professionals as ranging from 25% to 75%.\[^{[8-10]}\] A study done in North India among doctors and dentists indicated low levels of burnout as compared to Western counterparts.\[^{[11]}\] Another study of burnout among medical practitioners across India showed high levels of burnout.\[^{[12]}\] There is considerable evidence of presence of burnout in medical students\[^{[13,14]}\] and nursing staff.\[^{[15]}\]

Among the health-care professionals residents are the worst affected due to burnout.\[^{[16]}\] Residency program is stressful as they work in emotionally demanding environments. Residents have long working hours, sleep deprivation, postcall clinical responsibilities and difficult working conditions. All these conditions are known to be predisposing factors for burnout.\[^{[17,18]}\]

Burnout is estimated at 50% in residents.\[^{[19]}\] Burnout in residents has not only a serious impact on the health of the resident, but also interferes with clinical skills such as treatment decision-making, establishing rapport with patients, committing medical errors which hinders the patient safety.\[^{[20]}\] In a study conducted by Zubairi and Noordin in Pakistan among residents highlighted that radiology residents had high levels of burnout due to dissatisfaction with workload, length of work hours, relationship with coworkers, and lack of autonomy.\[^{[21]}\] In the Indian context study done in Kerala showed that the nonmedical/nonsurgical residents had the least prevalence of burnout.\[^{[22]}\] Although studies on burnout exist in Western world there is a dearth of research in India. With this background, the current study aimed to: (1) to evaluate the levels of burnout among the residents using the Maslach Burnout Inventory (MBI) scale and (2) to assess the relationship between severity of burnout and coping strategies.

**MATERIALS AND METHODS**

This is a cross-sectional descriptive study conducted at PES Institute of Medical Sciences and Research, Kuppam, Andhra Pradesh during May and June of 2018. The study population consists of residents of all postgraduate specialties including pre and para clinical departments. Residents were contacted personally or through text messages motivating them to participate in the study after explaining the nature and purpose of the study. Those residents who gave informed consent were included in the study. Residents filled up the online survey questionnaire which included details regarding the sociodemographic profile and burnout and coping scales, the responses were collected anonymously. Incomplete filled questionnaire were excluded from the study. The study received approval from the Institutional Ethical Board Committee.

Burnout syndrome was evaluated using the MBI\[^{[23]}\] a 22-item self-report questionnaire subdivided into the areas of emotional exhaustion (7 items), depersonalization (8 items), and professional achievement (7 items). Respondents rate the frequency of burnout symptoms on a 7-point Likert Scale from 0 (never), 1 (a few times a year or less), 2 (once a month or less), 3 (a few times a month), 4 (once a week), 5 (a few times a week), to 6 (daily). It scores separately for emotional exhaustion, depersonalization, and lack of personal achievement which are then categorized according to severity into low, moderate, or high level of burnout. This questionnaire has been extensively validated across different countries and professions and is considered the most reliable tool for identifying burnout. The emotional exhaustion domain was classified using the following cut-off scores: low (≤18 points), moderate (19–26 points), and high (≥27 points). The depersonalization domain was classified according to the following scores: low (≤6 points), moderate (7–12 points), and high (≥13 points). For the professional achievement domain, the cut-off scores are: low (≤33 points), moderate (34–39 points), and high (≥40 points). The criterion used in the current study to define burnout in residents is the presence of high values for the emotional exhaustion and depersonalization domains along with a low score for professional achievement.

Carver developed the Brief COPE,\[^{[24]}\] an abridged version of the COPE. The Brief COPE measures 14 theoretically identified coping responses: Self-distraction, Active coping, Denial, Substance use, Use of emotional support, Use of instrumental support, Behavioral disengagement, Venting, Positive reframing, Planning, Humor, Acceptance, Religion, and Self-blame. It represents a way to rapidly measure coping responses because it is a short 28-item self-report questionnaire with two items for each of the measured coping strategies. For the purpose of the current study, we grouped the 14 subscales under adaptive coping and maladaptive coping strategies. Adaptive coping strategies tend to be associated with favorable outcomes and maladaptive coping methods tend to be associated with unfavorable outcomes.
RESULTS

The response rate of the residents who participated was 55.6% as 100 out of a total of 180 residents in pre and para clinical departments returned the questionnaire. Of the 80 residents who did not respond, 30 failed to respond to the questionnaire distributed which was considered as lack of consent to participate in the study, and the remaining reported of being busy in their schedules/duties to complete the questionnaires and that it was time-consuming. Table 1 gives the distribution of the sociodemographic variables of the residents. High proportions of residents are single, belonged to 2nd year, belonged to 23–28 age group. Out of the respondents, majority belonged to general surgery (n = 17, 17%) and general medicine (n = 15, 15%). When the specialties were segregated into three groups: Pre and para, medical and allied, and surgical and allied group respondents were the highest (n = 54, 54%) followed by medical and allied group (n = 42, 42%).

Using the MBI, the three dimensions of emotional exhaustion, depersonalization, and professional achievement were analyzed as individual dimensions according to the cut-off scores and also overall burnout score was assessed as high on emotional exhaustion and depersonalization and low on professional achievement. Figure 1 shows that 15 respondents reported high on emotional exhaustion, 44 participants responded high on depersonalization, and low on professional achievement was reported by 50 residents. High burnout scores were observed in three residents scoring high on emotional exhaustion and depersonalization and low on professional achievement. Respondents who reported burnout as high in two dimensions of emotional exhaustion and depersonalization are 14 in number (31.82%) which was statistically significant (P < 0.001) as shown in Table 2. Whereas, residents who reported burnout as high on emotional exhaustion and low on professional achievement are 6% (n = 3) as obtained from Table 3.

The following sociodemographic characteristics were not statistically significant in relation to any of the dimensions of MBI which includes: gender, age, marital status, year of residency, and concerned specialty. When the professional achievement subscale was considered individually, majority of the 2nd year residents (n = 20, 44.5%) scored low on the professional achievement indicating high levels of burnout which was statistically significant (P < 0.039) as indicated in Table 4.

When the associations of the levels of burnout with the adaptive and maladaptive coping strategies were compared, it was observed that as the degree of emotional exhaustion and depersonalization increased from low to high, the frequency of the maladaptive coping strategies also increased which was statistically significant (P < 0.005 and <0.002, respectively) which is indicated in Tables 5 and 6.

### Table 1: Sociodemographic profile and specialty of residents

| Sociodemographic data       | Frequency (%) |
|-----------------------------|---------------|
| **Gender**                  |               |
| Male                        | 54 (54)       |
| Female                      | 46 (46)       |
| **Marital status**          |               |
| Single                      | 66 (66)       |
| Married                     | 34 (34)       |
| **Age (years)**             |               |
| 23-28                       | 69 (69)       |
| 29-33                       | 26 (26)       |
| >33                         | 5 (5)         |
| **Year of residency**       |               |
| I                           | 20 (20)       |
| II                          | 45 (45)       |
| III                         | 35 (35)       |
| **Departments**             |               |
| Pre and para clinical       | 4 (4)         |
| Community medicine          | 1 (1)         |
| Pathology                   | 3 (3)         |
| Medicine and allied         | 42 (42)       |
| General medicine            | 15 (15)       |
| Pediatrics                  | 5 (5)         |
| Psychiatry                  | 5 (5)         |
| Emergency medicine          | 3 (3)         |
| Radiology                   | 6 (6)         |
| DVL                         | 8 (8)         |
| Surgery and allied          | 54 (54)       |
| General surgery             | 17 (17)       |
| Anesthesia                  | 11 (11)       |
| Obstetrics and gynecology   | 7 (7)         |
| Orthopedics                 | 10 (10)       |
| Ophthalmology               | 3 (3)         |
| ENT                         | 6 (6)         |

ENT – Ear, Nose and Throat; DVL – Dermatology & Venereology and leprosy

**Figure 1:** Frequency of distribution of level of burnout in residents

![Graph showing frequency of distribution of level of burnout in residents](image_url)
The current study set to examine the levels of burnout and assess the association of levels of burnout with coping strategies employed. We concluded that 15, 44, and 50 residents out of total of 100 residents who participated in the study reported high scores on emotional exhaustion and depersonalization and low on professional achievement, respectively. This is in contrast to the study on 204 residents that showed 93 (45.6%) respondents reported burnout in the dimension of emotional exhaustion, 118 (57.8%) in the dimension of depersonalization, and 126 (61.8%) in the dimension of reduced personal accomplishment. In another study conducted in Pakistan when all three dimensions of burnout were considered, the overall burnout score was reported in 10 of 82 residents that showed 93 (45.6%) respondents reported burnout in the dimension of emotional exhaustion, 118 (57.8%) in the dimension of depersonalization, and 126 (61.8%) in the dimension of reduced personal accomplishment. In the current study conducted in Pakistan all three dimensions of burnout were considered, the overall burnout score was reported in 10 of 82 residents that showed 93 (45.6%) respondents reported burnout in the dimension of emotional exhaustion, 118 (57.8%) in the dimension of depersonalization, and 126 (61.8%) in the dimension of reduced personal accomplishment.

In the current study, 2nd year residents had higher burnout rates followed by the 3rd year and 1st year. In an Indian study done in Kerala showed that as the years of residency increased, the burnout in all three dimensions also increased with the 1st year residents having the least, and the 3rd year residents had the highest burnout rates in all three dimensions. In a study done in psychiatry residents in Canada higher burnout levels were observed in 2nd year residents. Increase in job responsibilities in the 2nd year coupled with the removal of the cushion and tag of the junior doctor in 1st year predisposes residents to higher level of burnout in 2nd year.

All the individual specialties were segregated into three groups for comparisons. When individual dimensions of burnout were considered in these groups high emotional exhaustion in 9 (21.43%) and high depersonalization in 21 (50%) and low professional achievement 25 (59.52%) as compared to the married. This is in line with a study done by Martini et al. which found less burnout in married residents. Married residents have the social support of their spouse which acts as a buffer for the period of residency program and protect against the proneness for burnout.

The unmarried residents experienced high burnout as depicted by high scores on emotional exhaustion (n = 8, 20.59%) and depersonalization (n = 26, 39.39%) and low on professional achievement (n = 36, 54.55%) as compared to the married. This concurs with the study done by Woodside et al. which observed a similar pattern of higher burnout rate among younger resident doctors.

Age group of 23–28 years projected high levels of burnout indicated by high scores on emotional exhaustion (n = 9, 13.04%) and depersonalization (n = 28, 40.58%) and low on professional achievement (n = 38, 55.07%). This concurs with the study done by Woodside et al. which observed a similar pattern of higher burnout rate among younger resident doctors.

Table 2: Comparison between the emotional exhaustion and depersonalization dimensions of burnout

| Emotional exhaustion | Depersonalization | Total (%) |
|-----------------------|-------------------|-----------|
| Low                   | Moderate (%)      | High (%)  |
| Low                   | 30 (88.24)        | 17 (77.27)| 57 (57.00) |
| Moderate              | 4 (11.76)         | 4 (18.18) | 28 (28.00) |
| High                  | 0 (0.00)          | 1 (4.55)  | 15 (15.00) |
| Total                 | 34 (100.00)       | 22 (100.00)| 100 (100.00)|

Table 3: Comparison between emotional exhaustion and personal achievement

| Emotional exhaustion | Personal accomplishment | Total (%) |
|----------------------|-------------------------|-----------|
| Low                  | Moderate (%)            | Low (%)   |
| Low                  | 15 (51.72)              | 34 (68.00)| 57 (57.00) |
| Moderate             | 8 (27.59)               | 13 (26.00)| 28 (28.00) |
| High                 | 6 (20.69)               | 3 (06.00) | 15 (15.00) |
| Total                | 29 (100.00)             | 21 (100.00)| 100 (100.00)|

indicates that high levels of burnout are associated with increased usage of maladaptive coping strategies.
Table 4: Comparison of the individual dimensions of burnout with the sociodemographic profile

| Sociodemographic data | Emotional exhaustion (%) | Depersonalization (%) | Personal achievement (%) |
|------------------------|---------------------------|-----------------------|--------------------------|
|                        | Low | Moderate | High | Low | Moderate | High | High | Moderate | Low |
| Gender                 |     |          |      |     |          |      |      |           |    |
| Male                   | 31  | 13       | 10   | 18  | 17       | 9    | 28   | 17       | 11  |
| Female                 | 26  | 15       | 5    | 10  | 17       | 13   | 16   | 12       | 10  |
| Marital status         |     |          |      |     |          |      |      |           |    |
| Single                 | 40  | 18       | 8    | 12  | 27       | 13   | 26   | 19       | 11  |
| Married                | 17  | 10       | 7    | 20  | 10       | 18   | 10   | 10       | 9   |
| Age (years)            |     |          |      |     |          |      |      |           |    |
| 23-28                  | 42  | 16       | 9    | 14  | 23       | 12   | 25   | 13       | 12  |
| 29-33                  | 11  | 10       | 5    | 12  | 20       | 12   | 12   | 10       | 10  |
| >33                    | 4   | 0        | 1    | 0   | 1        | 0    | 3    | 2        | 0   |
| Year of residency      |     |          |      |     |          |      |      |           |    |
| I                      | 16  | 10       | 2    | 10  | 9        | 5    | 8    | 3        | 3   |
| II                     | 20  | 14       | 8    | 17  | 14       | 23   | 15   | 14       | 14  |
| III                    | 21  | 9        | 11   | 26  | 11       | 13   | 13   | 15       | 16  |
| Departments            |     |          |      |     |          |      |      |           |    |
| Pre and para clinical  | 3   | 1        | 0    | 0   | 1        | 2    | 3    | 1        | 1   |
| Community medicine     | 1   | 0        | 0    | 0   | 0        | 0    | 0    | 0        | 0   |
| Pathology              | 2   | 1        | 0    | 0   | 2        | 1    | 3    | 2        | 1   |
| Medicine and allied    | 24  | 17       | 14   | 13  | 24       | 21   | 9    | 8        | 15  |
| General medicine       | 8   | 5        | 3    | 20  | 8        | 25   | 4    | 4        | 2   |
| Pediatrics             | 3   | 2        | 1    | 1   | 3        | 3    | 3    | 3        | 3   |
| Psychiatry             | 3   | 1        | 1    | 0   | 1        | 2    | 3    | 1        | 1   |
| Emergency Medicine     | 0   | 0        | 0    | 0   | 0        | 0    | 0    | 0        | 0   |
| Radiology              | 2   | 1        | 3    | 5   | 3        | 0    | 3    | 1        | 1   |
| DVL                    | 8   | 0        | 0    | 7   | 7        | 0    | 1    | 0        | 0   |
| Surgery and allied     | 30  | 16       | 11   | 12  | 29       | 21   | 3    | 12       | 13  |
| General surgery        | 13  | 1        | 1    | 1   | 13        | 4    | 0    | 1        | 0   |
| Anesthesia             | 5   | 4        | 1    | 1   | 5        | 4    | 4    | 4        | 4   |
| Obstetrics and Gynecology | 3 | 1        | 1    | 1   | 3        | 4    | 3    | 3        | 3   |
| Orthopedics            | 6   | 2        | 2    | 2   | 2        | 2    | 3    | 2        | 2   |
| Ophthalmology          | 1   | 0        | 1    | 0   | 1        | 1    | 2    | 2        | 2   |
| ENT                    | 2   | 3        | 4    | 0   | 3        | 1    | 2    | 3        | 3   |

ENT – Ear, Nose and Throat; DVL – Dermatology & Venerology; and leprosy

Table 5: Analysis of variance between emotional exhaustion and maladaptive coping

| Source                  | SS          | df | MS   | F    | P > F |
|-------------------------|-------------|----|------|------|-------|
| Between groups          | 356.387368  | 2  | 178.193684 | 5.55 | 0.0052 |
| Within groups           | 3117.05263  | 97 | 32.145632  |       |       |

MS – Mean square; SS – Sum of square

Table 6: Analysis of variance between depersonalization and maladaptive coping

| Source                  | SS          | df | MS   | F    | P > F |
|-------------------------|-------------|----|------|------|-------|
| Between groups          | 574.796952  | 2  | 287.398476 | 9.62 | 0.0002 |
| Within groups           | 2898.46305  | 97 | 29.882918  |       |       |

MS – Mean square; SS – Sum of square

High emotional exhaustion was reported by the radiology department, and high scores on depersonalization by emergency department. Low professional achievement was noted in dermatology. This finding resembles that of de Souza et al., who concluded that burnout was of higher proportion in cognitive specialties (clinical) which includes the medicine and allied specialties when compared with the surgical specialties (skills based).[28]

The limitations of the present study are that study design being cross sectional, a cause effect relationship could not be established. Response rate was inadequate, since the study was conducted at a single center results cannot be generalized. Irrespective of the anonymity and confidentiality being maintained the chances of underreporting cannot be ruled out as the embarrassment of being discovered and the fear of the authorities could have influenced the responses of the residents. Work- and stress-related parameters were not considered in the present study which would have thrown further light into the burnout issue. The strength of the study relies on the sufficient sample size, adequate response
rate, and the use of standardized instrument to measure burnout.

CONCLUSION

This study contributes to the existing research on burnout and documents high burnout scores on the individual dimensions of emotional exhaustion, depersonalization, and professional achievement. The 2nd year residents scored high on burnout measures when compared to 1st and 3rd year residents. In the Indian scenario, burnout may be considered as an emerging area of research as much need to be done to fill in the gaps. Burnout in the residents has serious implications not only on the psychological and physical health of the resident, but also on the quality of care of the patients. Policies and attempts to restructure the approach to residency training, attention to the personal well-being of the resident with interventions focusing on creating awareness, developing stress management programs, mentoring modules in residency training may go a long way in combating burnout in residents.[29]

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Conflicts of interest
There are no conflicts of interest.

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