

## Stress and Burnout Syndrome

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### Key Points

- ❑ Stress or distress affects the physical, physiological and psychological wellbeing of a person.
- ❑ Burnout is a multi-dimensional syndrome seen in persons associated with human-oriented jobs.
- ❑ Burnout may reduce the patient safety, and self-efficacy of healthcare professionals.
- ❑ Different coping strategies are adapted by different persons for different stressful situations to overcome stress.
- ❑ Coping is a dynamic process that involves both cognitive and behavioural responses to stressful situations.

### INTRODUCTION

We have often heard students and sometimes even teachers say this after a very busy semester, *'I am totally stressed out or I am just so exhausted'*. Is this stress, exhaustion and burnout related to the work that they are doing or is it just that some people are not able to take on extra workload and feel this way? Or, when a caregiver shows signs of burnout is it due to her job demand or emotional attachment to her patients?

### STRESS

Certain optimum level of stress is considered as appropriate for being productive and creative and is accompanied with good mental and physical performance. The words 'eustress', and 'distress', describe the positive and negative aspects of stress in a person's life. This positive stress is helpful especially when faced with challenging and difficult tasks. But when the optimum stress levels are negatively influenced by internal and external factors, it manifests as physical and psychological disorders and is described as distress.

Stress during higher education can lead to mental distress and affect the learning. High levels of anxiety and depression have been reported among college students from all parts of the world. The concepts of stress, mental distress and self-perceived depression overlap to a great extent (M. Dahlin et al, 2005).

Stress can be experienced not only during professional studies, but also before, during the transition from undergraduate to professional level, and after, and during the transition to the practicing professional. The cause of stress among the university students may be attributed to academic work, environment, time management, personality traits, and financial burden (Heins et al, 1984). Psychological distress is reported in literature among medical students quite frequently as compared to

general population (M. Dahlin et al, 2005; Dyrbye et al, 2006, 2011; Tyssen et al, 2004).

High levels of stress seen in university students, especially during the university examination time, affects their health causing high degree of dropout. Family conflicts, female gender, few sleep hours and poor academic performance are the other stressors among university students.

## BURNOUT

The term burnout was first coined by Herbert Freudenberger in 1974 in the USA in context of “staff burnout” and correlated job dissatisfaction with work-related stress (Freudenberger, 1974). He described it as a syndrome affecting mostly the persons holding jobs with high ethical and social responsibilities.

In the World Health Organization International Classification of Diseases (ICD), 11th revision (Berg, 2019), burnout is included in section on “problems related to employment and unemployment” and is described as ‘*feelings of energy depletion or exhaustion, increased mental distance, or feelings of negativism or cynicism related to one’s job and reduced professional efficacy*’. In ICD 11 it is identified as an occupational related ailment and not a medical illness.

Burnout has been identified as an occupational risk for people dealing with human-oriented professions; be it healthcare, education or caregivers. In all these vocations, altruism, i.e. to be selfless and put others’ needs first, to go beyond the call of duty to ensure that the patient’s, student’s or client’s requirements are met to the best of one’s ability, are taken as primary responsibilities. And then there are organizational factors such as funding, or policies that result in increased workload and reduced resources that affect the person working in such environment. Not only these but other professions where client is considered supreme are also getting affected by the stress and burnout syndrome (Maslach and Leiter, 2016).

As described by Maslach and Jackson (1981a), burnout is a three-dimensional syndrome, manifested as excessive emotional exhaustion that is associated with cynical attitude, and an inclination to gauge oneself negatively especially in relation to their work with patients or a declined sense of personal accomplishment (Fig. 4.1). Feeling of being emotionally strained and having worn-out one’s emotional resources is referred as emotional exhaustion. Depersonalization (now labelled cynicism) refers to a negative, callous and detached or inappropriate

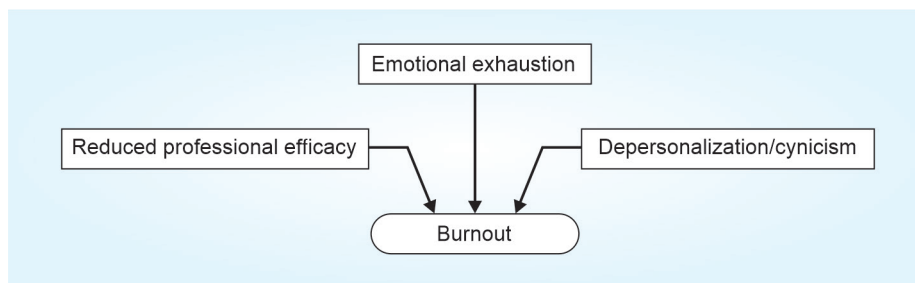


Fig. 4.1: Main dimensions of burnout

attitude towards the people one works with, such as patients, clients or students. When someone assesses his/her own work performance negatively, it denotes reduced personal accomplishment (Schaufeli et al, 2017) or inefficacy. Of these three components, emotional exhaustion has been shown as the key component of the burnout and affects the work performance the most (Wright and Bonett, 1997).

While most of the researchers agree on what burnout is, there seems to be no agreement about what it is not. Many a times the terms stress and burnout are used synonymously; conceptually and theoretically it would be better to treat these two terms separately (Guglielmi and Tatrow, 1998).

Theoretical framework divides burnout in three models (Oranje, 2001):

- **The interaction model:** This model considers burnout as a problem arising out of one's inability to cope up with real or perceived stressors in their work environment.
- **Response or physiological model:** When an individual experiences both mental and physical exhaustion when stuck in a situation that results in a heavy emotional toll.
- **Environmental stressor model:** When the stressors like organizational working atmosphere results in burnout, for example, lack of social support between teachers and students, colleagues or superiors trigger burnout syndrome (Brouwers and Tomic, 1999).

## BURNOUT AMONG TEACHERS

As seen with other human services, burnout has been reported among teachers, too. If teachers continue working even if burnt out, this will have a negative effect, not only on their physical and mental health, but will adversely affect students and educational system. Burnt out teachers manifest irritability and difficulty in handling students' disruptive behaviour in the classroom (Evers et al, 2004). Students look up to teachers for guidance and as role models. A stressed or burnt out teacher affects the learning environment and ultimately the educational goals of the institution. A burnt out teacher who shows very little interest in her/his students' progress, is likely to induce apathy among students, cynicism towards students, absenteeism and finally a decision to leave the job. Burnout in teachers is associated with poor physical health, too (Guglielmi and Tatrow, 1998).

Changes in medical education, healthcare system and public expectations have increased the demands on medical teachers. When the occupational demands on the medical teacher exceeds his/her capabilities and resources, it invariably results in stress and burnout (Harden, 1999). Three main factors are associated with stress in teachers—total workload and day-to-day work demands, and lack of autonomy to carry out the work, requirement to adapt and adopt teaching-learning (TL) approaches with which the teacher is not familiar.

Work burden in medical teachers is related to factors such as increased number of students without suitable increase in number of teachers, and continuous teaching throughout the year without adequate breaks that leaves no time for teachers to

recover from the work stress. Another important factor contributing to stress is the new curriculum with early clinical exposure, where clinicians are expected to start teaching right from year one. This invariably results in increased workload.

Another factor causing stress and burnout is the multiple roles a teacher is expected to take on and the teacher's ability to meet these expectations. With the new curriculum, the teacher is expected to take part in integrated teaching, student-centred learning strategies, carry out multiple performance assessments, give feedback to student and be a mentor, in addition to the regular teaching in her/his own subject. He/she may not be adequately prepared to take up the new roles and additional responsibilities.

Curriculum evaluation, quality assurance and accreditation documentation add to the work demands. The workload is increased both in terms of quality and quantity. A clinical teacher has to balance between the clinical work, teaching responsibilities, research activities and administrative responsibilities within the given time. Such pull from multiple directions may lead to reduced performance and job dissatisfaction.

When the teacher is not very clear about his/her role and responsibilities in the newer teaching/learning strategies such as problem-based learning, community based teaching or integrated teaching, this leads to role conflict and ultimately to stress and burnout (Davis and Harden, 1999). In general, teaching load in medical education is high and more demanding. In such a situation, any change itself is likely to induce stress.

Three models of stress have been proposed to explain the relation between the stressed and stressors.

***Person-environment fit model (Harrison, 1978):*** According to this model, when the job demands and the person's ability to meet those demands do not match, it results in stress.

***The effort-reward model (Siegrist, 1996):*** When the efforts made to meet the work demands do not match with the financial rewards or the promotions, likelihood of stress are high.

***Demands-supports-constraints model (Payne and Fletcher, 1983):*** As per this model there is a lack of support or resources to meet the increased demands resulting in stress. Most of the times, changes in medical curriculum are expected to be implemented without much thought for additional resources, either in terms of manpower or infrastructure or financial requirements, leading to stress.

### **Stress Management Approaches in Medical Teachers**

Stress in medical teachers is a potentially critical issue that needs to be addressed at individual and institutional level with suitable strategies. Some of the suggested approaches are (Harden, 1999):

- Make the roles and responsibilities of the teachers clear while implementing any change.

- Try to match the capabilities of a teacher with the roles expected of them.
- Reward the commitment and efforts of the teacher who excels in his/her work.
- Distribute the workload in such a way that no one teacher is overloaded.
- May be time is right to employ a few clinicians for teaching only, thereby reducing the workload on other clinicians.
- Reducing the top-down approach and giving more autonomy to teachers for planning their teaching learning strategies.
- Faculty development programs to be conducted for all faculty members before introducing any new teaching or assessment approaches.

### **BURNOUT AMONG POSTGRADUATES, RESIDENTS AND CLINICIANS**

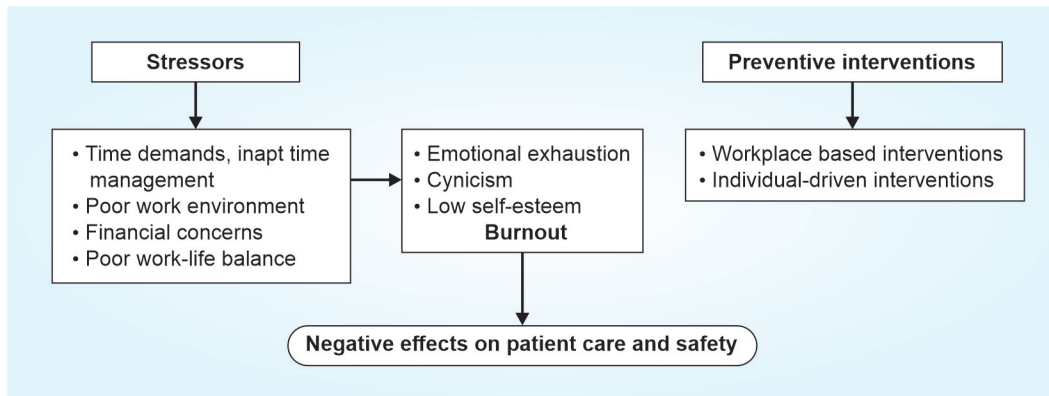
The intense emotional stress that the doctors face in their workplace makes them more prone to burnout. The detrimental consequences of work-related stress and burnout could result in mental depression, medical errors that might ultimately affect the patient safety and potential compromise of quality of care.

Postgraduate (PG) training seems to put the PGs under stress leading to burnout, the seeds of which might have been sown during undergraduate studies. Due to stress they may fail to develop an appropriate professional relationship with the patients, and make proper diagnostic or treatment decisions (IsHak et al, 2009). A variety of factors contribute to burnout in physicians, and seems to be a cumulative, long drawn process (ME Dahlin and Runeson, 2007; Dyrbye et al, 2006; McManus et al, 2004). The prevalence of burnout increases as the PG progresses from 1st year to final year. They also become more cynical and less humanistic during the course of study. Both of these may lead to emotional exhaustion and depersonalization, causing burnout. Prevalence of burnout is shown to be correlated with the subject specialty (Martini et al, 2004) with obstetrics and gynaecology and psychiatry residents showing highest burnout rate and family medicine, the least.

#### **Factors Causing Stress and Burnout in Residents**

Common stressors reported by residents are: Time demands, inapt time management, work planning, organization of work and studies, and interpersonal relationships (Cohen and Patten, 2005). Other stressors that lead to burnout are dissatisfaction with clinical faculty, mood fluctuations, and marital status (Martini et al, 2004). Poor work environment, poor career development, poor work-life balance and financial worries were other stressors identified (Fig. 4.2) (Zhou et al, 2020). Patient violence and suicide aggravate burnout among psychiatry PGs.

Being married and having children seems to have a calming effect and less stress. Logically, having added responsibility of a life partner and children would lead to additional stress, but parenting seems to have a softening effect on residents and a protective effect against burnout. Having a child during residency has shown to make the residents less cynical, decreased their suicidal tendency and made them more humanistic (Collier et al, 2002).



**Fig. 4.2:** Stressors, effects and preventive interventions for burnout during post graduation

Clinicians seem to manifest the burnout dimensions sequentially, with emotional exhaustion appearing initially. If not identified and treated, it proceeds to depersonalization in an attempt to deal with exhaustion; finally, the capacity to face the demands of work lessens, resulting in feelings of low self-esteem (Gracino et al, 2016).

### Influence of Burnout on Patient Care

Stressed or burnt out PGs and clinicians end up making more number of medical errors, have difficulty in rapport building and making accurate diagnostic decisions (**Box 4.1**). The Accreditation Council for Graduate Medical Education (ACGME) decided to restrict the work hours of residents to 80 hours/week, and no more than 24 hours duty, in July 2003, with the intention of reducing the burnout rate during residency. Though this step has had positive effect on burnout, it has negatively affected the academic activities and surgical work of residents (Martini et al, 2006).

#### **BOX 4.1: Burnout among residents/postgraduates**

- It is due to a complex interaction between environmental stressors, genetic susceptibilities, and coping ability.
- It can contribute to multiple physical symptoms, psychological symptoms, and substance abuse.
- It affects quality of life, ability to provide reliable and safe patient care, quality of learning and teaching
- The negative impact of burnout on patient care includes chances of medical errors, patient safety risks, and reduction of quality of care.

### Interventions to Reduce Burnout during Post Graduation

Interventions may be implemented at two levels: Interventions at workplace, and interventions at individual level.

**Workplace-based interventions include:** Stress reduction programs; increasing awareness of burnout among faculty and staff; ensuring a reasonable workload; introducing them to various other clinician's roles such as teaching, research, and supervision; formal mentoring program; team building exercises and emotional intelligence training; programs to support residents to handle both personal and professional issues, under strict confidentiality; and programs that teach residents about time management, stress management, meditation and other relaxation techniques.

**Individual:** Interventions to reduce stress and burnout among residents include—consulting peers when faced with difficult cases; spending leisure time with peers, sharing laughs, voicing challenges at workplace; developing work-related social network—this can be done when attending conferences, lectures or workshops; performing physical exercise, meditation reduces anxiety and depression and hence chances of burnout; mindfulness techniques, yoga, reflective writing, spiritual activities, scheduled daily breaks for rest, music, massage, and enjoying nature; mentors and faculty members serve as role models and practice some of these techniques for the residents to follow.

As Maslach (2003) summed up effective solution for preventing burnout—'*If all of the knowledge and advice about how to beat burnout could be summed up in 1 word, that word would be **balance**—balance between giving and getting, balance between stress and calm, balance between work and home.*'

## BURNOUT IN MEDICAL STUDENTS

Medical students at various stages of their training show signs of stress and burnout (Dyrbye et al, 2010). Of the triad of burnout syndrome, high emotional exhaustion is more prevalent among medical students. Students at different stages of study such as preclinical students, paraclinical students and interns have different stressors that cause distress and burnout. First years exhibit emotional and physical exhaustion, whereas paraclinical and clinical students start showing signs of cynicism. Final year students stress out because they feel the education system is not preparing them adequately to face the future with confidence.

### Stressors in Medical Students

**The academic stressors** such as heavy curricular load, tight time schedule, demanding and different educational environment, and dissection of the dead bodies are common for new entrants to medical college. The active, student-centered teaching/learning strategies adopted in medical education, which are quite distinct from the ones the students were familiar with during their pre-medical days, becomes a stressor. Language barrier, especially when coming from vernacular background, that leads to faulty communication with peers and teachers, adds to the distress.

As they progress to 2nd year, contact with very sick patients, dealing with serious illnesses and death, and lack of time for leisure activities with family and friends are contributing factors for inducing stress. Lack of support from teachers and not clear about their roles act as stressors as students' progress in their studies. Lack of feedback from teachers appears to be a common stress factor through all years of medical studies (M. Dahlin et al, 2005; Dyrbye et al, 2006).

**Social factors** such as staying away from family for the first time, adjusting to new place of living and study, cultural shock for students coming from smaller places are some of the social stressors identified in first year students. Social and family expectations add to the stress levels.

Financial problems, as well as uncertainties of the future once they become interns, self-awareness of incompetence to practice independently are the triggers for stress and burnout during the later years of undergraduate studies.

### Effects of Distress and Burnout in Medical Students

Even if a student shows signs of any one of the three dimensions of the burnout syndrome, it is likely to interfere in their studies as well as manifest in the form of physical symptoms such as drowsiness, fatigue, eating disorders, migraine, emotional instability, and may lead to alcohol and substance abuse (Arora et al, 2016). Psychological morbidity, anxiety, depression and suicidal ideation are much higher in medical students as compared to general population (Dyrbye et al, 2011; Heinen et al, 2017; Moffat et al, 2004). This is a major problem as burnout affects professionalism, leads to dropout, and desperate measures, and results in higher levels of suicide.

### Interventions for Coping

Personal traits such as adaptive behaviour, healthy lifestyle, optimism, resilience, greater flexibility, and problem-solving capacity are helpful in coping with distress and burnout. Higher self-efficacy results in mental and physical wellness. Further stress reduction practices like meditation, yoga, relaxation techniques must be adopted. Peer support groups are very important, as are mentorship programs and faculty support and feedback on a regular basis. Students must be encouraged to participate in co-curricular activities. At the same time, psychological and career counselling facilities must be made available free of cost.

To address issue of stress and burnout, many medical colleges have started student support groups and other activities that could reduce their stress levels and future burnout. Individual student may develop his/her survival attitude as a coping strategy with the hope that the stressful situation will improve once they enter post graduation.

It is essential to select prospective medical students with necessary ability and commitment to pursue career in medicine, to ensure that they understand the demands, and challenges they are likely to face in this profession. Training in humanities would go a long way to teach them to be altruistic, committed to their goals of serving the sick and improving the health of the community.



## BURNOUT AMONG CAREGIVERS

Care giving can be rewarding as well as a demanding work. It is observed that the negative consequences outway the positive effects of care giving. Caregivers could be categorised into two categories—informal and formal caregivers.

Informal caregivers are those individuals who willingly take the responsibility of caring for a relative or a friend who is ill, facing disability, or any condition that requires specific care (Schulz and Tompkins, 2010). They occupy an important place in enhancing the psychological well-being and physical health of the people suffering from disability and inadequate functioning. Informal caregiver burnout was first described as ‘spouse burnout syndrome’ (Ekberg et al, 1986). They will be able to carry out their task if they are physically and psychologically in good health. Hence, it is essential to focus on the extent and influence of burnout among caregivers to ensure their effectiveness.

Informal caregivers show more emotional exhaustion, and, to a lesser extent, depersonalization and reduced personal accomplishment (Gérain and Zech, 2021) as compared to non-caregivers. Informal care giving is associated with increased levels of depression and anxiety, extreme fatigue, stress, anger, frustration, feeling overwhelmed, poorer self-reported physical health, compromised immune function and increased mortality. They feel socially isolated and the financial loss, if they had to stop working (Dharmawardene et al, 2016).

Formal caregivers who are engaged in taking care of geriatric population, those with chronic neurological diseases such as Alzheimer’s or dementia, or those providing care at palliative centres or nursing homes are more prone for burnout. This may be due to the frequency of deaths observed, and the stress of caring for physically dependent patients afflicted by severe chronic diseases (Blanchard et al, 2010; Gosseries et al, 2012). Younger age, female gender and workload, especially at night are the predisposing factors for burnout. Burnout in the caregiver may result in absenteeism, leaving the job, depression or suicide (McGilton et al, 2013; Piers et al, 2012).

Burnout can have significant consequences on the quality of care. It increases the risk of neglect and abuse, especially in geriatric population (Bužgová and Ivanová, 2011; McDonald et al, 2012). A direct impact on patient mortality is observed, too (Wallace et al, 2010).

Preventive measures to improve satisfaction at work and mitigate burnout among informal care givers include:

- Doing relaxing activities such as cooking, going to place of worship, or taking on leisure activities they used to do prior to becoming the primary caregiver.
- Allowing caregivers regular leisure time.
- Counselling—finding someone with whom they can share their feelings. Consult a professional if need be.
- Maintaining sense of humor—it is okay to laugh and be humorous to lighten up the stressful moments.
- Build a local support system.

- Mindfulness meditation, focused concentration, open awareness, body/internal focus, nature/external focus, yoga, tai chi, qigong.
- Institutional support groups or Balint groups may also prevent exhaustion.

## ASSESSING STRESS AND BURNOUT

**Instruments to measure stress:** The stress can be assessed using wide range of measures, like:

- Beck's Depression Inventory (BDI) (Peterlini et al, 2002; Stewart et al, 1997)
- General Health Questionnaire 12 (GHQ-12) (Guthrie et al, 1998)
- Symptom Checklist (SCL) (Bramness et al, 1991).

It can be monitored using specific measures such as:

- Perceived Medical School Stress (PMSS) scale (M. Dahlin et al, 2005)
- Higher Education Stress Inventory (HESI) (Stewart et al, 1997)

**Instruments to measure burnout:** One of the most popular instruments was introduced by Maslach and Jackson in 1981, the Maslach Burnout Inventory (MBI) (Maslach et al, 1996; Maslach and Jackson, 1981b). The MBI is designed to assess the three dimensions of the burnout experience. Later on, versions specific to educators (MBI-ES), human service workers (MBI-HSS) and for students (MBI-SS) have been constructed and widely used.

The Bergen Burnout Inventory (BBI) (Salmela-Aro et al, 2011) assesses three dimensions of burnout at work. The Oldenburg Burnout Inventory (OLBI) assesses the two dimensions of exhaustion and disengagement from work (Halbesleben and Demerouti, 2005). The Copenhagen Burnout Inventory (CBI) (Kristensen et al, 2005), and the student version (CBI-SS) is another widely used inventory to measure burnout in general population and students, respectively.

## COPING WITH STRESS

All of us have faced stressful situations in our lives, some time or the other. How each individual responds to stress is quite different, a situation considered as stressful by one person may not be perceived as stressful by another. As per the transactional model of stress and coping (RS Lazarus, 1984), the experience of stress is an interaction of the person and the situation. A situation considered as harmful, intimidating or challenging and that cannot be handled with the available resources are perceived as stressful. Here the resources are one's personality, education, previous experience, age, physical and mental health, social support and finances (Stephenson and DeLongis, 2020). The intellectual and behavioural responses implemented to face the situation is called coping (Folkman et al, 2000). Both effective and failed attempts at managing stress are included as coping.

As coping strategies vary from person to person and from one situation to another it is very difficult to match a particular stressor to a definite coping method. Coping is an active process and persons who change their coping style to suit the situation are considered effective copers. For example, the initial response to a diagnosis of

chronic neurological disease is invariably denial, but as the person and his family members accept the diagnosis, they start adapting to the situation gradually.

Tripartite model of coping has been proposed (Stephenson et al, 2016) that addresses different functions of the coping process.

1. **Problem-focused coping:** This is either focused on the situation when the efforts are directed towards changing the situation or focused on changing ourselves, such as learning new skills to increase personal resources. The steps involved in former coping mechanism include defining the tricky situation, thinking of alternative solutions, comparing these alternatives in terms of their likely costs and benefits, picking the most possible solution, coming up with a plan, and then implementing it.

If a situation is perceived as highly threatening, this coping strategy may not work. It is best suited for situations which are considered to be amenable to change. For example, problem-focused coping will not work when one is trying to cope with a death of a loved one. In such situations the emotional-focused strategy may be more effective.

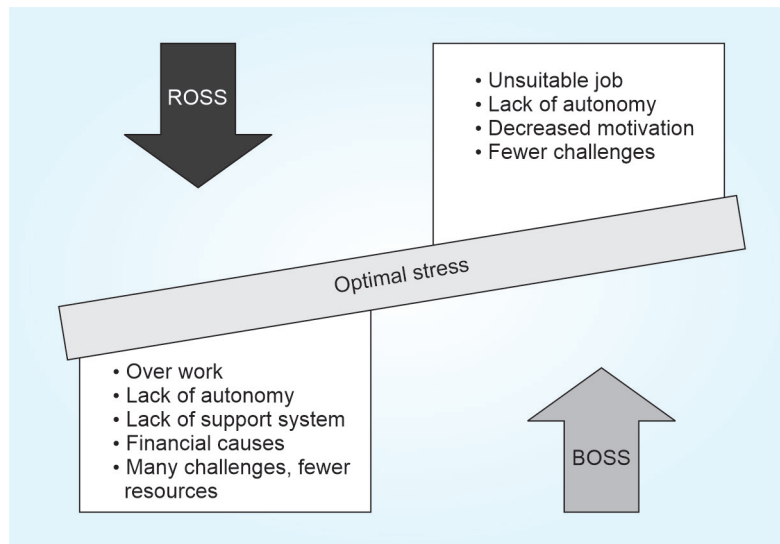
2. **Emotional-focused coping:** The principal aim of this strategy is to reduce the emotional distress. This could be tried through distancing oneself from the situation, or avoiding it. This type of denial strategies are frequently used during cognitive behavioural therapies (Stephenson et al, 2016).
3. **Relationship-focused coping:** It is very important to maintain social relationships during the coping stage (Coyne and Smith, 1991). It is important to keep in mind the effect of one's coping efforts that might have on the close relations. Relationship-focused coping strategies pay attention to providing support, responding compassionately, and trying to resolve issues (O'Brien and DeLongis, 1996) However, such relationship-focused strategies have shown to have both positive and negative effects on the relationships.

Based on the situation, these coping functions can be combined effectively. Contextual factors such as the type of the stressful situation, the personality of the individual, and social context can all impact whether or not a particular coping strategy will be effective.

## RUST OUT

As the name suggests, rust out is burnout's boredom-based counterpart (Fig. 4.3). Instead of work overload, if someone has to do an uninspiring job that fails to stimulate, is much below one's capabilities, the person may 'rust out'. Occupational psychologists believe that the harm caused by boredom may exceed that caused by overwork. Unchecked rust out can lead to depression and even physical symptoms. Similar to rusting of the tool, this too is a slow, long drawn process.

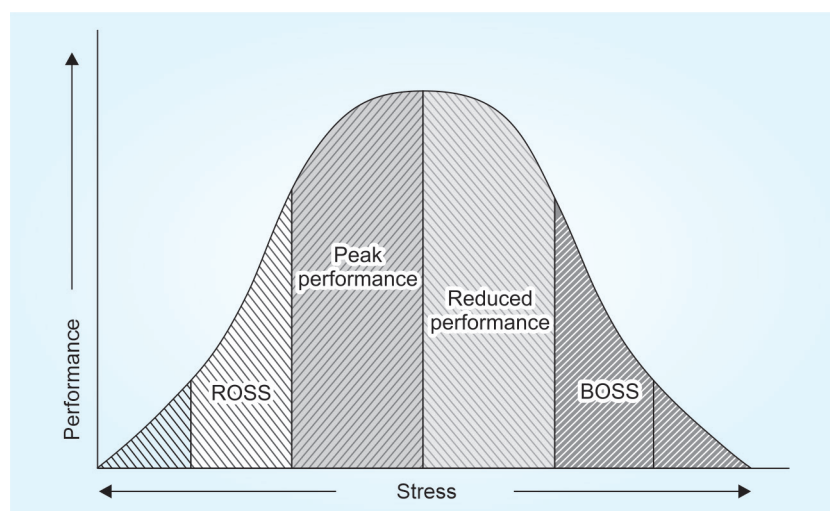
It is most commonly seen in midlevel and younger faculty. The causes identified are—lack of empowerment, paperwork overload, endless meetings, repetitive tasks, and no scope for creativity.



**Fig. 4.3:** Relation between burnout stress syndrome (BOSS) and rust out stress syndrome (ROSS)

This syndrome can be seen in students, too, especially those who are very bright, talented or gifted. They may find the routine teaching in the class too dull or boring and may stop attending the classes. This 'one size fits all' method of teaching may gradually result in loss of interest in the studies, leading to dropout or depression. Rust out may be seen in another set of students, those who do not have any motivation in pursuing their studies, having been forced to take up a professional course which is not of their choice. They become disinterested and apathetic. This rust out stress pushes them towards alcohol and substance abuse (Arora et al, 2016).

Whether rust out is affecting the employees or the students, the institutional administrators should recognize this entity and have strategies in place to prevent it. It is important to ensure that people skills and jobs match and that the workplace has, that little bit of stress (optimum) that is good for employees (Fig. 4.4).



**Fig. 4.4:** Relationship between stress and performance

The first category of students should be identified during the initial phase and given additional, stimulating inputs. The second category needs to be counselled, mentored and monitored to prevent the rust out.

## CONCLUSION

Stress and burnout are commonly seen in persons working in human-oriented jobs including teachers, physicians, medical students and caregivers. It is a complex phenomenon that reflects the interaction between environmental stressors, personality of the individual, and coping styles. Burnout can result in physical, and/or psychological symptoms, and substance abuse, all of which can have a bearing on the person's quality of life, ability to provide sustainable and safe patient care, quality of learning and teaching, and the overall morale of a caregiver.

Burnout must be addressed by leadership in academic institutions and hospitals. As we move toward national healthcare reform and attempt to upgrade our approach to training UGs and PGs, attention must be paid to personal well-being. This is critical to produce effective, humane next generation of physicians.

## BIBLIOGRAPHY

- Arora, A, Kannan, S, Gowri, S, Choudhary, S, Sudarasan, S, and Khosla, PP. Substance abuse amongst the medical graduate students in a developing country. *The Indian Journal of Medical Research*:2016;143(1):101–3.
- Berg, S. WHO adds burnout to ICD-11. What it means for physicians. *American Medical Association, Physician Health*. July 2019.
- Blanchard, P, Truchot, D, Albiges-Sauvin, L, Dewas, S, Pointreau, Y, Rodrigues, M, Xhaard, A, Lorient, Y, Giraud, P, and Soria, JC. Prevalence and causes of burnout amongst oncology residents: A comprehensive nationwide cross-sectional study. *European Journal of Cancer* 2010;46(15):2708–15.
- Bramness, JG, Fixdal, TC, and Vaglum, P. Effect of medical school stress on the mental health of medical students in early and late clinical curriculum. *Acta Psychiatrica Scandinavica* 1991;84(4):340–45.
- Brouwers, A, and Tomic, W. Teacher burnout, perceived self-efficacy in classroom management, and student disruptive behaviour in secondary education. *Curriculum and Teaching* 1999;14(2):7–26.
- Bužgová, R, and Ivanová, K. Violation of ethical principles in institutional care for older people. *Nursing Ethics* 2011;18(1):64–78.
- Cohen, JS, and Patten, S. Well-being in residency training: A survey examining resident physician satisfaction both within and outside of residency training and mental health in Alberta. *BMC Medical Education* 2005;5(1):1–11.
- Collier, VU, McCue, JD, Markus, A, and Smith, L. Stress in medical residency: Status quo after a decade of reform? *Annals of Internal Medicine* 2002;136(5):384–90.
- Coyne, JC, and Smith, DA. Couples coping with a myocardial infarction: A contextual perspective on wives' distress. *Journal of Personality and Social Psychology* 1991;61(3):404.

- Dahlin, ME, and Runeson, B. Burnout and psychiatric morbidity among medical students entering clinical training: A three-year prospective questionnaire and interview-based study. *BMC Medical Education* 2007;7(1):1–8.
- Dahlin, M, Joneborg, N, and Runeson, B. Stress and depression among medical students: A cross-sectional study. *Medical Education* 2005;39(6):594–604.
- Davis, MH, Harden, RM. AMEE Medical Education Guide No. 15: Problem-based learning: a practical guide. *Medical Teacher* 1999;21(2):130–40.
- Dharmawardene, M, Givens, J, Wachholtz, A, Makowski, S, and Tjia, J. A systematic review and meta-analysis of meditative interventions for informal caregivers and health professionals. *BMJ Supportive and Palliative Care* 2016;6(2):160. <https://doi.org/10.1136/bmjspcare-2014-000819>
- Dyrbye, LN, Harper, W, Durning, SJ, Moutier, C, Thomas, MR, Massie Jr, FS, Eacker, A, Power, DV, Szydlo, DW, and Sloan, JA. Patterns of distress in US medical students. *Medical Teacher* 2011;33(10):834–39.
- Dyrbye, LN, Thomas, MR, Power, DV, Durning, S, Moutier, C, Massie Jr, FS, Harper, W, Eacker, A., Szydlo, DW, and Sloan, JA. Burnout and serious thoughts of dropping out of medical school: A multi-institutional study. *Academic Medicine* 2010;85(1):94–102.
- Dyrbye, LN, Thomas, MR, and Shanafelt, TD. Systematic review of depression, anxiety, and other indicators of psychological distress among US and Canadian medical students. *Academic Medicine* 2006;81(4):354–73.
- Ekberg, JY, Griffith, N, and Foxall, MJ. Spouse burnout syndrome. *Journal of Advanced Nursing* 1986;11(2):161–65.
- Evers, WJ, Tomic, W, and Brouwers, A. Burnout among teachers: Students' and teachers' perceptions compared. *School Psychology International* 2004;25(2):131–48.
- Folkman, S, Lazarus, RS, Dunkel-Schetter, C, DeLongis, A, and Gruen, RJ. (2000). *The dynamics of a stressful encounter*. In: Higgins ET, Kruglanski AW (Eds), *motivational science: Social and personality perspectives*. Psychology Press; pp. 111–117.
- Freudenberger, HJ. Staff burn-out. *Journal of Social Issues* 1974;30(1):159–65.
- Gérard, P, and Zech, E. Do informal caregivers experience more burnout? A meta-analytic study. *Psychology, Health and Medicine*, 2021;26(2):145–61.
- Gosseries, O, Demertzi, A, Ledoux, D, Bruno, MA, Vanhaudenhuyse, A, Thibaut, A, Laureys, S, and Schnakers, C. Burnout in healthcare workers managing chronic patients with disorders of consciousness. *Brain Injury* 2012;26(12):1493–99.
- Gracino, ME, Zitta, ALL, Mangili, OC, and Massuda, EM. Physical and mental health of medical professionals: A systematic review. *Saúde Em Debate* 2016;40:244–63.
- Guglielmi, RS, and Tatrow, K. Occupational stress, burnout, and health in teachers: A methodological and theoretical analysis. *Review of Educational Research* 1998;68(1): 61–99.
- Guthrie, E, Black, D, Bagalkote, H, Shaw, C, Campbell, M, and Creed, F. Psychological stress and burnout in medical students: A five-year prospective longitudinal study. *Journal of the Royal Society of Medicine* 1998;91(5):237–43.
- Halbesleben, JR, and Demerouti, E. The construct validity of an alternative measure of burnout: Investigating the English translation of the Oldenburg Burnout Inventory. *Work and Stress* 2005;19(3):208–20.
- Harden, RM. Stress, pressure and burnout in teachers: Is the swan exhausted? *Medical Teacher* 1999;21(3):245–247.

- Harrison, R van. Person-environment fit and job stress. *Stress at Work* 1978;175–205.
- Heinen, I, Bullinger, M, and Kocalevent, RD. Perceived stress in first year medical students-associations with personal resources and emotional distress. *BMC Medical Education* 2017;17(1):1–14.
- Heins, M, Fahey, SN, and Leiden, LI. Perceived stress in medical, law, and graduate students. *Journal of Medical Education* 1984;59(3):169–79.
- IsHak, WW, Lederer, S, Mandili, C, Nikraves, R, Seligman, L, Vasa, M, Ogunyemi, D, and Bernstein, CA. Burnout during residency training: A literature review. *Journal of Graduate Medical Education* 2009;1(2):236–42.
- Kristensen, T, Borritz, M, Villadsen, E, Christensen, KB. The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work and Stress* 2005;19(3):192–207.
- Martini, S, Arfken, CL, and Balon, R. Comparison of burnout among medical residents before and after the implementation of work hours limits. *Academic Psychiatry* 2006;30(4): 352–55.
- Martini, S, Arfken, CL, Churchill, A, Balon, R. Burnout comparison among residents in different medical specialties. *Academic Psychiatry* 2004;28(3):240–42.
- Maslach, C, Jackson, SE. Maslach Burnout Inventory—ES Form (MBI) [Database record]. APA Psyc Tests 1981. Accessed on 24.12.2022. Available from: <https://doi.org/10.1037/t05190-000>.
- Maslach, C, and Jackson, SE. The measurement of experienced burnout. *Journal of Organizational Behavior* 1981b;2(2):99–113.
- Maslach, C, Jackson, SE, and Leiter, MP (1996). *MBI: Maslach burnout inventory*. Consulting Psychologists Press Palo Alto, CA.
- Maslach, C, and Leiter, MP (2016). Burnout. In: *Stress: Concepts, cognition, emotion, and behavior* (pp. 351–357). Elsevier.
- McDonald, L, Beaulieu, M, Harbison, J, Hirst, S, Lowenstein, A, Podnieks, E, and Wahl, J. Institutional abuse of older adults: What we know, what we need to know. *Journal of Elder Abuse and Neglect* 2012;24(2):138–160.
- McGilton, KS, Tourangeau, A, Kavcic, C, and Wodchis, WP. Determinants of regulated nurses' intention to stay in long-term care homes. *Journal of Nursing Management* 2013;21(5):771–81.
- McManus, IC, Keeling, A, and Paice, E. Stress, burnout and doctors' attitudes to work are determined by personality and learning style: A twelve year longitudinal study of UK medical graduates. *BMC Medicine* 2004;2(1):1–12.
- Moffat, KJ, McConnachie, A, Ross, S, and Morrison, JM. First year medical student stress and coping in a problem-based learning medical curriculum. *Medical Education* 2004;38(5):482–91.
- O'Brien, TB, and DeLongis, A. The interactional context of problem-, emotion-, and relationship-focused coping: The role of the big five personality factors. *Journal of Personality* 1996;64(4):775–813.
- Oranje, AH (2001). Van ouderenbeleid tot lerarentekort [From Policy on Elderly Workers to Teacher Shortages]. *Nijmegen: Mediagroep KUN*.
- Payne, R, and Fletcher, BC. Job demands, supports, and constraints as predictors of psychological strain among schoolteachers. *Journal of Vocational Behavior* 1983;22(2):136–47.
- Peterlini, M, Tibério, IF, Saadeh, A, Pereira, JC, and Martins, MA. Anxiety and depression in the first year of medical residency training. *Medical Education* 2002;36(1):66–72.

- Piers, RD, Van den Eynde, M, Steeman, E, Vlerick, P, Benoit, DD, and Van Den Noortgate, N. J. End-of-life care of the geriatric patient and nurses' moral distress. *Journal of the American Medical Directors Association* 2012;13(1):80-e7.
- Salmela-Aro, K, Rantanen, J, Hyvönen, K, Tilleman, K, and Feldt, T. Bergen Burnout Inventory: Reliability and validity among Finnish and Estonian managers. *International Archives of Occupational and Environmental Health* 2011;84(6):635–45.
- Schaufeli, WB, Maslach, C, and Marek, T (2017). *Professional burnout: Recent developments in theory and research*. 1st edition. Routledge.
- Schulz, R, Tompkins, CA (2010). Informal caregivers in the United States: Prevalence, characteristics, and ability to provide care. In: *Human Factors in Home Healthcare*. Washington, DC: National Academies of Sciences Press.
- Siegrist, J. Adverse health effects of high-effort/low-reward conditions. *Journal of Occupational Health Psychology* 1996;1(1):27.
- Stephenson, E, and DeLongis, A. Coping strategies. *The Wiley Encyclopedia of Health Psychology* 2020;55–60.
- Stephenson, E, King, DB, and DeLongis, A (2016). Coping process. In *Stress: Concepts, cognition, emotion, and behavior* (pp. 359–364). Elsevier.
- Stewart, SM, Betson, C, Lam, TH, Marshall, IB, Lee, PWH, and Wong, CM. Predicting stress in first year medical students: A longitudinal study. *Medical Education* 1997;31(3):163–68.
- Tyssen, R, Hem, E, Vaglum, P, Grønvold, NT, and Ekeberg, Ø. The process of suicidal planning among medical doctors: Predictors in a longitudinal Norwegian sample. *Journal of Affective Disorders* 2004;80(2–3):191–98.
- Wallace, SL, Lee, J, and Lee, SM. Job stress, coping strategies, and burnout among abuse-specific counselors. *Journal of Employment Counseling* 2010;47(3):111–22.
- Wright, TA, and Bonett, DG. The contribution of burnout to work performance. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior* 1997;18(5):491–499.
- Zhou, AY, Panagioti, M, Esmail, A, Agius, R, Van Tongeren, M, and Bower, P. Factors associated with burnout and stress in trainee physicians: A systematic review and meta-analysis. *JAMA Network Open* 2020;3(8):e2013761.