

BMJ Open A cross-sectional study of burnout and its associations with learning environment and learner factors among psychiatry residents within a National Psychiatry Residency Programme

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ABSTRACT

Background Multiple studies have reported high burnout rates among residents, including psychiatry. There is a paucity of studies examining the relationship between burnout and learning context, stress levels, resilience, stigma in healthcare providers and coping methods concurrently within the same cohort.

Objective We examined the rate of burnout among our psychiatry residents in a cross-sectional study and hypothesised that burnout is associated with poorer perception of learning environment, greater perceived stress, stigma levels, lower resilience and specific coping strategies during training.

Methods Ninety-three out of 104 psychiatry residents (89.4%) within our National Psychiatry Residency Programme participated in the study from June 2016 to June 2018. Relevant scales were administered to assess the perception of learning environment, burnout, stress, resilience, stigma levels and coping methods, respectively. We performed comparisons of the above measures between groups (burnout vs no burnout) and within-group correlations for these same measures.

Results Overall, 54.8% of the sample met criteria for burnout. Residents with burnout had poorer perception of the learning environment, greater stress levels (both $p < 0.001$), were less willing to disclose/seek help and employed greater active-avoidance coping strategies. Within the burnout group, greater perceived stress was correlated with poorer perception of learning environment ($r_s = -0.549$) and greater use of active-avoidance coping ($r_s = 0.450$) versus additional use of problem-focussed coping within the non-burnout group.

Conclusions Burnout was related to both environment and learner factors. These findings viewed within the transactional, sequential and imbalance models of burnout suggest the need to address stressors, beef up coping, provide continual support and develop resilience among our learners.

INTRODUCTION

Burnout among residents is an issue that is gaining increasing attention due to

Strengths and limitations of this study

- There is a paucity of studies examining burnout among psychiatry residents and specific factors related to learner factors (such as perceived stress levels, resilience, stigma towards mental illness and coping strategies) and learning environment.
- This study was conducted within a National Psychiatry Residency Programme with findings that would be generalisable to relevant training sites.
- The findings of this study viewed within extant models of burnout provided some possible strategies which need to address stressors, beef up coping, allow continual support and develop resilience to promote wellness within our learners.
- Limitations include the cross-sectional nature of the study and that while we have tried to incorporate a range of intrinsic and extrinsic variables that could contribute to burnout, other factors such as the personality of residents and external life events were not assessed.

its impact on the learner, training and patient care.^{1 2} Burnout often manifests as emotional exhaustion, and disengagement from work-related activities.³ Extant studies examining burnout across different residency programme have reported prevalence rates of up to 80%,^{4 5} depending on the scales used and threshold criteria adopted. Similarly, high burnout rates (up to 87%) have been reported within psychiatry residents although most studies were conducted in North America.⁶⁻⁸ Among psychiatry residents, burnout has been associated with various demographic (such as married but not having children),⁹ work related (such as increased workload, lack of clinical supervision)^{9 10} and learner (such as decreased empathic capacity)¹¹ factors.

Previous studies within psychiatry residents have examined either burnout within a resilience curriculum⁷ or associations between burnout and specific factors such as stress levels^{12 13} and coping¹⁴ within the learners. Thus far, no study has attempted to examine the association between burnout and residents' perception of their learning environment in the context of a combination of learner factors (specifically resilience, stigmatising attitude towards mental illness, perceived stress level and coping strategies) which are relevant to the clinical practice of psychiatry.

Several models of burnout are pertinent for our consideration. The first is the 'transactional' model¹⁵ involving stress and coping. It views burnout as a way of coping with work stress, which highlights the importance of enhancing coping of our learners especially when they are new to residency.¹⁵ The second is a 'sequential' model which describes the development of emotional exhaustion towards work demands, which then progresses to depersonalisation, and subsequent decreased self-efficacy and personal accomplishment.^{16 17} This points to the need to identify emotional exhaustion early before it spirals downstream. The third model is the 'imbalance' model that views burnout as arising from a lack of balance between job demands and resources available.¹⁸ This suggests the need to address both work expectations and provision of adequate resources to meet them. In view of the scarcity of studies examining burnout among psychiatry residents in Asia, and specific factors germane to learner and learning environment, we seek to clarify the rate of burnout among our cohort of psychiatry residents within a National Psychiatry Residency Programme and determine its relationship with perception of learning environment and learner factors (such as perceived stress levels, resilience, stigma towards mental illness and coping strategies).

METHODS

Study sample

From June 2016 to June 2018, we recruited psychiatry residents across five residency years within our National Psychiatry Residency Programme. Details of the study were explained to the residents and signed informed consent was obtained before administration of questionnaires by research team staff not related to the residency programme.

Patient and public involvement

Patients and the public were not involved in this study.

Rating scales

The Oldenburg Burnout Inventory (OBI)³ was used to assess burnout levels in residents. The scale consists of 16 items, with responses ranging from 1 (*strongly agree*) to 4 (*strongly disagree*). Higher scores indicate higher levels of burnout and there are two subscales, namely

exhaustion and disengagement. Exhaustion is defined as a consequence of intensive physical, affective and cognitive stress due to one's occupation. Disengagement is defined as an emotional distancing of an individual towards patients and colleagues.

The Postgraduate Hospital Educational Environment Measure (PHEEM)¹⁹ was used to assess residents' perceptions of their learning environment. The scale consists of 40 items with three subscales, namely perceptions of role autonomy (14 items, maximum score of 56), perceptions of teaching (15 items, maximum score of 60) and perceptions of social support (11 items, maximum score of 44). Summation of all items yields an overall score ranging from 0 to 160, with higher scores indicating a more favourable perception of the learning environment.

Learner factors refer to factors which reflect how the residents perceive and interact with their learning and work environments. We have chosen to measure perceived stress level, coping strategies, resilience and stigmatising attitudes in our study.

The Perceived Stress Scale (PSS)²⁰ was used to gauge the stress level felt in the past month. The PSS has 16 items rated on a four-point Likert scale, with scores ranging from 0 to 40. Higher scores indicate a higher level of stress.

The Brief COPE Inventory²¹ was used to assess the different types of coping strategies adopted. There are 28 items on a four-point Likert scale, and scores for four coping styles can be obtained: active-avoidance, problem-focused, positive and religious/denial.²² Higher scores indicate more frequent use of a particular coping strategy.

The Brief Resilience Scale (BRS)²³ measures resilience levels of residents, and consists of six items. It is rated from 1 (*strongly disagree*) to 5 (*strongly agree*). Higher scores are indicative of better resilience.

Stigmatising attitudes can present in the form of a lack of belief in recovery,²⁴ difficulty empathising with patients, or a desire to distance oneself from those with mental illness.²⁵ Stigmatising attitudes in residents were measured with the Opening Minds Stigma Scale for Healthcare Providers (OMS-HC).²⁶ It consists of 20 items on a five-point Likert scale, ranging from 0 (*strongly disagree*) to 4 (*strongly agree*). Higher scores are indicative of more stigmatising attitudes. Scores for three subscales can be obtained: stigma towards people with mental illness, stigma towards disclosure/help-seeking and keeping social distance.

Statistical analyses

All analyses were conducted using IBM SPSS V.23.²⁷ To investigate the relationship between burnout and other factors, we split residents into two groups based on whether they met the criteria for burnout. Based on previous criteria,²⁸ residents with mean scores of ≥ 2.25 on exhaustion and ≥ 2.1 on disengagement subscales of the OBI were considered as experiencing

Table 1 Demographics of sample

Variable	Burnout (n=51)	No burnout (n=41)
Gender, n (%) [*]		
Males	32 (62.7)	22 (53.7)
Females	19 (37.3)	19 (46.3)
Marital status, n (%) [*]		
Single	29 (56.9)	25 (61.0)
Married	22 (43.1)	15 (36.6)
Divorced	0 (0.0)	1 (2.4)
Year of residency, n (%) [*]		
1	15 (29.4)	20 (48.8)
2	10 (19.6)	6 (14.6)
3	12 (23.5)	6 (14.6)
4	8 (15.7)	4 (9.8)
5	6 (11.8)	5 (12.2)
Age, mean (SD), years [*]	29.5 (2.56)	29.4 (3.92)

^{*}No significant differences ($p>0.05$) between groups based on χ^2 /independent t-tests.

burnout. Independent samples T-tests and χ^2 tests were conducted to examine if there were significant differences between these two groups on all measures.

We also conducted Spearman correlations between all scales within each group (burnout/no burnout) to examine interrelationships between the measures.

RESULTS

Sample characteristics

Ninety-three (89.4%) out of 104 residents took part in the study as they gave informed consent to participate, and 58.1% (n=54) were male. Overall, 54.8% (n=51) of them met the criteria for burnout and one resident did not complete the questionnaire. χ^2 tests revealed no difference between both groups (burnout vs no burnout) regarding gender, marital status, year of residency and age (see [table 1](#)). Correlation analyses showed no significant relationships between burnout scores on both subscales and demographic variables (age, marital status, gender, year in residency).

Group differences on all measures

Both groups differed significantly on the PHEEM and all its subscales (role autonomy, teaching, social support) (all $p<0.001$), with the burnout group recording lower mean scores (see [table 2](#)).

Burnout group scored higher on PSS ($p<0.001$), OMS-HC stigma towards disclosure/help-seeking subscale ($p=0.017$) and adopted active-avoidance coping more frequently ($p=0.004$).

Both groups did not differ significantly on the BRS scores, brief COPE problem-focused, positive and religious/denial subscales, and OMS-HC stigma towards mental illness and keeping social distance subscales.

Correlations between measures (within groups)

Correlation analyses revealed that higher PSS scores correlated with lower PHEEM total scores ($r_s=-0.549$, $p<0.001$) and all PHEEM subscale scores (all $p<0.01$) in the burnout group. Additionally, higher PSS scores were correlated with higher ratings on both active-avoidance

Table 2 Differences between residents with and without burnout

Scale	Mean (SD) (burnout vs no burnout)	T	DF	P value
PHEEM role autonomy	37.0 (6.17) versus 42.0 (3.88)	4.70	82.0	<0.001
PHEEM teaching	41.2 (7.21) versus 46.0 (4.11)	3.73	88.0	<0.001
PHEEM social support	27.4 (5.04) versus 32.4 (3.87)	5.12	88.0	<0.001
PHEEM total	105.7 (17.1) versus 120.6 (10.3)	5.08	80.8	<0.001
Perceived Stress Scale	28.6 (4.88) versus 23.0 (4.14)	-5.87	90.0	<0.001
COPE active-avoidance	19.1 (3.84) versus 16.8 (3.62)	-2.97	89.0	0.004
COPE problem-focused	17.6 (3.89) versus 17.5 (4.41)	-0.161	90.0	0.872
COPE positive	17.7 (4.21) versus 17.4 (3.67)	-0.399	89.0	0.691
COPE religious/denial	6.61 (2.09) versus 6.54 (2.44)	-0.151	90.0	0.880
OMS-HC disclosure/help-seeking	7.82 (2.44) versus 6.54 (2.61)	-2.44	90.0	0.017
OMS-HC stigma towards mental illness	6.02 (3.09) versus 5.56 (2.56)	-0.760	89.0	0.449
OMS-HC social distance	5.34 (2.45) versus 4.76 (2.05)	-1.22	89.0	0.226
Brief Resilience Scale	20.8 (3.62) versus 22.3 (3.61)	1.93	90.0	0.056

COPE, Brief COPE Scale; OMS-HC, Opening Minds Stigma Scale for Healthcare Providers; PHEEM, Postgraduate Hospital Educational Environment Measure.

coping ($r_s=0.363$, $p=0.020$) and problem-focused coping ($r_s=0.378$, $p=0.015$) in the no-burnout group, but only with active-avoidance coping ($r_s=0.450$, $p=0.001$) in the burnout group.

DISCUSSION

There are several main findings in this cross-sectional study. First, amidst the relatively high burnout prevalence (54.8%), the burnout group had poorer perceptions of learning environment (overall, role autonomy, teaching, social support), higher stress levels, more use of active-avoidance coping, and were less willing to disclose or seek help compared with the group without burnout. Second, greater perceived stress was associated with poorer perception of learning environment and only use of active-avoidance coping within the burnout group.

Slightly more than half of our residents experienced burnout, and this was within the range of burnout prevalence (up to 87%) found among psychiatry residents.^{6–8} Residents experiencing burnout in our cohort had significantly higher perceived stress levels, which was consistent with previous findings.^{10–29} Additionally, residents experiencing burnout had poorer perception of their learning environment. While emotional exhaustion from burnout can lead to poorer perception of the learning milieu, conversely, a poorer perception of autonomy and social support within the learning context can contribute to burnout.³⁰

Residents experiencing burnout employed active-avoidance coping more often than residents with no burnout. Within the transactional model of burnout, accumulation of stressors can lead to behavioural and emotional changes, which eventually causes burnout.¹⁵ The use of active-avoidance coping does not address issues precipitating stress or actively manage the stressors, causing residents to become susceptible towards developing burnout.¹⁵ Of note, Pisljar and colleagues³¹ observed that organisation-directed interventions (eg, increasing work autonomy for employees) only reduce the impact of work stress when employees are able to employ active coping strategies to deal with their stress. This underscores the importance of encouraging the use of adaptive coping strategies (eg, addressing the problem, talking to supervisor) to manage training-related stress in our residents.

In addition, we found that burnout is associated with greater stigma towards help seeking. Several earlier studies have noted that medical students and residents with burnout had greater concerns regarding personal disclosure and were less likely to believe that psychological support provided to them at their academic institution were viewed positively or managed with confidentiality.^{32–34} This may contribute towards active avoidance and allows the stressor to build up over time, inducing a greater sense of helplessness.^{35–36} The sequential model of burnout in particular emphasises

the stages of emotional change that residents may undergo, with emotional exhaustion being a cardinal event cascading down to depersonalisation and diminished personal accomplishment over time.¹⁶ Residents who feel that they lack adequate psychological support are more vulnerable to become emotionally drained, which could then manifest behaviourally as detachment from their work or difficulty in empathising with patients.¹⁷

In the burnout group, higher perceived stress was correlated with poorer perception of learning environment and increased use of active avoidance as a coping measure. In the no-burnout group, higher perceived stress was additionally correlated with the use of problem-focussed coping. This indicates that differences in coping strategies may predict or perpetuate burnout in residents, but longitudinal study designs are required to clarify the nature of this relationship.

Strengths of this study include the examination of burnout rates among psychiatry residents and contributing factors specific to the learner (such as perceived stress levels, resilience, stigma towards mental illness and coping strategies) as well as the learning environment. This study was conducted within a National Psychiatry Residency Programme and the findings obtained are likely to be generalisable to relevant training sites. The findings of this study viewed within extant models of burnout provided some possible strategies to promote wellness within our learners. Some limitations of this study include the cross-sectional nature of the study which does not enable the examination of change over time. While we have tried to incorporate a range of intrinsic and extrinsic variables that could contribute to burnout, other factors such as the personality of residents and external life events were not assessed.

Interventions for residents

The findings of this study viewed within the three models of burnout provided some possible strategies. Several core foci would be to address stressors, beef up coping, provide and ensure continual support, and develop resilience within our learners. These strategies are synergistic and not operating in isolation to promote resident wellness. First, there is a need to address stressors which are often the initial trigger of a cascade of personal responses to deal with the stressor as explained by the transactional model. New residents should be provided closer, personal supervision by supervisors, as well as a buddy system with senior residents.³⁷ These mentors can highlight to learners early in their residency training the importance of being aware of one's stressors,⁷ and spot or address any concerns they may hold before the stress levels increase inordinately and lead to burnout. This includes proper adjustment to the rigours of training programme involving evaluations, rotations through different postings and expectations of supervisors. Second, attempts to beef up coping rather than avoidance can include discussions with

focus on fatigue management, sleep hygiene, having a balanced lifestyle incorporating work, study, recreation and spending time with loved ones, as well as exam preparation. Third, continual support emphasises the need for deliberate and sustained efforts to look out for residents who may be at the initial stage of emotional exhaustion. Intentionally setting up points of contact with the residents to provide support as needed along the way may ameliorate the risk of future burnout as suggested in the sequential model.¹⁷ In addition, the scheduling of regular sessions with faculty supervisors, the main and associate programme directors, regular communication between faculty and ad hoc sessions whenever warranted can be considered. Fourth, in order to develop resilience, residents should be encouraged to build meaningful relationships in their personal and professional spheres.³⁸ Apart from being understanding and supportive, faculty should be encouraged to share openly about their experiences in self-care and challenges they faced.³⁹ This balanced perspective, with a focus on adaptability, can pave the way for building better resilience among our learners.³⁹

CONCLUSION

In conclusion, we found that burnout was associated with poorer perception of the learning milieu and specific learner factors within our psychiatry residents. Possible strategies viewed within the different models of burnout are suggested to address issues related to stressors, coping, continual support and development of resilience within our learners.

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REFERENCES

1. Bahrer-Kohler S. *Mental health in the workplace – burnout and stress at work*. Occoquan (Va: World Federation for Mental Health (US), 2017. <https://wfmh.global/wp-content/uploads/2017-wmhd-report-english.pdf>
2. ACGME. *Physician well-being: the ACGME and beyond*. Chicago (IL: Accreditation Council for Graduate Medical Education, 2018. <https://www.acgme.org/Meetings-and-Educational-Activities/Annual-Educational-Conference/Blog/Details/ArticleID/6288/Physician-Well-Being-The-ACGME-and-Beyond>
3. Demerouti E, Mostert K, Bakker AB. Burnout and work engagement: a thorough investigation of the independency of both constructs. *J Occup Health Psychol* 2010;15:209–22.
4. Dyrbye L, Shanafelt T. A narrative review on burnout experienced by medical students and residents. *Med Educ* 2016;50:132–49.
5. Lee PT, Loh J, Sng G, et al. Empathy and burnout: a study on residents from a Singapore institution. *Singapore Med J* 2018;59:50–4.
6. Afzal KI, Khan FM, Mulla Z, et al. Primary language and cultural background as factors in resident burnout in medical specialties: a study in a bilingual us City. *South Med J* 2010;103:607–15.
7. Chaukos D, Chad-Friedman E, Mehta DH, et al. SMART-R: a prospective cohort study of a resilience curriculum for residents by residents. *Acad Psychiatry* 2018;42:78–83.
8. Domaney NM, Torous J, Greenberg WE. Exploring the association between electronic health record use and burnout among psychiatry residents and faculty: a pilot survey study. *Acad Psychiatry* 2018;42:648–52.
9. Jovanović N, Podlesek A, Volpe U, et al. Burnout syndrome among psychiatric trainees in 22 countries: risk increased by long working hours, lack of supervision, and psychiatry not being first career choice. *European Psychiatry* 2016;32:34–41.
10. Martini S, Arfken CL, Balon R. Comparison of burnout among medical residents before and after the implementation of work hours limits. *Academic Psychiatry* 2006;30:352–5.
11. Park C, Lee YJ, Hong M, et al. A multicenter study investigating empathy and burnout characteristics in medical residents with various specialties. *J Korean Med Sci* 2016;31:590–7.
12. Chaukos D, Chad-Friedman E, Mehta DH, et al. Risk and resilience factors associated with resident burnout. *Acad Psychiatry* 2017;41:189–94.
13. Benson NM, Chaukos D, Vestal H, et al. A qualitative analysis of stress and relaxation themes contributing to burnout in first-year psychiatry and medicine residents. *Acad Psychiatry* 2018;42:630–5.
14. Kealy D, Halli P, Ogrodniczuk JS, et al. Burnout among Canadian psychiatry residents: a national survey. *Can J Psychiatry* 2016;61:732–6.
15. Cherniss C. *Staff burnout: job stress in the human services*. Vol v.2. Beverly Hills (CA: Sage Publications, 1980.
16. Leiter MP, Maslach C. The impact of interpersonal environment on burnout and organizational commitment. *J Organ Behav* 1988;9:297–308.
17. Leiter MP. Burn-out as a crisis in self-efficacy: conceptual and practical implications. *Work & Stress* 1992;6:107–15.
18. Bakker AB, Demerouti E. The job Demands-Resources model: state of the art. *Journal of Managerial Psych* 2007;22:309–28.
19. Roff S, McAleer S, Skinner A. Development and validation of an instrument to measure the Postgraduate clinical learning and teaching educational environment for hospital-based junior doctors in the UK. *Med Teach* 2005;27:326–31.
20. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. *J Health Soc Behav* 1983;24:385–96.
21. Carver CS. You want to measure coping but your protocol' too long: Consider the brief cope. *Int J Behav Med* 1997;4:92–100.
22. Hastings RP, Kovshoff H, Brown T, et al. Coping strategies in mothers and fathers of preschool and school-age children with autism. *Autism* 2005;9:377–91.
23. Smith BW, Dalen J, Wiggins K, et al. The brief resilience scale: assessing the ability to bounce back. *Int J Behav Med* 2008;15:194–200.

24. Mueser KT, Corrigan PW, Hilton DW, *et al.* Illness management and recovery: a review of the research. *PS* 2002;53:1272–84.
25. Link BG, Cullen FT, Frank J, *et al.* The social rejection of former mental patients: understanding why labels matter. *Am J Sociol* 1987;92:1461–500.
26. Kassam A, Papish A, Modgill G, *et al.* The development and psychometric properties of a new scale to measure mental illness related stigma by health care providers: the opening minds scale for health care providers (OMS-HC). *BMC Psychiatry* 2012;12:62.
27. IBM CR. *Ibm SPSS statistics for windows, version 23.0*. Armonk, NY: IBM Corp, 2015.
28. Peterson U, Demerouti E, Bergström G, *et al.* Work characteristics and sickness absence in burnout and nonburnout groups: a study of Swedish health care workers. *Int J Stress Manag* 2008;15:153–72.
29. Goldhagen BE, Kingsolver K, Stinnett SS, *et al.* Stress and burnout in residents: impact of mindfulness-based resilience training. *Adv Med Educ Pract* 2015;6:525–32.
30. Llera J, Durante E. Correlation between the educational environment and burnout syndrome in residency programs at a university hospital. *Arch Argent Pediatr* 2014;112:6–11.
31. Pisljar T, van der Lippe T, den Dulk L. Health among hospital employees in Europe: a cross-national study of the impact of work stress and work control. *Soc Sci Med* 2011;72:899–906.
32. Dyrbye LN, Eacker A, Durning SJ, *et al.* The impact of stigma and personal experiences on the help-seeking behaviors of medical students with burnout. *Academic Medicine* 2015;90:961–9.
33. Ey S, Moffit M, Kinzie JM, *et al.* “If you build it, they will come”: Attitudes of medical residents and fellows about seeking services in a resident wellness program. *J Grad Med Educ* 2013;5:486–92.
34. Guille C, Speller H, Laff R, *et al.* Utilization and barriers to mental health services among depressed medical interns: a prospective multisite study. *J Grad Med Educ* 2010;2:210–4.
35. Roth S, Cohen LJ, Approach CLJ. Approach, avoidance, and coping with stress. *Am Psychol* 1986;41:813–9.
36. LeDoux JE, Gorman JM. A call to action: overcoming anxiety through active coping. *AJP* 2001;158:1953–5.
37. Eckleberry-Hunt J, Van Dyke A, Lick D, *et al.* Changing the conversation from burnout to wellness: physician well-being in residency training programs. *J Grad Med Educ* 2009;1:225–30.
38. Winkel AF, Honart AW, Robinson A, *et al.* Thriving in scrubs: a qualitative study of resident resilience. *Reprod Health* 2018;15:53.
39. Abaza MM, Nelson KG. Leading by example: role modeling resilience helps our learners and ourselves. *Acad Med* 2018;93:157–8.